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**ENGLISH FOR MEDICAL  
SPECIALISTS**

**(TEXTBOOK OF ENGLISH FOR STUDENTS  
OF HIGHER MEDICAL EDUCATIONAL  
ESTABLISHMENTS OF UKRAINE  
III and IV LEVELS OF ACCREDITATION)**

**PART I**

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**АНГЛІЙСЬКА МОВА ДЛЯ  
ФАХІВЦІВ У ГАЛУЗІ  
МЕДИЦИНИ  
(ПІДРУЧНИК З АНГЛІЙСЬКОЇ МОВИ ДЛЯ  
СТУДЕНТІВ ВИЩИХ МЕДИЧНИХ  
НАВЧАЛЬНИХ ЗАКЛАДІВ УКРАЇНИ  
III та IV РІВНІВ АКРЕДИТАЦІЇ)**

**ЧАСТИНА I**

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Рекомендовано Міністерством охорони здоров'я України як підручник для студентів вищих медичних навчальних закладів IV рівня акредитації (Протокол №3 від 22 травня 2009р.).

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Підручник з англійської мови “English for Medical Specialists” для студентів вищих медичних навчальних закладів України III-IV рівня акредитації. Частина I.

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Основна мета підручника – систематизувати та поглибити знання студентів вищих медичних закладів з фонетики, словотворення, граматики та лексики англійської мови та розвинути навички читання та перекладу літератури за фахом, а також сприяти можливості усного мовлення за фаховими темами. Підручник розрахований для студентів, магістрів та аспірантів вищих медичних навчальних закладів України III-IV рівня акредитації. Може бути використаним для проведення практичних занять та самостійної роботи.

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## ПЕРЕДМОВА

Знання іноземних мов є важливою передумовою для налагодження особистих, культурних, професійних та економічних контактів. Зростаючі потреби в спілкуванні та співпраці між країнами і людьми з різними мовними та культурними традиціями, зміни освітніх концепцій, перехід від традиційних форм навчання до пошуку нових, ефективніших вимагають суттєвих змін у підході до викладання іноземних мов в вищій школі, особливо в умовах кредитно-модульної системи навчання відповідно до вимог Болонського процесу.

З урахуванням оновлених цілей, методів та освітніх технологій навчання іноземним мовам на основі програми з англійської мови для вищих медичних закладів освіти України III-IV рівнів акредитації створений підручник з англійської мови “English for Medical Specialists”. Його мета – сприяти розвитку та поглибленню базових навичок фахового спілкування, що передбачає оволодіння відповідними фонетичними, лексичними, граматичними та стилістичними засобами. При цьому автори намагалися сприяти засвоєнню лінгвістичного компоненту мови у нерозривному поєднанні з соціокультурним компонентом та прагматичною ефективністю.

Підручник складається з двох частин – для студентів першого та другого року навчання. Перша частина містить 2 розділи, що включають 38 уроки, друга частина – 3 розділи, тобто 27 уроків (з 39 по 65). Кожну частину доповнює матеріал зі словотворення, граматичний довідник та словник.

Підручник включає автентичні чи частково адаптовані тексти фахового спрямування, що належать до наукового, науково-популярного та офіційно-ділового стилів різних жанрів, наприклад, інструкції до вживання ліків, статті з довідників, фрагменти наукових журнальних статей, історії хвороб. Усі тексти містять слова та граматичні конструкції високочастотного вжитку, а також терміни вузьких тематичних сфер. Чимало текстів супроводжується фото, малюнками.

Запропонована система вправ спрямована на розвиток різних видів мовленнєвої діяльності та містить завдання різного ступеня складності.

Автори підручника висловлюють свою подяку кафедрі іноземних мов з латинської мовою та медичною термінологією Вищого державного навчального закладу України “Українська Медична Стоматологічна Академія”, особливо зав. каф., к. філол. н., доц. І.М. Сологор, к. філол. н., доц, Р.В.Шиленко, доц. Л.В. Потяженко, ст. викл. І.Г. Романко, викл. Н.М. Демченко за рецензування та підготовку підручника до друку.

## **HIPPOCRATIC OATH**

I swear by Apollo, the healer, Asclepius, Hygieia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment, the following Oath and agreement:

To consider dear to me, as my parents, him who taught me this art; to live in common with him and, if necessary, to share my goods with him; to look upon his children as my own brothers, to teach them this art.

I will prescribe regimens for the good of my patients according to my ability and my judgment and never do harm to anyone.

I will not give a lethal drug to anyone if I am asked, nor will I advise such a plan; and similarly I will not give a woman a pessary to cause an abortion.

But I will preserve the purity of my life and my arts.

I will not cut for stone, even for patients in whom the disease is manifest; I will leave this operation to be performed by practitioners, specialists in this art.

In every house where I come I will enter only for the good of my patients, keeping myself far from all intentional ill-doing and all seduction and especially from the pleasures of love with women or with men, be they free or slaves.

All that may come to my knowledge in the exercise of my profession or in daily commerce with men, which ought not to be spread abroad, I will keep secret and will never reveal.

If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all men and in all times; but if I swerve from it or violate it, may the reverse be my lot.

## ABC

<b>A</b>	<i>[eɪ]</i>	<b>N</b>	<i>[en]</i>
<b>B</b>	<i>[bi:]</i>	<b>O</b>	<i>[ou]</i>
<b>C</b>	<i>[si:]</i>	<b>P</b>	<i>[p]</i>
<b>D</b>	<i>[di:]</i>	<b>Q</b>	<i>[kjʰ]</i>
<b>E</b>	<i>[ɛ]</i>	<b>R</b>	<i>[R]</i>
<b>F</b>	<i>[ef]</i>	<b>S</b>	<i>[es]</i>
<b>G</b>	<i>[G]</i>	<b>T</b>	<i>[t]</i>
<b>H</b>	<i>[eɪʰ]</i>	<b>U</b>	<i>[jʰ]</i>
<b>I</b>	<i>[aɪ]</i>	<b>V</b>	<i>[v]</i>
<b>J</b>	<i>[Geɪ]</i>	<b>W</b>	<i>[dʒʱbljʰ]</i>
<b>K</b>	<i>[keɪ]</i>	<b>X</b>	<i>[eks]</i>
<b>L</b>	<i>[el]</i>	<b>Y</b>	<i>[waɪ]</i>
<b>M</b>	<i>[em]</i>	<b>Z</b>	<i>[zed]</i>

### VOCABULARY

**relative** [ˈrelətɪv] родич  
**skilled** [skɪld] кваліфікований  
**kind** [kaɪnd] добрий  
**consist of** [kən'sɪst] складатися з  
**make notes** (abstracts) [nəʊts] конспектувати  
**be over** [ˈoʊvə] закінчувати(ся)  
**rather** [ˈræðə] досить, дещо  
**subject** [sʌbʤekt] предмет  
**additional** [ə'dɪʃənəl] додатковий  
**spare/free** [spɛrɪ] вільний  
**pass** [pɑːs] проходити; здавати  
**competition** [ˌkɒmpɪ'tɪʃən] конкурс, змагання  
**remedy** [ˈremɪdi] ліки  
**heart** [hɑːt] серце

**care** ( for, of, about ) [keɪə] турбуватися  
**medicine** [ˈmedɪsn] медицина  
**hostel** [ˈhɒstəl] студентський гуртожиток  
**parents** [ˈpɛərənts] батьки  
**therapist (therapist)** [ˈθerəpɪst] терапевт  
**awful** [ˈɔːfʊl] страшний, жахливий  
**class** [klaːs] заняття, урок  
**Chemistry** [ˈkemɪstrɪ] хімія  
**Biology** [ˈbaɪɒlədʒɪ] біологія  
**consider** [kən'sɪdər] вважати  
**knowledge** [ˈnɒlɪdʒ] знання  
**disease** [dɪˈziːz] захворювання  
**health** [helθ] здоров'я  
**deep** [diːp] глибокий  
**particular** [pɑːtɪkjələ] окремий; специфічний

### PHONETICS

**Ex. 1. Practice the spelling of the following sounds:**

[b], [p], [g], [k], [t], [ʃ], [s], [ð], [z], [ʒ], [ʒ], [ʃ], [v], [w], [d], [ŋ], [h], [l], [m], [n], [ŋ], [z], [r].

**Ex. 2. Read the following words:**

[b]: be, born, boy, by	[f]: father, French, family
[p]: parent, person, put, up	[v]: very, voice, five
[d]: doctor, do, hard, deep	[w]: well, with, will
[g]: go, get, against	[ʒ]: gentle, German,
[k]: kind, killer, take	[h]: hospital, hostel, has, he
[t]: tall, teacher, pet	[l]: lady, long, lot, love
[ʃ]: thanks, both, teeth	[m]: medicine, my, moment, must
[s]: study, sister, breakfast	[n]: name, morning, Anatomy
[ð]: this, there, them	[ŋ]: song, long, English
[z]: zink	[z]: usual, pleasure
[ʒ]: short, she, brush	[r]: read, relative, parent
[ʒ]: teach, much	

### GRAMMAR:

**Ex. 3. Familiarize yourself with the data of the following tables:**

#### TO BE

(Active Voice)

#### PRESENT SIMPLE TENSE

(Affirmative Form)

<div style="border: 1px solid black; width: 80px; height: 80px; margin: 0 auto; position: relative;"> <div style="position: absolute; top: 5px; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">I</div> <div style="position: absolute; bottom: 5px; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">am</div> </div>	<div style="border: 1px solid black; width: 80px; height: 80px; margin: 0 auto; position: relative;"> <div style="position: absolute; top: 5px; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">she</div> <div style="position: absolute; bottom: 5px; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">is</div> </div>	<div style="border: 1px solid black; width: 80px; height: 80px; margin: 0 auto; position: relative;"> <div style="position: absolute; top: 5px; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">we</div> <div style="position: absolute; bottom: 5px; left: 50%; transform: translate(-50%, -50%); font-weight: bold;">are</div> </div>
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<b>Are</b> we? they?	<b>Were</b> we? they?	<b>Shall</b> they we
-------------------------	--------------------------	-------------------------

**Ex. 9. Read and translate the following questions:**

1. Is he a medical student? 2. Are they busy? 3. Were you at home some days ago? 4. Will the students be at home at 6 o'clock? 5. Where are you from? 6. What is your mother's name? 7. Where is Mike? 8. How old are you? 9. How old was your father five years ago? 10. What is his job? 11. What is your address?

**Ex. 10. Ask the questions supplying the missing verbs:**

1. What \_ your name (surname)? 2. How old \_ you? 3. What \_ your occupation? 4. What year student \_ you? 5. \_ you Ukrainian? 6. Where \_ you from? 7. \_ your family large (small)? 8. What \_ your father's occupation? 9. How old \_ your father? 10. What kind of person \_ your father? 11. \_ he busy (skilled, respectable)?

**Ex. 11. Turn the following sentences into interrogative:**

**A. (General Questions)**

1. Mike is a medical student. 2. They were in the cinema yesterday. 3. He was in Paris last month. 4. She is twenty years old. 5. This dictionary is old.

**B. (Special Questions)**

1. My fellow-student is twenty (How old). 2. They are at the Academy (Where). 3. Simon will be a doctor in six years (When). 4. They were at the party last night (Where). 5. My mother is very young (Who).

**Ex. 12. Translate the following sentences into English.**

1. Чи ваша родина велика? – Так. 2. Чи ваш батько робітник? – Ні, мій батько інженер. Він працює на заводі. 3. Чи Ви лікар? – Ні. 4. Ти студент чи учень? – Я – студент. 5. Чи Ви студент першого курсу? – Так. 6. Чи Ви одружений? – Я неодружений. 7. Чи ваш батько службовець? – Ні, мій батько робітник. 8. Чи Ви українець? – Так.

**Ex. 13. Familiarize yourself with the data of the following table:**

**TO BE  
(Negative Form)**

Present	Past	Future
I <b>am not</b>	I	I <b>shall not be</b>
He } <b>is not</b>	He } <b>was not</b>	He } <b>will not be</b>
She } <b>is not</b>	She } <b>was not</b>	She } <b>will not be</b>
It } <b>is not</b>	It } <b>was not</b>	It } <b>will not be</b>
You } <b>are not</b>	You } <b>were not</b>	You } <b>will not be</b>
We } <b>are not</b>	We } <b>were not</b>	They } <b>will not be</b>
They } <b>are not</b>	They } <b>were not</b>	We <b>shall not be</b>

**Ex. 14. Turn the sentences of the 4<sup>th</sup> exercise into negative form.**

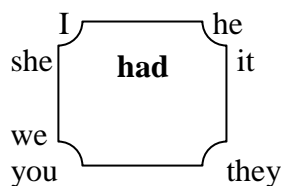
**Ex. 15. Familiarize yourself with the data of the following table:**

**TO HAVE  
(Affirmative Form, Active Voice)**

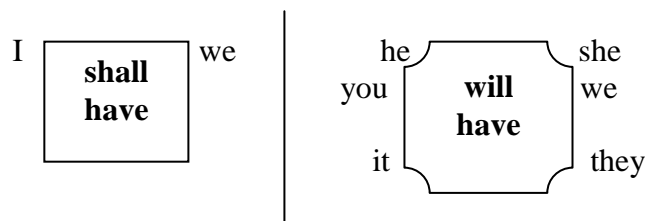
**PRESENT SIMPLE TENSE**

I	<input type="text"/>	we	he	<input type="text"/>	she
	have			has	

**you                      they                      it**  
**PAST SIMPLE TENSE**



**FUTURE SIMPLE TENSE**



**Ex. 16. Read and translate the following sentences:**

1. This country has a small population. 2. She has got a CD player. 3. We had a computer. 4. My fellow-student will have many subjects. 5. They have practical classes in Biology, Anatomy, and Physics. 6. These students had some lectures last week.

**NOTE:**

"**Have got**" means the same as "**have**" to talk about possession. "Have got" is often used in spoken English.

**Ex. 17. Insert the missing verbs and translate the sentences into Ukrainian:**

1. He \_ a Walkman. 2. This country \_ a warm climate. 3. My friends \_ a nice party last Sunday. 4. My father \_ a mobile phone when he was forty. 5. They \_ a lot of problems next week.

**Ex. 18. Translate the following sentences into English:**

1. У Петра і Ганни двоє дітей. 2. У мене є хороший план. 3. У нього було багато друзів. 4. У моїй книжці буде чотири розділи. 5. У нього буде важкий день. 6. У нас багато вільного часу.

**Ex. 19. Familiarize yourself with the data of the following table:**

**PRONOUN**

<b>Personal Pronouns</b> (Особисті займенники)		<b>Possessive Pronouns</b> (Присвійні займенники)	
Nominative (Subjective) Case	Objective Case	Conjoint Form (with noun)	Absolute Form (without noun)
хто? що?	кого? чого? кому? чому?	чий? чия? чіє? чії?	
I	me	my	mine
he	him	his	his
she	her	her	hers
it	it	its	its
you	you	your	yours
we	us	our	ours
they	them	their	theirs

**MODEL:**

I read her an interesting book.  
He reads an interesting book to her.  
It is your book.  
This book is yours.

**Ex. 20. Fill in the blanks with personal pronouns:**

1. \_ am a first-year student at the Polytechnic Institute. 2. My family is not very large, \_ consists of 3 persons. 3. My mother is a doctor. \_ works in the hospital. 4. My father is an operator of the electronic computers. \_ works at the plant. 5. My friends study at the University. \_ are in their third year. 6. Have \_ got any relatives? 7. My aunt has two sons. \_ are twins.

**Ex. 21. Put personal pronouns in brackets in the objective case:**

1. My friend sends (I) a lot of messages. 2. His brother knows (she) well. 3. I often see (they) in the park. 4. Don't ask (he) about his wife. 5. Do you know Italian? – No, I don't know (it) at all. 6. Sometimes we meet (she) at the Browns. 7. Our mother greets (we) every morning. 8. Your son studies together with (she), doesn't he?

**Ex. 22. Insert possessive pronouns:**

1. We have \_ English classes twice a week. 2. She likes \_ new dress very much. 3. Paul keeps \_ books in the book-case. 4. I usually go to see \_ friends in the evening. 5. They often take \_ children to this park. 6. Do you help \_ parents? 7. The film is very interesting but I don't remember \_ title. 8. Mary is an accountant. She does \_ work well. 9. Mr. Wilson is in \_ office now. 10. Peter and Ann teach \_ children music.

**Ex. 23. Use the absolute form of possessive pronouns instead of the conjoint in the following word-combinations according to the model:****MODEL:**

*This is her advice. – This advice is hers.*

1. This is my friend. 2. We like his jokes. Her jokes are not so interesting as\_. 3. She likes their hostel. Her hostel is not so comfortable as\_. 4. Their knowledge is deep. My knowledge is not so deep as\_.

**READING AND DEVELOPING SPEAKING SKILLS****Ex. 24. Read VOCABULARY and memorize new words.****Ex. 25. Insert the missing letters:**

Skilled; medicine; consist of; subject; therapist; Anatomy; Biology; Chemistry, health; remedy; disease; knowledge.

**Ex. 26. Translate the following word-combinations into Ukrainian:**

To work as a therapist, hostel, full-time job, bad painter, skilled doctor, deep knowledge, particular field of medicine, prominent scientist, protection of the health, it consists of, to make abstracts.

**Ex. 27. Read the following words and word-combinations:**

First-year student; care for medicine; because; academy; healthy; science; German; designer; therapist; hostel; pass; whole; Physics; Biology; competition; classes; physical; disease; listen to; fellow-students; rather; awful; practical; Histology; Chemistry; lecturer; attentively; laboratory; knowledge; literature; come; often.

**Ex. 28. Read the following text:**



## I AM A MEDICAL STUDENT



*We study Anatomy*

My name is **Alexander Smirnov**. I am from **Ukraine**. I am **17** years old. I was born on the **17<sup>th</sup> of September in Kyiv**, a capital of Ukraine. Now I am a **first-year** student of the Higher State Educational Establishment of Ukraine "Ukrainian Medical Stomatological Academy".

I was working hard during the whole year having extra lessons in Physics, Biology, and Ukrainian because the competition was very high, and it was difficult to win it.

So, I care for medicine and I am going to be a doctor. Medical students must remember that it is not easy to be a good specialist. A good doctor must have not only deep knowledge of a particular field of medicine. He must love people and have a kind heart. One of the prominent therapists professor Konchalovsky considers that a person may be a poor writer, he may be a bad painter or an actor but a person cannot and must not be a bad doctor.

As for my family it is neither big nor small. There are **five** persons in it. I have my father, mother, **brother, and sister**. My father's name is **Ivan Petrovich**. He is **42** years old. He is a **stomatologist**. He has a full-time job. My mother's name is **Olga Ivanivna**. She is a skilled **doctor**. She has a good reputation in the **hospital**. My brother's name is **Oleg**. He is **13** years old. **He** is doing very well at school. He studies French and German there. My elder sister **Helen** is 25 years old. She is a **designer** by profession. She is married. She has a husband and a son.

I **don't** live with my family at this moment. I live in a **students' hostel**. Now **my relatives live not far from Odesa**. They have a flat of their own in a block of flats. I miss my parents because I love them very much.

My working day begins early because the classes start at half past 8. So, I get up at 7 o'clock. First of all I make my bed, do my morning exercises and go to the bathroom where I brush my teeth and wash. As I am a medical student I consider that physical exercises are "a good remedy" for the protection of my health against diseases. At about half past 7 I have breakfast, which usually consists of a cup of coffee or tea and a sandwich. During breakfast I listen to the news or music on the radio. I live not far from the academy. It takes me about 15 minutes to get there. I go on foot. My fellow-students who live rather far must take a bus, or trolley bus. City traffic is awful in the morning!

As a rule we have several practical classes and a lecture. We study many subjects, such as Anatomy, Histology, Chemistry, Physics, Biology, History of Medicine, Latin, and English.

Our studies are rather difficult. The most difficult subject for me is Anatomy, but I work hard on it.

When the classes are over I go home (to the hostel). I have dinner and rest a little. Then I read textbooks and additional medical literature, make abstracts, and do some exercises. When I have spare time I watch TV, listen to the music or visit my friends or they come to visit me. I have a lot of friends and we often spend free time together, especially on Sundays.

At 11 o'clock I go to bed. As I work hard I do sleep well.

**Ex. 29. Translate the text "I am a Medical Student" into Ukrainian.**

**Ex. 30. Answer the following questions:**

1. How old are you? 2. What would you like to be? 3. Where are you from? 4. When and where were you born? 5. How many persons are there in your family? 6. What is your mother's name? 7. What is your father's name? 8. How old is your father? 9. What is your mother's occupation? 10. What is your father doing for living? 11. Do you have brothers or sisters? 12. How old are your sisters and brothers? 13. How many children does your sister/brother have? 14. When does your working day begin? 15. What do you do in the morning? 16. When do you leave your home? 17. How many classes do you have every day? 18. What subjects do you study? 19. What do you do after classes? 20. When do you go to bed?

**Ex. 31. Insert the missing words:**

My working day begins \_ 7 o'clock. I \_ my bed and go to the \_ where I brush my teeth and wash. At half past 7 I \_ breakfast. Then I \_ home and go to the Academy. We have several practical \_ and a lecture every day. We study many subjects, such as \_, Histology, Chemistry, \_, Biology, \_, Latin, and English. Our studies are \_ . When the classes are \_ I go home. I \_ text-books, make abstracts and do some \_ . When I have free \_ I watch TV or listen \_ the music. At 11 o'clock I \_ to bed.

**Ex. 32. Translate into English:**

1. Прізвище цього лікаря – Сидоренко. Йому 35 років. Він – лікар обласної лікарні. 2. Ганна Павленко – професор. Їй близько 40 років. Вона – відомий терапевт. 3. Цей англієць – містер Браун. Він – досвідчений фахівець. 4. Олені 25 років. Вона заміжня. Олена – кваліфікований і енергійний фахівець. 5. Мій робочий день розпочинається о 6 ранку. 6. Я прокидаюся, умиваюся, снідаю та йду до академії. 7. Наші заняття розпочинаються о 8.30. 8. У мене щодня дві лекції і одне практичне заняття. 9. Ми вивчаємо анатомію, фізіологію, біологію, гістологію та інші предмети. 10. На лекціях я уважно слухаю лектора і конспектую новий матеріал. 11. Найскладніший предмет для мене – анатомія, але я багато над ним працюю. 12. Мені потрібні глибокі знання з багатьох спеціальних предметів. Це дуже важливо для моєї майбутньої роботи. 13. Після занять я йду додому та трохи відпочиваю. 14. Увечері я готуюся до практичних занять і читаю матеріал, необхідний для майбутньої лекції.

**Ex. 33. Fill out the form:**

**Personal Information Sheet**

		Date _____
Name _____	_____	_____
Permanent Address _____	_____	_____
Tel. N: Home: _____	Business: _____	
U.S. Citizen: _____	yes _____	no _____
If no, nationality _____	_____	_____
Date of birth _____	month _____ day _____	year _____
Place of Birth _____	_____	
Occupation _____	_____	
Place of Employment _____	_____	_____
Sex: _____	M _____	F _____
Marital Status: _____	Married _____	Single _____

**Ex. 34:**

- 1. Tell your fellow-students about yourself.**
- 2. Describe your family to your new friend.**
- 3. Show a friend your family album and answer all his/her questions.**

**Ex. 35. Read the following words and word-combinations. Memorize them.**

**scarlet fever** [ˈskɑːlɪt ˈfiːvə] / скарлатина

**measles** [ˈmɜːzls] / кір

**chickenpox** [ˈtʃɪkənˌpɒks] / вітряна віспа

**rubella** [ruːˈbɛlə] / краснуха

**whooping cough** [ˈhuːpɪŋˌkɔːf] / кашлюк

**mumps** [mʌmps] / інфекційний паротит

**tuberculosis** [tjuː(ː)ˈbʊkjuːˈlʊsɪs] / туберкульоз

**syphilis** [ˈsɪfɪlɪs] / сифіліс

**cancer** [ˈkænsə] / рак

**complaint** [kəmˈpleɪnt] / скарга

**diabetes mellitus** [ˈdaɪəˌbiːtɪz ˈmeɪʃtɪs] / цукровий діабет

**kidney disorder** [ˈkɪdnɪˌdɪzədɔː] / захворювання нирок

**heart disease** [ˈhɜːt dɪzɪz] / захворювання серця

**bronchial asthma** [ˈbrɒŋkiəl ˈæstmə] / бронхіальна астма

**epilepsy** [ˈepɪlepsi] / епілепсія

**hypertension** [ˈhaɪpəˌtenʃ(ə)n] / гіпертонія

**drug** [drʌɡ] / ліки, лікарський засіб; наркотичний засіб

**Ex. 36. Read and translate the following questions into Ukrainian:**

What is your full name?

How old are you?

Are you single or married?

What is your education?

Are you on a pension?

Are you on a pension because of your age or your health?

Your home address, please.

What is your date of birth?

What is your place of birth?

Your home (business) telephone number?

What are your complaints?

Did you have scarlet fever (measles, chickenpox, rubella, whooping cough, mumps)?

Are you allergic to any drugs?

Do you have narcotic habit (Чи у Вас є пристрасть до наркотиків?) (an excessive drinking habit)?

What are the sanitary conditions at your work?

What are your home sanitary conditions?

Do you have children? How many?

Are your children well?

Are your parents living or dead?

Is anyone in your family serious ill?

Is there any history of tuberculosis (syphilis, cancer, diabetes mellitus, kidney disorders, heart diseases, bronchial asthma, epilepsy, hypertension, alcoholism) in your family?

**Ex. 37. Complete the questions to your imaginary patient and give the answers:**

What \_ your home address?

What is your \_ of birth?

How old \_ you?

\_ you single or married?

What \_ your complaints?

Did \_ have scarlet fever (measles, chickenpox, rubella, whooping cough, mumps)?

Are you allergic \_ any drugs?

Do you have narcotic \_ ?

What are the sanitary conditions at your \_ ?

Are your parents living or \_ ?

Is anyone in your \_ serious ill?

Is there any history of \_ ?

**Ex. 38. You want to get some information about your patient. Ask him/her questions using the expressions of 36<sup>th</sup> exercise.**

### OVERVIEW

My name is Alexander Smirnov. I am from Ukraine. I am 17 years old. I am a first-year student of the Higher State Educational Establishment of Ukraine "Ukrainian Medical Stomatological Academy". As for my family it is neither big nor small. I have my father, mother, brother, and sister. My father's name is Ivan Petrovych. He is 42 years old. He is a stomatologist. My mother's name is Olga Ivanovna. She is a skilled doctor. My brother's name is Oleg. He is 13 years old. He is a schoolboy. My elder sister Helen is 25 years old. She is a designer. My working day begins early. I get up at 7 o'clock. At about 8 o'clock I leave home and go to the Academy. As a rule we have several practical classes and a lecture. We study many subjects, such as Anatomy, Histology, Chemistry, Physics, Biology, History of Medicine, Latin, and English. During the lectures we make notes of new and interesting facts and listen to the lecture attentively. When the classes are over I go home (to the hostel). I have dinner and rest a little. Then I read textbooks, make abstracts and do some exercises. At 11 o'clock I go to bed.

### LESSON 2 MEDICAL UNIVERSITY

#### VOCABULARY

**chair** [ˈtʃeɪr] кафедра  
**train** [treɪn] готувати  
**physician** [fɪzɪʃən] лікар  
**surgeon** [ˈsɜːdʒən] хірург  
**pediatrician** [ˈpɛdɪətrɪʃən] педіатр  
**therapist** [ˈθerəpɪst] терапевт  
**gynaecologist** [ˈɡaɪnəkɒlədʒɪst] гінеколог  
**stomatologist** [stəˈmɒlədʒɪst] стоматолог  
**senior** [ˈsiːniə] старший  
**acquire** [əˈkwaɪə] набувати  
**Therapy** [ˈθerəpi] терапія  
**Surgery** [ˈsɜːdʒəri] хірургія  
**Obstetrics** [ˈɒbstetrɪks] акушерство  
**faculty** [ˈfækəlti] факультет

**practical skills** [ˈpræktɪkəl skɪlz] практичні навички  
**diagnosis** [ˈdaɪəɡnəʊsɪs] діагноз  
**prescribe** [prɪˈskrɪb] призначати  
**proper** [ˈprɒpə] належний, необхідний  
**treat** [tri:t] лікувати  
**treatment** [ˈtri:tmənt] лікування  
**fill in** [fɪlɪn] заповнювати  
**successfully** [səkˈsɛsfəlɪ] вдало  
**qualified** [ˈkwɒlɪfaɪd] кваліфікований  
**scientist** [ˈsaɪəntɪst] учений  
**last (take)** [lɑːst] тривати  
**patient** [ˈpeɪʃənt] пацієнт  
**examine** [ɪɡˈzæmɪn] оглядати

#### PHONETICS

**Ex. 1. Practice the spelling of the following sounds:**

[q], [w], [e], [ɔ], [ʒ], [ʒ], [a], [ʃ], [u], [f], [ʒ], [ʒ], [e], [o], [l], [ju], [eʃ], [aʃ], [ʃq], [uq], [jʃ].

**Ex. 2. How do you spell your name. Practice the spelling your name in pairs.**

**MODEL:** Debbie: [dɛɪbi], [ɛɪbi], double [bɛɪbi], [aɪbi], [ɛɪbi].

#### GRAMMAR:

#### WORD ORDER IN A STATEMENT

**Ex. 3. Familiarize yourself with the data of the following table:**

Modifier (When, Where)	Subject (What, Who)	Predicate	Direct Object (What)	Prepositional Object (To whom)	Modifier of Place (Where)	Modifier of Time (When)
	I	have	three classes		at the University	on

						Monday.
	Student	gave	his notes	to his friend.		
	We	answer	the questions		at the lessons	every day.
Last year	our faculty	trained	200 students.			
In Kyiv	many surgeons	work			at the regional hospital.	

**Ex. 4. Make up sentences using the following words and word-combinations:**

1. are / seriously ill / her parents. 2. at / 5 o'clock / has dinner / Nick. 3. lasts / doctors' training / six / years. 4. 3.000 students / at our Academy / study. 5. is over / the academic year / in June. 6. students / during the first year / pre-clinical subjects / study.

**Ex. 5. Familiarize yourself with the data of the following table:**

**ARTICLE**

<b>a (an)</b>	is used only with countable nouns in the singular; is used before a noun when we name the object referring it to a class objects having this name; is used when a person or thing unknown to the hearer or reader; is mentioned for the first time.
<b>the</b>	is used with nouns both in the singular and in the plural; is used with a noun if it is clear from the context or situation what particular object meant; is used before the names of oceans, seas, rivers, mountain chains, and compound names of countries: <i>the Atlantic Ocean, the Black Sea, the Mississippi, the Rocky Mountains, the United States of America.</i>
<b>zero article</b>	is used in a number of set expressions: <i>at night (уночі), by train (поїздом), to go home (їти додому)</i> ; is used with nouns preceded by possessive, demonstrative or interrogative pronouns: <i>your sister, this lesson, some doctors, each student, What story?</i> ; is used with the names of persons and animals: <i>Tom Brown.</i> (But the definite article is used with the name in the plural which denotes the whole family: <i>We'll invite the Browns</i> ); is mostly used with the names of countries, cities, streets, squares, and parks: <i>Poland, Paris, Oxford Street, Trafalgar Square, Hyde Park.</i>

**Ex. 6. Complete the sentences with articles if it is necessary:**

1. I am \_ medical student. 2. They are from different countries: \_ Germany, \_ Italy, \_ USA, \_ Ukraine, and \_ Japan. 3. Marry goes \_ home after classes. 4. He was born in \_ Paris but now he lives in \_ London. 5. Our group consists of \_ some students. 6. London is \_ city. 7. M.V. Gogol is \_ outstanding Ukrainian writer.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 7. Read VOCABULARY and memorize new words.**

**Ex. 8. Insert the missing letters and translate the words:**

Pediatr\_i\_ian; acqu\_re; fac\_lty; p\_ss; pres\_ribe; physi\_ian; di\_gnosis; dis\_ase; prepa\_e; tre\_tment; gyna\_cologist; therape\_tist; l\_st.

**Ex. 9. Translate the following word-combinations and sentences into Ukrainian:**

1. **to consist of** – складатися з; academic year consists of two terms; this organ consists of some parts.
2. **to examine** – оглядати; to examine the heart; examination; close examination of the patient; X-ray examination; Let me examine you; I'll examine you.
3. **health** – здоров'я; to be in good health; to be in poor health; health protection; Our country pays great attention to the health protection.
4. **to fill in** – заповнювати; вписувати, вносити; to fill in a temperature chart; The physician fills in the patient's card.
5. **knowledge** – знання; to have good knowledge of medicine; The student's task is to have deep knowledge in Anatomy; He must give all his knowledge to the protection of people's health.

**Ex. 10. Read the following words:**

Medicine, speciality, surgeon, pediatrician, therapist, prepare, last, Chemistry, Biology, Histology, subject, senior, acquire, treatment, disease, term, successfully, pass, qualified, outstanding, scientist, technician, Ophthalmology.

**Ex. 11. Read and translate the following text:**

**UKRAINIAN MEDICAL STOMATOLOGICAL ACADEMY**

I am a student of the Higher State Educational Establishment of Ukraine "Ukrainian Medical Stomatological Academy". Our Academy is situated in the center of our city. About 3.000 students study at the Academy. There are some faculties at our Academy: medical, stomatological, nursing, dental technician, grounding and post-graduate education. Medical faculty trains doctors of different specialities: family doctors, surgeons, pediatricians, therapists, gynaecologists and others. Stomatological faculty prepares stomatologists of different specialities. Doctors' training takes six years and stomatologists' training lasts five years.

During the first two years the students study Physics, Chemistry, Anatomy, Biology, Histology, History of Medicine, Latin, foreign languages and other pre-clinical subjects. Senior students study Therapy, Surgery, Obstetrics, Gynaecology, Ophthalmology, Dentistry and others. To make good progress in these and other subjects, medical students must work hard on them.

During the lectures we make notes of new and interesting facts and listen to the lecturer attentively. Sometimes we work in a laboratory. We know that we shall need deep knowledge in many subjects in our future work.

Our classes last till 4.50 p.m. A lesson lasts 90 minutes with a 5-minute break and 40-minute interval between lessons.

We have practical training at hospitals and polyclinics. Senior students acquire such practical skills, as to examine patients, to make a diagnosis, to prescribe proper treatment, and to fill in case histories.

The academic year starts in September and is over in June. It consists of two terms.

Our teachers are very qualified. Several outstanding scientists work at our Academy. Their research works are well known in our country and abroad.

**Ex. 12. Translate the following words and word-combinations into English:**

Факультет; різні спеціальності; хірург; терапевт; стоматолог; підготовка лікарів; доклінічні предмети; готувати; тривати; практика; починати(ся); закінчувати(ся); навчальний рік; семестр; набувати; практичний навик; оглядати пацієнтів; встановлювати діагноз; призначати необхідне лікування; заповнювати історії хвороби; лікувати; наукова робота.

**Ex. 13. Answer the following questions:**

1. Where do you study? 2. What year student are you? 3. How many students study at your Academy? 4. What faculties are there at the Academy? 5. What specialists does the medical faculty train? 6. What specialists does the stomatological faculty prepare? 7. How long does the training take at your Academy? 8. What subjects do you study? 9. How often do you take your credit tests? 10. How many terms does the academic year have? 11. What practical skills do the senior students acquire?

**Ex. 14. Translate the words given in brackets into English:**

1. Our Academy is situated (у центрі) of Poltava. 2. Stomatologists' training (триває) five years. 3. (Навчальний рік) begins in September. 4. The academic year (закінчується) in June. 5. We have credit tests (в кінці кожного семестру). 6. Several (видатних учених) work at our Academy.

**Ex. 15. Insert the necessary words or word-combinations:**

1. About 3.000 students \_ at the Academy. 2. There are some \_ at our Medical Institute, they are: medical, stomatological, nursing, dental technician, grounding and post-graduate education. 3. Medical faculty \_ doctors of different specialities, such as: \_ . 4. Stomatological faculty \_ stomatologists. 5. Doctors' \_ takes six years. 6. Stomatologists' training \_ five years. 7. During the first two years medical students study \_ . 8. Senior students study \_ . 9. We have \_ at the hospitals, clinics, and polyclinics. 10. Senior students \_ practical skills, as to examine patients, to make a diagnosis, and to prescribe proper treatment. 11. The academic year \_ two terms. 12. Several \_ scientists work at our University.

**Ex. 16. Translate the following sentences into English:**

1. Медичний факультет готує терапевтів, хірургів, гінекологів, офтальмологів та інших фахівців. 2. Підготовка лікарів триває шість років. 3. Стоматологічний факультет готує стоматологів. 4. Підготовка стоматологів триває п'ять років. 5. Студенти-медики проходять практику в лікарнях і поліклініках нашого міста. 6. Студенти-старшокурсники вчаться оглядати хворих, ставити діагноз і призначати лікування. 7. Навчальний рік складається з двох семестрів. Перший починається у вересні, а другий – в лютому.

**Ex. 17. Insert the necessary words:**

1. Why did you \_ medicine as your speciality? 2. How many students \_ at the Academy? 3. What faculty do you \_ at? 4. What \_ does your friend study at? 5. What specialists does the stomatological faculty \_? 6. What specialists does the medical faculty \_? 7. How many years does the doctors' training \_?

**Ex. 18. Read the following dialogue and try to reproduce it:**

1. Do you study or work?	1. I study.
2. Where do you study?	2. I study at the Ukrainian Medical Stomatological Academy.
3. Why did you choose medicine as your speciality?	3. I want to become a doctor. I'd like to take care about people, to treat them, and to help them to be healthy.
4. How many students study at your Academy?	4. About 3,000 students study at the Academy.
5. What faculties are there at your Academy?	5. There are some faculties at our Academy: medical, stomatological, nursing, dental technician, grounding and post-graduate education.
6. What faculty do you study at?	6. I study at the medical faculty.

7. What specialists does the medical faculty train?	7. Medical faculty trains therapists, surgeons, gynaecologists, pediatricians, ophthalmologists, ear, throat and nose specialists and others.
8. What specialists does the stomatological faculty prepare?	8. The stomatological faculty prepares stomatologists of different specialities.
9. How long does the training take at your Academy?	9. Doctors' training takes six years and stomatologists' training lasts five years.
10. What subjects do the medical students study?	10. During the first two years the students study preclinical subjects, as Anatomy, Biology, Chemistry, Physics, Histology, Latin and others. Senior students study such clinical subjects, as Therapy, Surgery, Gynaecology, Obstetrics, Ophthalmology, Dentistry and some others.
11. Do the medical students have their practical training?	11. Yes, they do. The medical students have their practical training at various hospitals and polyclinics.
12. What practical skills do the senior students acquire?	12. Senior students acquire such practical skills, as to examine patients, to make a diagnosis, to prescribe proper treatment, and to fill in case histories.
13. How often do you take your credit tests?	13. We take our credit tests some times a year.
14. How many terms do you have in the academic year?	14. We have two terms in the academic year.
15. When does the academic year start and when is it over?	15. The academic year starts in September and is over in June.
16. What can you say about the teaching staff of the Academy?	16. Our teachers are very qualified. Several outstanding scientists work at our Academy. Their research works are well known in our country and abroad.

**Ex. 19. There are some of the subjects taught at Medical University. Write down disciplines you learn:**

Anatomy, Chemistry, Physics, Neurology, Pathology, Therapy, Latin, Surgery, Oncology, Histology, Economics, Biology, Urology, Physiology, Pathologic Physiology, Ophthalmology.

**Ex. 20. Read and retell the following text:**

#### **MEDICAL UNIVERSITY**

Our Medical University is one of the oldest Ukrainian medical schools, and one of the most prominent and respectful in the country and abroad. At present University is a very prestigious establishment, which provides the best medical education.



The University has been a leader in developing medical science and medical education. Today, at the beginning of the third millennium, the University is a large medical scientific, research and educational center, noted for its extensive clinical and laboratory base and a brilliant teaching staff. This staff has unique pedagogical experience in training students and postgraduates from all over the world and is always happy to pass on their knowledge and experience.

The University has broad international contacts in the field of education, medical science, health care, and economic activities. The diplomas of our University are recognized in many countries all over the world.

Annually about 4,000 students from Ukraine and foreign countries study at the University. There are three major faculties at University: medical faculty, pediatric faculty, and bio-medical faculty.

The plan of annual admission of first-year students is regularly fulfilled. The University offers the preparatory courses for foreign students where they study Ukrainian, Biology, Chemistry, and Physics.

After graduation from the University over 1.000 students are annually trained at the internship, clinical studies and take the postgraduate course.

The University students, postgraduates and interns, working for their academic degrees, are trained and get specialization, improve their knowledge and skills, carry out their theses at 74 chairs, 22 scientific-research laboratories of Medical University. The University has large library with more than 40,000 volumes in Ukrainian and foreign languages.

The University has very close link with the practical medicine. The bases of University are 32 specialized clinics, hospitals and other preventive and medical institutions for more than 9,000 beds, where the future doctors get extensive probation under the supervision of the most experienced tutors.

Many prominent scientists of Ukraine are working at the Medical Faculty of the University.

The glorious past of the University, deep pedagogical and scientific traditions, the importance of medical science and practice, and a wide range of qualified specialists, trained in the University, assure a leading role of our University.

Today Medical University is a complex of buildings designed for practical classes, lectures, laboratory studies, research work, and auxiliary services. All of the out-of-town students have been accommodated at the hostels. Students get medical assistance at a polyclinic staffed by doctors in all fields of medicine. Although studies are the most important in the students' life, attention is also paid to sport and entertainment. The University has sport complex, where students can attend sections of tennis, volleyball, etc.

## OVERVIEW

I am a student of the Higher State Educational Establishment of Ukraine "Ukrainian Medical Stomatological Academy". There are some faculties at our Academy: medical, stomatological, nursing, dental technician and others. Medical faculty trains doctors of different specialities: family doctors, surgeons, pediatricians, therapists, gynaecologists and others. Stomatological faculty prepares stomatologists of different specialities. Doctors' training takes six years and stomatologists' training lasts five years. During the first two years the students study Physics, Chemistry, Anatomy, Biology, Histology, History of Medicine, Latin, foreign languages, and other pre-clinical subjects. Senior students study Therapy, Surgery, Obstetrics, Gynaecology, Ophthalmology and others. They acquire such practical skills, as to examine patients, to make a diagnosis, to prescribe proper treatment, and to fill in case histories.

## LESSON 3

### MEDICAL EDUCATION IN UKRAINE

#### VOCABULARY

**care** [/'kɛrə/] турбота, піклування

**graduation from** [/'grædʒu'eɪʃən/] закінчення

**degree** [dɪ'grɪ:/:] ступінь

**approve** [ə'pru:v/] затверджувати

**pharmacist** [*'fɑ:mqsɪst*] фармацевт  
**advanced** [*əd'vɑ:nst*] встигаючий  
**pharmaceutical** [*fɑ:mə'sju:tɪkəl*] фармацевтичний  
**engage** [*ɪn'geɪʒ*] залучати  
**curriculum** [*kʁ'rɪkjʉlqm*] навчальний план  
**defend** [*dɪ'fend*] захищати  
**thesis** [*'θɪ:sɪs*] дисертація  
**syllabus** [*'sɪləbʉs*] програма

**candidate of science** [*'kændɪdət qv'saɪəns*] кандидат наук  
**include** [*ɪn'klu:d*] включати; містити  
**training course** [*'treɪnɪŋ kɔ:s*] курс підготовки  
**chemist's (shop)** [*'kemɪsts 'ʃɔ:p*] аптека  
**intern** [*'ɪntq:n*] інтерн  
**obtain** [*əb'teɪn*] отримувати

### RULES OF READING VOWELS (ГОЛОСКИ)

Тип читання	a	o	e	i	y	u
<b>Закритий склад</b>	fact [æ]	on [ɔ]	leg [e]	till [ɪ]	lymph [ɪ]	bus [ʉ]
<b>Відкритий склад</b>	take [eɪ] but: have [hæv]	hope [əʉ]	he [i:]	pipe [aɪ]	my [aɪ] but: body [bɔ:di]	tube [ju:]
<b>Голосна перед r</b>	arm [ɑ:]	cord [ɔ:]	her [ɛ:]	first [ɜ:]	byrd [ɜ:]	turn [ɜ:]
<b>Голосна перед re</b>	care [fɛ]	more [ɔ:]	here [ɛ]	fire [aɪ]	lyre [aɪ]	cure [ju]

**Ex. 1. Read the following words:**

Faculty; examine; student; academy; city; subject; fact; lesson; prescribe; fill; case; start; consist; term; several; different; study; prepare; take; carry; very; respectful; university; medical; establishment; provide.

### WORD-BUILDING

**Ex. 2. Familiarize yourself with the following material:**

**Suffixes of Noun:**

- ist (specialist)
- logy (study of)

**Ex. 3. Read and translate the following words:**

- A.** Physiologist; nephrologist; therapist; scientist; dentist; stomatologist; neurologist; oncologist.  
**B.** Biology; microbiology; physiology; oncology; immunology; psychology; radiology; reanimatology; pathology.

### GRAMMAR:

**Ex. 4. Familiarize yourself with the data of the following table:**

#### NUMBER OF NOUNS

leg	legs
disease	diseases
dress	dresses
research	researches
box	boxes
remedy	remedies
day	days
life	lives
tooth	teeth

foot atrium	feet atria
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**Ex. 5. Form plural from the following nouns:**

**A.** Subject, remedy, heart, parent, class, disease, chair, physician, skill, scientist, faculty, service, leaf, syllabus, pass, intern, nurse.

**B.** Sanatorium, woman, child, nucleus, alveolus, vertebra.

**GRAMMAR:**

**Ex. 6. Familiarize yourself with the data of the following table:**

**CONSTRUCTION “THERE + TO BE”  
(Affirmative Form)**

Present Simple	Past Simple	Future Simple
There is (Singular) There are (Plural)	There was (Singular) There were (Plural)	There will be (Singular, Plural)

**Ex. 7. Read the following examples:**

- There is** a surgical department in this hospital.  
В цій лікарні знаходиться хірургічне відділення.
- There are** some departments in the regional hospital.  
В обласній лікарні декілька відділень.
- There was** a stomatological faculty at our University.  
У нашому університеті був стоматологічний факультет.
- There were** some students at the lecture yesterday.  
Вчора на лекції було декілька студентів.
- There will be** a new hospital in our city.  
В нашому місті буде нова лікарня.

**Ex. 8. Translate the following sentences into Ukrainian:**

- There are 320 patients in this clinic.
- There were 17 faculties at Oxford University in 1967.
- There will be many friends in my party.
- There were several practical classes at our Institute last week.
- There is a nurse in the therapeutic department.
- There was an old clinic in our city.
- There are some faculties at the Medical Academy.

**Ex. 9. Put the following sentences into Past and Future Simple Tenses:**

- There is a medical faculty at our Academy.
- There are many clinical chairs at the University.
- There are many qualified teachers at our Medical University.
- There are several outstanding scientists at our hospital.
- There are many medical colleges in our country.
- There is a very interesting museum in our village.
- In this residential district there are a lot of parks.

**Ex. 10. Translate the following sentences into English:**

- У нашій лікарні декілька відділень.
- У цьому університеті – дві бібліотеки.
- У національному університеті близько 25 факультетів.
- У читальному залі було декілька студентів.
- У районній поліклініці буде багато пацієнтів.
- Вчора в цьому залі були збори.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 11. Read VOCABULARY and memorize new words.**

**Ex. 12. Compose 3-4 your own sentences using the words of the VOCABULARY.**

**Ex. 13. Insert the missing letters and translate the words and word-combinations:**

Syllab\_s; appr\_ve; s\_ience; gradua\_ion; pharma\_ist; en\_age; curricu\_um; d\_gree; tr\_ining; co\_rse; in\_lude; int\_rn; obt\_in; c\_emist's shop.

**Ex. 14. Translate the following word-combinations and sentences into Ukrainian:**

1. **to become**; He became interested in Therapy; She became pale; This method became a new one.
2. **disease**; to treat different diseases; to fight against diseases; disease of the heart; the symptoms of the disease; the reaction of the body to the disease; a dangerous disease, a prolonged disease; The disease is the natural process.
3. **institution**; medical institution; educational institution; state institutions.

**Ex. 15. Read the following words and word-combinations:**

Task; health; reason; personnel; important; Pharmaceutical Institute; pharmacist; last; curriculum; syllabus; approve; course; laboratory; practice; so-called; Chemistry; Anatomy; Biology; senior; Therapy; Surgery; Obstetrics; Gynaecology; acquire; sanitary epidemiological station; chemist's shop; diagnosis; intern; certain period; advanced specialist; engage; research; defend; thesis; candidate of science.

**Ex. 16. Read the following text and translate it:**

**MEDICAL EDUCATION IN UKRAINE**

The main task of medicine is the care about the people's health. For that reason the training of the medical personnel is very important.

Medical Universities and Academies train future doctors, pharmacists, and stomatologists. Doctors' training takes six years but stomatologists' or pharmacists' training lasts five years. The curriculum and syllabuses for these Universities are approved by the Ministry of Public Health.

The main administrative unit of Medical University is the faculty. As a rule the Medical University or Academy may have one or more faculties (medical, stomatological, pharmaceutical and others), headed by the dean. He/She is responsible for administrative affairs of the faculty.

The training course consists of lectures, practical classes, practical work in laboratories and medical practice at different medical institutions. During the first two years the students of the Medical Universities have so-called pre-clinical training, which includes general subjects, as Physics, Chemistry, Anatomy, Biology and others. In the senior years they study clinical subjects, as Therapy, Surgery, Obstetrics, Gynaecology and others.

The senior students acquire practical skills, working at hospitals, polyclinics, sanitary epidemiological stations, and chemist's shops. They acquire such practical skills, as to examine patients, to make a diagnosis, to prescribe proper treatment, and to fill in case histories. A lot of students participate in scientific societies; their dream is to become research workers in future.

Having passed the state examinations, young doctors begin to work as interns during a certain period.

After graduation from the University they work as different specialists at the medical institutions.

The most advanced specialists are engaged in research. They defend theses and obtain degrees of candidates of science (medicine).

**Ex. 17. Translate the following words and word-combinations into English:**

Затверджувати; турбота, піклування; курс підготовки; тривати; включати; хімія; акушерство; хірургія; кандидат наук; інтерн; аптека.

**Ex. 18. Complete the text with the words in the box:**

The main task of medicine \_ the care about the people's health. Medical Universities \_ future doctors. Doctors' \_ takes six years. The curriculum and \_ for these Universities are approved by the Ministry of Public Health.

The training course \_ lectures, practical work in laboratories, and medical practice at different medical institutions. The medical students \_ Physics, Chemistry, Anatomy, Biology, Therapy, Surgery, Obstetrics, Gynaecology and others.

The \_ students acquire such practical skills as to \_ patients, to make a diagnosis, to \_ proper treatment, and to fill in \_ .

Having passed the state examinations, young doctors \_ to work as interns during a certain period.

syllabuses; prescribe; examine; training; case histories; is; senior; begin; consists of; learn; train.

**Ex. 19. Answer the following questions:**

1. What is the main task of medicine? 2. What Universities train future doctors and pharmacists? 3. How long does the doctors' training take? 4. What does the training course consist of? 5. What kind of training do the students have during the first two years? 6. What subjects do they study during this period? 7. What subjects do the students study during the senior years? 8. Where do young specialists work after graduation? 9. What specialists are engaged in research?

**Ex. 20. Translate the following sentences into English:**

1. Я – студент медичної академії. 2. Курс підготовки триває шість років. 3. Протягом цього часу ми повинні отримати знання з багатьох медичних предметів, включаючи анатомію, фізіологію, медичну біологію, патологічну фізіологію, терапію, хірургію, гінекологію та ін. 4. Працюючи в лікарнях, студенти-медики вчать ся оглядати хворих, встановлювати діагноз, призначати лікування і заповнювати історії хвороби пацієнтів.

**Ex. 21. Complete the following answers:**

1. Where do you study? I study at \_ . 2. How long does your training take? My training \_ . 3. What subjects do you learn during the first two years? I learn \_ . 4. What subjects do the senior medical students learn? They learn \_ . 5. What practical skills will you acquire being the senior student? I'll acquire \_ .

**Ex. 22. Ask and answer the similar questions each other.**

**Ex. 23. Skim through the text "Medical Education in Ukraine" and find sentences expressing its main idea.**

**Ex. 24. Make up a plan of the text "Medical Education in Ukraine".**

**Ex. 25. Tell the group about medical education in Ukraine keeping the following consistency:**

The main task of medicine; Medical and Pharmaceutical Institutes; the course of training; pre-clinical and clinical training; practical skills; research work.

**OVERVIEW**

Medical Universities and Academies train future doctors and pharmacists. Doctors' training takes six years but stomatologists' or pharmacists' training lasts five years. The training course consists of lectures, practical work in laboratories, and medical practice at different medical institutions. During the first two years the students of the Medical Universities have general subjects, as Physics, Chemistry, Anatomy, Biology and others. In the senior years they study clinical subjects, as Therapy, Surgery, Obstetrics, Gynaecology and other subjects. The senior students acquire practical skills, working at hospitals and polyclinics. Having passed all credit tests, young doctors begin to work as interns during a certain period. After graduation from the University they work as different specialists at the medical institutions.

## VOCABULARY

**make the grade** [ˈɡreɪd] досягати успіху  
**come in touch** [tʌtʃ] мати справу  
**supervision** [ˈsjuːpəvɪʒən] керівництво  
**private** [ˈpraɪvət] приватний  
**peculiarity** [pɪˈkjuːlɪəˈrɪti] особливість  
**expensive** [ɪkˈspensɪv] дорогий

**nurse** [nɜːs] медична сестра  
**valuation** [ˈvæljuːeɪʃən] оцінка  
**receive grant** [rɪˈsiːv ˈgrænt] отримати стипендію  
**charge** [tʃɑːdʒ] вимагати  
**bachelor** [ˈbætʃ(ə)lər] бакалавр

## RULES OF READING

Letters	Sounds	Examples	Notes
e	-	make take	в кінці слова не читається
e i y	[ɪ]	darkness cavity happy	ненаголошений склад
a o u or er	[ə]	husband freedom doctor better	ненаголошений склад
o + l, m, n e + l, m, n i + l, m, n	-	lesson open pencil	в ненаголошеному складі часто не читаються

### Ex. 1. Read the following words:

Engage, defend, syllabus, approve, include, obtain, department, five; faculty, anatomy, make, grade, expensive, receive, surgery, specialist, control, number, result, construction, reason, council.

## WORD-BUILDING

### Ex. 2. Familiarize yourself with the following material:

#### Suffix of Adjective:

**-al** (pertaining to)

center *центр* – central *центральний*

profession *професія* – professional *професійний*

### Ex. 3. Read and translate the following words:

Clinical; practical; surgical; internal; medical; final; neurological; physiological; epidemiological; general; local; bacterial, viral, gastrointestinal; experimental; chemical; bronchial; normal; physical; emotional; lacrimal.

## GRAMMAR:

### Ex. 4. Familiarize yourself with the data of the following table:

#### CONSTRUCTION “THERE + TO BE” (Interrogative Form)

<b>Present Simple</b>	Is there Are there	a nurse any doctors	in the department? in your village?
<b>Past Simple</b>	Was there Were there	a large hospital many out-patient departments	in your city? in this clinic?
<b>Future Simple</b>	Will there be	a new polyclinic	in this street?

**NOTE:** In affirmative form “some” is used, in interrogative form “any” is used, in the negative form “no” and “not any” are used: There are **some** hospitals there. Are there **any** hospitals there? There are **no** hospitals there. There are **not any** hospitals there.

**Ex. 5. Read and translate the following questions:**

1. Are there any departments in this hospital? 2. Were there many students at the lecture? 3. Are there any medical schools in your city? 4. Were there any tests last term?

**Ex. 6. Put general and special questions to the following sentences:**

1. There are some well-known surgeons in this department. 2. There were five medical schools in my city. 3. There will be some test units next term. 4. There are many private institutions in the USA.

### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 7. Read VOCABULARY and memorize new words.**

**Ex. 8. Compose your-own sentences using VOCABULARY.**

**Ex. 9. Insert the missing letters and translate the following words:**

N\_rse; val\_ation; re\_eive; gra\_t; priv\_te; peculiar\_ty; \_xpensive; grad\_ation; supervi\_ion.

**Ex. 10. Read the following words and word-combinations:**

Course; candidate; science; Pharmacology; Physiology; Pathologic Physiology; Psychology; come in touch; Anesthesiology; Dermatology; Internal Medicine; Pediatrics; Gynaecology; Obstetrics; supervision; certain field; private practice; valuation; government; syllabuses.

**Ex. 11. Read and translate the following text:**

#### MEDICAL EDUCATION IN THE USA

In the USA Universities and medical colleges train doctors.

The doctors' training takes from 8 to 13 years to become a doctor. The medical students have three or four years of pre-clinical training at the University. During this course students learn the basic subjects. They must have deep knowledge in Anatomy, Biology, Chemistry and others. Medical students may work as nurses after pre-clinical training. Students who have made top grades are chosen candidates for a medical school or medical faculty of the University. This course lasts 4 years. At the time of the clinical training students learn the basic sciences, such as Biological Chemistry, Pharmacology, Physiology, Pathologic Physiology and others. Besides they have Psychology, which teaches the students to deal with patients. The students come in touch with patients in their third and fourth years. During this course the students learn Anesthesiology, Dermatology, Internal Medicine, Surgery, Preventive Medicine, Pediatrics, Gynaecology, Obstetrics and others. After graduation they may improve their qualification at postgraduate or special courses. As a rule after graduation from the University young doctors must work for 3-5 years under the supervision of experienced specialists in a certain field of medicine. After that they may work independently and have private practice.

In the USA there is a system of control and valuation of students' knowledge levels. The system of test is determined by means of test units. It is used for counting study hours, definition of academic progress and number of studied courses. For receiving the degree of Bachelor it is necessary to get 120-140 units during 4 years of study.

The most Universities are not state. They are private institutions. Each University has its own independent government and syllabuses. Medical education in the USA is very expensive and only the best students receive grants. The students pay additional fees for the using of laboratories, clinics and others.

**Ex. 12. Answer the following questions:**

1. What educational institutions train doctors in the USA? 2. How long does the doctors' training take in the USA? 3. What subjects do the medical students learn? 4. When do the students begin to work at the hospitals? 5. The most Universities are private institutions, aren't they? 7. What is their peculiarity in?

**Ex. 13. Complete the following sentences:**

1. The doctors' training may take from 8 to 13 years \_ . 2. The medical students have three \_ . 3. Clinical course of studies lasts \_ . 4. The doctor's specialization takes \_ . 5. In their third and fourth \_ the students work at \_ and get practical \_ . 6. After pre-clinical \_ they may \_ as \_ . 7. After graduation from the University young specialists work as \_ .

**Ex. 14. Translate the following sentences:**

1. У США університети та коледжі готують майбутніх лікарів. 2. Підготовка лікарів триває від 8 до 13 років. 3. Студенти вивчають анатомію, біологію, хімію, фармакологію, патологічну фізіологію, терапію та психологію.

**Ex. 15. Make up the sentences:**

1. The clinical training / at the time of / learn / the medical students / Therapy, Pathologic Physiology, Pharmacology, Psychology and others. 2. The students learn / during the pre-clinical training / and others / Anatomy, Biology, Chemistry. 3. In their third and fourth years / the students / work / at the hospitals / and / get practical experience. 4. After pre-clinical training / may work / they / as nurses. 5. As interns/ must work /after graduation / they.

**Ex. 16. Read and translate the following text:**

**MEDICAL EDUCATION IN THE UNITED KINGDOM**

There are 16 Universities and the Royal College of Physicians that train doctors. The students have to pay for their training. The average pay is rather high. Advanced students who have high index in all the subjects may get grants.

The General Medical council is the governing body of the medical profession. But there is no standard curriculum for all medical colleges and faculties. Premedical training takes 3 to 4 years. A medical course lasts from 5 to 7 years at different colleges, for dentists it is 4 years. Only advanced students have the possibility to go in for research. In the United Kingdom many students have to pay for their study.

During the premedical course students study the main sciences: Chemistry, Physics, Biochemistry, Human Morphology, Physiology and others. Only those students who have good results in their pre-medical training can continue their education, the rest of the students can work as nurses.

During the senior years students work at hospitals and learn much of medical procedures and diseases to be well prepared for their work. As a rule the students do not get appointments for work after graduation and make their own arrangements for work.

**Ex. 17. Complete the following sentences:**

1. During the pre-medical course the students study \_ . 2. Many senior students work \_ . 3. Only some students have the possibility \_ because many students have to pay for their study. 4. The students do not get appointments for work after \_ and make their own arrangements for work.

**Ex. 18. Answer the questions:**

1. What is the General Medical council? 2. How long does a medical course last? 3. Do the students have to pay for their training? 4. Is there a standard curriculum for all medical colleges and faculties? 5. Do the medical students receive grants? 6. What subjects do medical students study during the premedical course? 7. Do the students get appointments for work after graduation or do they make their own arrangements for work?



## OVERVIEW

In the USA Universities and medical colleges train doctors. The doctors' training takes from 8 to 13 years. The medical students have three or four years of pre-clinical training and clinical course of studies lasts four years. During the pre-clinical training students learn the main sciences. They are: Anatomy, Biology, Chemistry and others. At the time of the clinical training they learn Pharmacology, Pathologic Physiology, Therapy and others. The students come in touch with patients in their third and fourth years. Medical students may work as nurses after pre-clinical training. After graduation they must work as interns first. The most Universities are private institutions. Medical education in the USA is very expensive.

## LESSON 5 MY FUTURE PROFESSION

### VOCABULARY

**delivering** [dɪ'lɪv(ə)rɪŋ] тут забезпечення  
**although** [ɔ:l'dʒu:] незважаючи на те, що  
**illness** ['ɪlnɪs] хвороба, захворювання  
**particular** [pɑ'tɪkjʊlə] особливий  
**maternity home** [mɑ'tɜ:nɪ'ti'hɑ:m] пологовий будинок  
**procedure** [prə'sɪdʒə] процедура  
**palpation** [pə'pʌʃən] пальпація  
**measure** ['meɪʒə] вимірювати  
**tongue** [tʌŋ] язик  
**respiration** [respə'reɪʃən] дихання  
**chest** [tʃest] грудна клітка

**percussion** [pə'kʌʃən] вистукування, перкусія  
**auscultation** [ˈɔ:sk(ə)'tʌʃən] вислуховування (хворого), аускультация  
**comprise** [kəm'praɪz] включати, охоплювати  
**observation** [ˈɒbzə(ː)'veɪʃən] обстеження, нагляд  
**familiar** [fə'mɪljə] добре відомий  
**injure** [ɪ'nɪdʒə] ушкоджувати, травмувати  
**abdomen** [ˈæbdɒmən] черевна порожнина  
**blood** [blʌd] кров  
**urine** ['juːrɪn] сеча

### RULES OF READING

Letters	Sounds	Examples
o + n, m, v, u, th	[ʌ]	some come
i + nd, ld	[ə]	find mind

#### Ex. 1. Read the following words:

Government, cover, found, about, outbreak, mother, mouth, other, kind, child, childhood.

### WORD-BUILDING

#### Ex. 2. Familiarize yourself with the following material:

##### Suffixes of Noun:

**-ance, -ence** (denote condition or phenomena)

to resist *чинити опір* – resistance *опір*

to correspond *листуватися* – correspondence *листування*

#### Ex. 3. Read and translate the following words:

Dominance; difference; importance; significance; experience; recurrence; independence; disturbance; entrance; assistance.

### GRAMMAR:

#### Ex. 4. Familiarize yourself with the data of the following table:

##### FORMS OF THE VERB

I	II	III	IV
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<b>Infinitive</b> <b>V</b> <b>to work, to write</b>	<b>Past Form</b> <b>V<sub>2</sub></b> <b>worked, wrote</b>	<b>Participle II</b> <b>V<sub>3</sub></b> <b>worked, written</b>	<b>Participle I</b> <b>Ving (V<sub>4</sub>)</b> <b>working, writing</b>
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**Ex. 5. Distinguish carefully the correct pronunciation of the following regular verbs:**

<b>[d]</b>	<b>[t]</b>	<b>[ʃd]</b>
carry – carried center – centered examine – examined station – stationed love – loved control – controlled	work – worked develop – developed reduce – reduced notice – noticed focus – focused watch – watched	protect – protected divide – divided separate – separated treat – treated include – included found – founded

**Ex. 6. Name the four verb-forms:**

**A.** include; inform; provide; reduce; ratify; define; prepare; fill; examine; study; fulfill; prescribe; protect.

**B.** take; get; write; go; read; grow; learn; have; make; begin; come; feel; give; hear; keep; put; spend; think.

### **READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 7. Read VOCABULARY and memorize new words.**

**Ex. 8. Compose your-own sentences using VOCABULARY.**

**Ex. 9. Insert the missing letters and translate the following words:**

In\_ure; mea\_ure; obse\_vation; compri\_e; ur\_ne; proce\_ure; ausc\_ltation; per\_ussion; palpa\_ion; mate\_nity; illne\_s; althou\_h; deliv\_ring; blo\_d; ch\_st.

**Ex. 10. Read the following words and word-combinations:**

Anesthesiology; anesthesiologist; dermatology; dermatovenerologist; practice; internal; genetics; neurological surgery; surgeon; neuropathologist; gynecology; gynecologist; obstetrics; ophthalmology; ophthalmologist; otorhinolaryngology; pediatrics, rehabilitation; urology; urologist; oncologist; although; palpation; percussion; auscultation; tongue; abdomen; blood; physician; function; respiration; could; final.

**Ex. 11. Read the following text and translate it:**

#### **PROFESSION OF THE PHYSICIAN**

The physician is responsible for delivering health care. Although the health care system doesn't function without nurses or other professionals, final responsibility for person care falls on a physician.

Knowledge of illness and the ability to treat it are growing rapidly. That is why physician must remember that to treat patients is a great art, but no an ordinary trade. A good physician must have not only deep knowledge of a particular field of medicine, he/she must love people and have a kind heart. The physician gives all his/her knowledge, strength, abilities, talent, and time to people who need his/her help. One of the prominent therapists M.P. Konchalovsky said, "... a person may be a poor writer, a bad painter or an actor, but a person cannot and must not be a bad doctor".

After graduation from the Medical University the young physician works according to the following medical specialities: Anesthesiology, Dermatology, Family Practice, Medical Genetics, Neurological Surgery, Gynecology and Obstetrics, Ophthalmology, Otorhinolaryngology, Pediatrics, Physical Medicine and Rehabilitation, Plastic Surgery, Surgery, Urology and others.

So young specialist in the field of medicine may work as therapist, surgeon, neuropathologist, oncologist, ophthalmologist, urologist, gynecologist, anesthesiologist, dermatovenerologist and many others. He/She may work at the hospital, polyclinic, sanitary epidemiological station, maternity home, dispensary and others.

Working at the hospital, the doctor makes the morning round, examines the patients, makes the diagnosis, and prescribes proper treatment to every patient. The physical examination includes a number of procedures, such as: palpation, percussion, auscultation and others.

At the polyclinic the physician takes many patients. There is no need to say much about the importance of patient physical examination. The first step is obtaining general picture. Examination comprises the following: examination of the face, tongue, heart, chest; observation of the respiration; measuring temperature; and inspection of the abdomen. After examination of the patient the physician administers a proper treatment and gives advice to the patient. To be sure of the diagnosis the physician also directs the patient to make blood and urine analyses or to make X-ray or other tests. In addition to the consulting hours at the polyclinic local physician goes out to the calls.

The doctor is the most familiar profession in the health field, because most people turn to a doctor for advice when they are sick or injured.

**Ex. 12. Translate the following words and word-combinations into English:**

Хвороба, захворювання; процедура; аускультация; пальпація; перкусія; вимірювати; пологовий будинок; фізикальний огляд; здійснювати ранковий обхід; ставити діагноз; призначати лікування; грудна клітка; кров; черевна порожнина; робити аналіз крові.

**Ex. 13. Answer the following questions:**

1. What words should every physician remember? 2. What medical specialities may young physician work according to? 3. What medical specialists do you know? 4. What does the doctor do working at the hospital? 5. What methods of the patient's examination does the doctor use? 6. What are the steps of the physical examination?

**Ex. 14. Which of the professionals would you consult in each of the following cases?**

1. to operate on an eye cataract; 2. to treat your son's measles; 3. to test your eyesight; 4. to treat a rash (сыпь) on the skin; 5. to operate on your appendix; 6. to treat your cough.

**Ex. 15. Insert the missing words given below:**

1. I chose medicine as I wish to help people to be \_ and prolong their longevity. 2. I take interest in many \_. 3. The \_ of doctor is very honorable. 4. Every doctor knows that before the \_ of the patient it is necessary to make a correct diagnosis and determine the cause of the disease. 5. It is necessary to know the way and mechanisms of disease's \_ as well as symptoms by which it can be revealed. 6. The doctor must be \_ to each patient.

sciences; profession; careful; healthy; development; treatment.
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**Ex. 16. Insert the missing prepositions:**

1. The doctor must remember the professional oath, which he/she proclaimed \_ the meeting. 2. It is the famous physician Hippocrate's oath, which says that each doctor must be ready to give all abilities and all strength \_ the protection of the people's health. 3. The guide \_ the doctor's work is the commandment "Do not harm". 4. The physical examination includes a number \_ procedures, such as: palpation, percussion, auscultation and others.

**Ex. 17. Write out key words of the text "Profession of the Physician".**

**Ex. 18. Compose the detailed plan of the text "Profession of the Physician".**

**Ex. 19. Retell the text "Profession of the Physician" according to your plan.**

**Ex. 20. Read and try to memorize the following words:**

**Diabetes** [*ˈdaɪəˌbiːtɪz*] діабет; **blood pressure** [*ˈblʌd ˈpreʃə*] кров'яний тиск; **modifiable** [*ˈmɒdɪfaɪəbəl*] що піддається зміні; **goal** [*ɡoʊl*] ціль, мета; **imply** припускати; включати в себе; **evaluation** оцінка; **checkup** перевірка, огляд; **testicle** [*ˈtestɪkəl*] яєчко; **breast** [*breɪst*] груди, молочна залоза.

**Ex. 21. Read the following text and speak on the necessity of regular medical examination:**

#### **HOW OFTEN SHOULD I CONSULT MY PHYSICIAN**

The answer to this question varies, depending on whom you ask. Consult your physician if you have pain or other symptoms. However, the absence of symptoms does not necessarily guarantee that you are in good health. In the early stages, many diseases, including diabetes, high blood pressure, and some forms of cancer, are asymptomatic (without symptoms) but are treatable when found early. A periodic medical examination aims to diagnose treatable, asymptomatic diseases and to correct modifiable disease risk factors. These goals imply a comprehensive physical examination and laboratory evaluation. How often should you have a medical examination? All of us have different needs. Nevertheless, some guidelines may be useful to you. The guidelines given here are for people who have no symptoms of disease.

**Regular Physical Examination.** The interval between examinations depends on your age. If you are between ages 18 and 30, every 5 or 6 years is appropriate. After age of 30, every 3 years is probably a better frequency. Between ages 40 and 60, an every-other-year schedule is sensible; after age 60, have a checkup annually.

**Self-Examination.** Self-examinations are also important. Men should begin regular self-examination of the testicles in their teens. Women of childbearing age or older should examine their breasts monthly.

**Blood Lipid Measurements.** You should have blood cholesterol and triglyceride tests as early as possible, particularly if there is a family history of atherosclerosis. If test results are within normal limits, you should have these tests repeated at least every 5 years.

**Blood Pressure Measurement.** Have your blood pressure taken at every physical examination or more often if your physician advises.

**Ex. 22. Translate into Ukrainian and memorize the following definitions:**

**anaesthetist, anesthesiologist, anesthetist** – a specialist who administers an anesthetic to a patient before he is treated

**paediatrician, pediatrician, pediatricist** – a specialist in the care of babies

**cardiologist, heart specialist** – a specialist in cardiology; a specialist in the structure and function and disorders of the heart

**dermatologist, skin doctor** – a doctor who specializes in the physiology and pathology of the skin

**diagnostician, pathologist** – a doctor who specializes in medical diagnosis

**embryologist** – a physician who specializes in embryology

**endocrinologist** – physician who specializes in the diagnosis and treatment of conditions affecting the endocrine system

**ear-nose-and-throat doctor, ENT man, otolaryngologist, otorhinolaryngologist,**

**rhinolaryngologist** – a specialist in the disorders of the ear or nose or throat

**geriatrician, gerontologist** – a specialist in gerontology

**gynaecologist, gynecologist, woman's doctor** – a specialist in gynecology

**haematologist, hematologist** – a doctor who specializes in diseases of the blood and blood-forming organs

**neurologist** – a medical specialist in the nervous system and the disorders affecting it

**eye doctor, ophthalmologist, oculist** – a medical doctor specializing in the diagnosis and treatment of diseases of the eye

**orthopaedist, orthopedist** – a specialist in correcting deformities of the skeletal system (especially in children)  
**rheumatologist** – a physician specializing in rheumatic diseases  
**urologist** – a specialist in urology

## OVERVIEW

The physician is responsible for delivering health care. Every physician must remember that to treat patients is a great art. A good physician must have deep knowledge of a particular field of medicine. He/She must love people and have a kind heart. After graduation from the Medical University the young physician works according to the following medical specialities: Anesthesiology, Dermatology, Family Practice, Gynecology and Obstetrics, Ophthalmology, Surgery, Urology and others. So young specialist may work as therapist, surgeon, neuropathologist, oncologist, ophthalmologist, urologist, gynecologist and many others. He/She may work at the hospital, polyclinic, sanitary epidemiological station, maternity home, dispensary and others. The doctor examines the patients, makes the diagnosis, and prescribes proper treatment to every patient. The physical examination includes a number of procedures, such as: palpation, percussion, auscultation and others. The doctor is the most familiar profession in the health field, because most people turn to a doctor for advice when they are sick or injured.

## LESSON 6 PROMINENT PHYSICIANS

### VOCABULARY

**prominent** [*ˈprɪmɪnənt*] видатний  
**describe** [*dɪsˈkraɪb*] описувати, характеризувати  
**texture** [*ˈtekstʃə*] тканина  
**improve** [*ɪmˈpruːv*] поліпшувати(ся); удосконалювати  
**receive** [*rɪˈsiːv*] отримувати  
**degree** [*dɪˈɡriː*] звання, вчений ступінь  
**author** [*ˈɔːtə*] автор  
**research** [*rɪˈsiːtʃ*] наукове дослідження  
**nourishment** [*nʌˈrɪʃmənt*] годування, харчування; підтримка  
**gain** [*ɡeɪn*] отримувати  
**cavity** [*ˈkævɪtɪ*] порожнина

**favourable conditions** [*ˈfeɪvə(ɹ)qəbəl*] сприятливі умови  
**create** [*kreɪˈeɪt*] створювати  
**supervision** [*ˌsjuːpəˈvɪzən*] керівництво  
**abdominal diseases** [*ˌæbˈdɔːmɪnəl*] шлунково-кишкові захворювання  
**sliding palpation** [*ˈslaɪdɪŋˈpælpeɪʃən*] ковзна пальпація  
**win recognition** [*ˌreɪkəɡˈnɪʃən*] отримати визнання  
**huge** [*hjuːdʒ*] великий, величезний  
**plague** [*ˈpleɪɡ*] чума  
**invention** [*ɪnˈvenʃən*] винахід

### RULES OF READING

ee	[i:]	tree see
oo	[u:]	tool але: blood [ʌ]

#### Ex. 1. Read the following words:

Week, keep, been, need, feel, agree, spleen, feet, proceed, deep, three, free, cheese, asleep, cook, proof, too, room, choose, good, look, smooth, stool, teaspoonful.

### GRAMMAR:

#### Ex. 2. Familiarize yourself with the data of the following table:

#### IMPERSONAL SENTENCES

It is a pity.	Шкода.
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It is getting cold.	Стає холодно.
It seems that you are ill.	Певно, ви хворі.

**Ex. 3. Translate the following sentences into Ukrainian:**

1. It is time to begin our investigation. 2. It is difficult to do this work. 3. It will be useful to read about the structure of the digestive system. 4. It was important to learn the physiology of various organ systems.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 4. Read VOCABULARY and memorize new words.**

**Ex. 5. Compose 2-3 sentences using the words of the VOCABULARY.**

**Ex. 6. Insert the missing letters:**

Inven\_ion; hu\_e; palpa\_ion; supe\_vision; con\_ition; cre\_te; f\_vourable; re\_ognition; plag\_e; pr\_minent; tex\_ure; impr\_ve; rese\_rch; g\_in.

**Ex. 7. Translate the following word-combinations and sentences into Ukrainian:**

1. **cavity**; the upper cavity; the lower cavity; there are four cavities in the heart; abdominal cavity; abdominal cavity organs.
2. **to invent**; invention; inventor; to invent an artificial kidney; to invent an artificial tissue.
3. **kidney**; kidney removal; kidney texture; The human has two kidneys; The kidneys are internal organs.

**Ex. 8. Read the following words and word-combinations:**

Well-known; century; microscopist; kidney texture; author; anatomist; gymnasium; world science; theoretical; pathophysiological; lecturer; hematology; transfusion; nourishment; discover; stimulant; physician; initiative; clinician; supervision; myocardial infarction; sliding palpation; recognition; huge progress; plague; Marseilles; Lyons; Toulouse; Turin; valuable invention; widely used.

**Ex. 9. What famous physicians of the present do you know? What field of medicine do they work in?**

**Ex. 10. Read the following text:**

**PROMINENT SCIENTISTS AND PHYSICIANS OF UKRAINE**

A well-known Ukrainian scientist O.M. Shumlyansky was the prominent anatomist-microscopist of the 18<sup>th</sup> century. He was the first who described the kidney texture. O.M. Shumlyansky was born in 1748 in the village Yakivtsi of Poltava region. He graduated from the medical school in Petersburg and worked as a surgeon. Then he improved his education in the field of obstetrics and received his doctor's degree. O.M. Shumlyansky was a professor of the medical surgical school in Moscow. He was the author of many research works in the fields of surgery and obstetrics.

The outstanding Ukrainian anatomist V.P. Vorobyov (1876 – 1937) was born on July 15, 1876 in Odesa. In 1897 he finished gymnasium and entered the Medical Faculty of Kharkiv University. After graduation he worked as a professor at this University. In 1917 V. Vorobyov headed the chair of Normal Anatomy at the Kharkiv Medical Institute. One of the greatest contributions to the world science made by V. Vorobyov was "Atlas on Human Anatomy". This scientific work was of great importance for theoretical and practical medicine.

O. Bohomolets was the founder of a large school of pathophysiologists. O. Bohomolets graduated from the medical faculty at Odesa University in 1906 and worked as a lecturer there. In 1911–1925 he served as a professor at Saratov University in Russia and in 1925–1931 as a professor of pathophysiology at Moscow University; he was also director of the Institute of Hematology and Transfusion in Moscow (1928–1931). In 1931 he moved to Kyiv, where he founded the Institute of Experimental Biology and Pathology and the Institute of Clinical Physiology. He demonstrated that connective tissue had a protective function in the organism and played a role in its nourishment. Bohomolets wrote many works in Biology, Physiology, and Pathology and gained world-wide fame.

The prominent surgeon and scientist M. V. Skliphosovsky (1836 – 1904) was born in Moldova and spent his childhood in Odesa. After successful graduating from University he worked hard for the degree and became a professor of the Medical Academy in Petersburg. He was one of the organizers of surgical school in Russia. M.V. Skliphosovsky liked Ukraine and often visited Odesa and other Ukrainian towns. In 1871 he moved to Poltava and worked as a physician at the regional hospital. It should be noted that he took care about poor people. He treated them free of charge and tried to create favourable conditions in the hospital. A new school was built for poor children on his initiative and his daughter was a teacher there.

**Ex. 11. Translate the following words and word-combinations into English:**

Закінчити медичну школу; працювати хірургом; покращувати; автор багатьох науково-дослідних робіт; вступити на медичний факультет; очолити кафедру; сполучна тканина; здобути всесвітнє визнання; хірург; винайти ефективний метод; багато працювати; безкоштовно.

**Ex. 12. Translate the text "Prominent Scientists and Physicians of Ukraine" into Ukrainian.**

**Ex. 13. Complete the following sentences:**

1. The prominent anatomist-microscopist O.M. Shumlyansky described the \_\_. 2. He was the author of many \_\_ works. 3. V.P. Vorobyov is the \_\_ of "Atlas on Human Anatomy". 4. His work was of great \_\_ for practical medicine. 5. O. Bohomolets founded the Institute of Experimental Biology and \_\_ and the Institute of Clinical Physiology. 6. He demonstrated that connective tissue played a role in the organism's \_\_. 7. A prominent Ukrainian \_\_ M.V. Skliphosovsky treated poor people free of charge.

**Ex. 14. Read the following text and entitle it:**

The outstanding clinician and scientist of Ukraine M.D. Strazhesko (1876–1952) was an initiator in establishing Kyiv Institute of Clinical Medicine and worked there as the academician during a long period. Under the supervision of his teacher professor V.P. Obratsov he differentiated and described preclinical picture of myocardial infarction. M.D. Strazhesko was the author of many classical works describing the heart and abdominal diseases. He used Pavlov's scientific ideas in his clinic. He paid much attention to the clinical researches of his patients. V.P. Obratsov and M.D. Strazhesko worked out a new method of sliding palpation of abdominal cavity organs that won the world recognition. They made a huge progress in the field of cardiology.

The famous scientist and physician D.S. Samoilyovych (1742–1804) born in Ukraine more than others was known in Europe where his works on the fight against the plague were republished repeatedly. He was called the fighter against plague. He was elected a member of the academies of Rome, Marseilles, Lyons, Toulouse, Turin, the Paris Surgical Academy, the Paris Museum, and the Nancy Medical College.

The Institute of Eye Diseases named after V.P. Filatov in Odesa is one of the largest clinics in Ukraine. Academician V.P. Filatov founded this Institute and was its director during many years. The famous scientist V.P. Filatov has made some valuable inventions in medicine, which are widely used in medical practice. Much was done in the treatment of many eye diseases by the brilliant scientist.

**Ex. 15. Answer the following questions:**

1. What was O.M. Shumlyansky? 2. What school did he graduate from? 3. Was he the author of many research works? 4. What was M. Skliphosovsky? 5. When did he become a professor of the Petersburg Academy? 6. What did he do in Poltava? 7. What was M.D. Strazhesko? 8. Who was an initiator in establishing Kyiv Institute of Clinical Medicine? 9. Was he the author of many classical works? 10. What method did M.D. Strazhesko and his teacher V. P. Obratsov work out? 11. Who was the fighter against plague? 12. Who was the founder of the Institute of Eye Diseases? 12. What do you know about O. Bohomolets? 13. What was one of the greatest contributions to the world science made by V. Vorobyov?

**Ex. 16. Fill in the blanks:**

1. A well-known Ukrainian scientist O. M. Shumlyansky was the prominent \_ of the 18th century (A. anatomist-microscopist; B. the fighter against plague; C. cardiologist; D. surgeon). 2. M. V. Skliphosovsky was one of the organizers of a \_ school in Russia (A. therapeutic; B. ophthalmologic; C. oncological; D. surgical). 3. The outstanding clinician and scientist of Ukraine M. D. Strazhesko was an \_ in establishing Kyiv Institute of Clinical Medicine and worked there as the academician during a long period (A. connection; B. initiator; C. movement; D. head doctor). 4. M. D. Strazhesko was the author of many classical works describing the \_ and abdominal diseases (A. heart; B. lung; C. gullet; D. liver). 5. V. P. Obratsov and M. D. Strazhesko worked out a new method of sliding palpation of abdominal \_ organs that won the world recognition (A. spleen; B. fiber; C. cavity; D. muscle).

**Ex. 17. Translate the following sentences into English using words and word-combinations given in brackets:**

1. Відомий вчений І.М. Сеченов досліджував процеси абсорбції вуглекислого газу розчинами солі. (to investigate; the process; absorption; carbon dioxide; solution; salt). 2. Всесвітньо відомий фізіолог Павлов визначив, що умовні рефлекси формуються в корі головного мозку. (to determine; conditioned reflex; to form; cortex). 3. Видатний німецький бактеріолог Роберт Кох є засновником сучасної мікробіології. (prominent; bacteriologist; founder; modern microbiology). 4. У 1905 році Роберт Кох отримав Нобелівську премію за свої наукові відкриття. (Robert Koch; to get; Nobel prize; scientific discovery). 5. Олександр Флемінг винайшов пеніцилін. (Alexander Fleming; to discover; penicillin).

**Ex. 18. Translate the following sentences into English:**

1. Андреас Везалій був справжнім революціонером в анатомії. Він – автор ілюстрованого посібника "Про будову тіла людини". 2. Видатний вчений-медик М.І. Пирогов створив топографічну анатомію та ввів новий метод в анатомічне дослідження. 3. Д.М. Зернов – відомий російський анатом. Йому належать роботи з вивчення центральної нервової системи та анатомії черевної порожнини. 4. Академік, професор анатомії В.П. Воробйов розробив макро- та мікроскопічний методи дослідження. 5. До відомих вчених-анатомів, які працювали в Україні та створили регіональні школи науковців і викладачів анатомії, належать професори М.К. Лисенков, Ф.А. Волинський, М.Д. Довгялло, А.П. Любомудров, М.С. Спіров, Г.В. Терентьєв, Б.Й. Коган та інші.

**Ex. 19. Write out key words of the text "Prominent Scientists and Physicians of Ukraine".**



**Ex. 20. Speak on the prominent Ukrainian physicians.**

**OVERVIEW**

A well-known Ukrainian scientist O.M. Shumlyansky was the prominent anatomist-microscopist. He was the first who described the kidney texture. He was the author of many research works in the fields of surgery and obstetrics. The outstanding Ukrainian anatomist V.P. Vorobyov headed the chair of normal Anatomy at the Kharkiv Medical Institute. One of the greatest contributions to the world science was "Atlas on Human Anatomy". This scientific work was of great importance for theoretical and practical medicine. O. Bohomolets was the founder of a large school of pathophysiologists. He founded the Institute of Experimental Biology and Pathology and the Institute of Clinical Physiology. He demonstrated that connective tissue had a protective function in the organism and played a role in its nourishment. O. Bohomolets wrote many works in Biology, Physiology, and Pathology and gained world-wide fame. The prominent surgeon and scientist M. V. Skliphosovsky took care about poor people. He treated them free of charge and tried to create favorable conditions in the hospital where he worked. The outstanding clinician and scientist of Ukraine M.D. Strazhesko was an initiator in establishing Kyiv Institute of Clinical Medicine. He differentiated and described preclinical picture of myocardial infarction. M.D. Strazhesko was the author of many classical works describing the heart and abdominal diseases. The famous scientist and physician D.S. Samoilovych was called the fighter against plague. The Institute of Eye Diseases named after V.P. Filatov in Odesa is one of the largest clinics in Ukraine. V.P. Filatov founded this Institute and was its director during many years.

**LESSON 7**

**PUBLIC HEALTH SERVICE IN UKRAINE**

**VOCABULARY**

<b>Health Service</b> [ <i>hɛlθ'sɜ:vɪsɪs</i> ] служба охорони здоров'я	<b>maternity home</b> [ <i>mɑ'tɜ:nɪtɪ'hoʊm</i> ] пологовий будинок
<b>out-patient department</b> [ <i>ˌaʊt'peɪʃnt</i> ] амбулаторне відділення	<b>comprise</b> [ <i>kəmpraɪz</i> ] охоплювати
<b>strengthen health</b> [ <i>streŋθ(ɪ)n</i> ] зміцнювати здоров'я	<b>equip</b> [ <i>ɪkweɪp</i> ] обладнувати
<b>increase longevity</b> [ <i>ɪn'krɜ:z ɒn'dʒevɪtɪ</i> ] збільшувати тривалість життя	<b>familiar</b> [ <i>fə'mɪljə</i> ] звичайний
<b>maternity leave</b> [ <i>mɑ'tɜ:nɪtɪ'li:v</i> ] декретна відпустка	<b>illness</b> [ <i>ɪlnɪs</i> ] хвороба
<b>Health Network</b> [ <i>hɛlθ'netwɜ:k</i> ] мережа закладів охорони здоров'я	<b>provide</b> [ <i>prə'vaɪd</i> ] забезпечувати
<b>take care</b> [ <i>teɪk'keɪ</i> ] піклуватися	<b>prenatal</b> [ <i>prɪ'neɪtəl</i> ] допологовий
	<b>pregnant</b> [ <i>pregnənt</i> ] вагітна
	<b>mental clinic</b> [ <i>mentl'klɪnɪk</i> ] психіатрична лікарня
	<b>psychiatric</b> [ <i>saɪkɪ'ɒtrɪk</i> ] психіатричний

**RULES OF READING**

ai	[eɪ]	pain
ou	[aʊ]	out house але: trouble [ <i>trʌbl</i> ] cough [ <i>kɔ:f</i> ]
ea	[i:]	meat sea

**Ex. 1. Read the following words:**

Painful, complaint, waist, wait, mouth, about, round, count, without, outside, treat, treatment, measles, weakness, breathe, read, disease, please, mean, each, speak.

**GRAMMAR:**

**Ex. 2. Familiarize yourself with the data of the following table:**

**SIMPLE TENSES**  
(Affirmative Form, Active Voice)

<b>Tense</b>	<b>Form of the Verb</b>	<b>Example</b>
<b>Present Simple</b>	<b>V</b> (the third person singular + <b>-s,-es</b> )	I (you, we, they) <b>write</b> He (she, it) <b>writes</b>
<b>Past Simple</b>	<b>V2</b>	I (we) He (she, it) } <b>worked (wrote)</b> They (you)
<b>Future Simple</b>	<b>will (shall: after I or we) + V</b>	I (we) <b>shall</b> He (she, it) <b>will</b> } <b>write</b> They (you) <b>will</b>

**Ex. 3 Put the following verbs into Past and Future Simple Tenses:**

Prevent; strengthen; increase; comprise; provide; have; take; do; go; make; leave.

**Ex. 4. Read and translate the following sentences:**

1. I get up at 7 o'clock. 2. He brushes his teeth. 3. This student learns the main sciences. 4. She often goes to the hospital. 5. We came from Spain. 6. I live in Oxford. 7. I saw you yesterday. 8. I spoke to him. 9. I'll give you my book tomorrow. 10. The Health Network will comprise a great number of clinics. 11. This University trains medical specialists. 12. Your doctor will write a prescription for you. 13. Some people died of heart diseases. 14. On average Ukrainian men live to the age of 74.

**Ex. 5. Tell about yourself and your friend(s) in Present, Past and Future Simple Tenses using the following table:**

Every morning Yesterday Tomorrow	to get up at 6 o'clock to do morning exercises to wash with cold water to brush one's teeth to dress to comb one's hair before a looking-glass to make the bed to have breakfast to leave the room to go to the Academy to take a trolleybus to go on foot.
Every day Some days ago In two weeks	to come to the Academy by half past 8. to be present at the lectures and practical classes. to make abstracts at the lectures. to read texts at the English lessons. to do exercises. to work in laboratory. to go home.
In the evening Next month Last week	to prepare for the classes to do some exercises to read medical literature to make abstracts to visit friend

	to watch TV to go to bar to go to bed
--	---

**Ex. 6. Put the verbs into correct tense-forms and translate the sentences into Ukrainian:**

1. Some clinics (to provide) specialized care. 2. This doctor (to treat) the patients with chronic diseases. 3. Marry (to visit) the polyclinic yesterday. 4. This physician (to examine) many patients next Monday. 5. She (to take) the course of treatment in the rest home last month. 6. Medical specialists (to pay) much attention to the health protection of mother and child. 7. They (to build) new prenatal clinics in Ukraine in 5 years. 8. Mike (to need) periodic psychiatric attention. 9. Medical Institute (to train) future doctors. 10. As a rule doctors' training (to take) six years.

**Ex. 7. Find in the text "Public Health Service in Ukraine" sentences in Simple Tenses, read them, and translate into Ukrainian.**

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 8. Read VOCABULARY and memorize new words.**

**Ex. 9. Insert the missing letters:**

Departm\_nt; he\_lth; lon\_evity; il\_ness; prov\_de; \_sychiatric.

**Ex. 10. Read and translate the following words and word-combinations:**

Out-patient department; familiar; psychiatric; comprise; mental clinic; Health Network; strengthen health; provide; increase longevity; prenatal; maternity home; pregnant; illness; Health Service; take care; maternity leave.

**Ex. 11. Translate the following word-combinations into English:**

Пологовий будинок; збільшувати тривалість життя; служба охорони здоров'я; зміцнювати здоров'я; амбулаторне відділення; мережа закладів охорони здоров'я; декретна відпустка.

**Ex. 12. Read the following words and word-combinations:**

Principal; prevent; strengthen; longevity; comprise; out-patient; familiar; treat; specialized care; chronic; tuberculosis; ophthalmology; course of treatment; prenatal; pregnant women; maternity; psychiatric; finance; government; private; personnel; obstetrician; pharmacist.

**Ex. 13. Read and translate the following text:**

**PUBLIC HEALTH SERVICE IN UKRAINE**

The main principle of our Health Service is to prevent diseases, to strengthen the health of the people, and to increase their longevity.

The Health Network of Ukraine comprises a great number of hospitals, polyclinics, out-patient departments, and research institutes.

There are some kinds of hospitals. The most familiar is general hospital where patients of all ages with all kinds of illness and medical conditions are treated. Patients usually have acute problems and stay for only a short term. Other hospitals provide more specialized care. Some hospitals treat patients with chronic diseases, such as tuberculosis, or patients of one age group, like children.

Despite their growth in numbers, hospitals cannot provide services for all medical needs or patients. That is why in Ukraine there are a lot of polyclinics. As a rule patients visit them only as their needs arise.

In Ukraine there are large centers of cardiology, surgery, oncology, ophthalmology, and the First Aid Stations where many people are examined and treated.

We have different sanatoria and rest homes where a lot of our people rest and take the course of treatment. Much attention is paid to the health protection of mother and child. There are prenatal clinics and departments for pregnant women, and clinics for new mothers and their babies. Mothers are given maternity leaves and paid leaves until the baby is three years old. The mother's job is reserved during the definite period.

In Ukraine there are mental clinics for those who need periodic psychiatric attention.

Most hospitals are financed by the government of our country. Some clinics are private.

As for the medical personnel much attention is paid to the training of therapists, surgeons, gynecologists, obstetricians, nurses, stomatologists, pharmacists and other specialists, as they must take care about the health of the people.

**Ex. 14. Complete the following sentences:**

1. The main principle of our Health Service is \_.
2. The Health Network of Ukraine comprises a great number of hospitals, polyclinics, \_.
3. In Ukraine there are large centres of cardiology, \_.
4. New medical institutions are built and equipped with \_.
5. We have different sanatoria and rest homes where a lot of our people \_.
6. Much attention is paid to the health protection \_.
8. At present many sanatoria and rest homes are presented to the mothers and children suffered from \_.
9. As for the medical personnel much attention is paid to \_.

**Ex. 15. Answer the following questions:**

1. What is the main principle of our Health Service?
2. What does the Health Network of Ukraine comprise?
3. What kinds of medical establishments do you know?
4. Can the hospitals provide services for all medical needs?
5. Is much attention paid to the health protection of mother and child in our country?
6. What are the mothers given and paid until the baby is three years old?
7. Why is much attention paid to the training of medical personnel in Ukraine?

**Ex. 16. Translate the following sentences into English:**

1. В Україні є великі центри та науково-дослідні інститути кардіології, хірургії, онкології та офтальмології.
2. В Україні є багато поліклінік.
3. Існує значна кількість спеціалізованих клінік для пацієнтів, які мають хронічні захворювання.

**Ex. 17. Put the given verbs and nouns in proper pairs:**

**Verbs:** strengthen; reserve; increase; provide; prevent; pay; visit; train.

**Nouns:** the diseases, the health, the longevity, a care, the hospitals, attention, the job, medical specialists.

**Ex. 18. What does the text "Public Health Service in Ukraine" describe?**

You may use the following phrases:

The present paper	describes ...	Ця стаття описує ...
This work	considers ...	Ця праця розглядає ...
This article	discusses ...	В статті обговорюється ...
The present article	analyzes ...	Стаття аналізує ...
	deals with ...	В статті розглядається...
This work	gives a review of ...	Ця праця пропонує огляд ...

**Ex. 19. Compose the detailed plan of the text "Public Health Service in Ukraine".**

**Ex. 20. Retell the text "Public Health Service in Ukraine" according to the plan.**

**OVERVIEW**

The main principle of our Health Service is to prevent diseases and to increase the people's longevity. The Health Network of Ukraine has a great number of hospitals and polyclinics. In Ukraine there are large centers of cardiology, surgery, oncology, ophthalmology, and the First Aid Stations. We have different sanatoria and rest-homes where a lot of our people rest and take the course of treatment. Much attention is paid to the health protection of mother and child. We have maternity homes, nurseries, kindergartens, and special hospitals. There are rest homes and sanatoria for mothers and children too. Many of them have the treatment and rest in other countries. As for the medical personnel much attention is paid to the training of doctors, nurses and other medical specialists, as they must take care about the people's health.

## LESSON 8

### PUBLIC HEALTH SERVICE ABROAD

#### VOCABULARY

**authority** [ə:'θɔ:ri:tɪ] керівний орган

**cancer** ['kænsə] рак

**National Health Service** ['næʃənəl'heɪlθ'sɜ:vɪsɪs] державна служба охорони здоров'я

**chemist's** ['kɛmɪsts] аптека

**pharmacy** ['fɑ:mɑ:sɪ] аптека

**expect** [ɪks'pekt] чекати

**expectancy** [ɪks'pekt(ə)nəsɪ] очікування, сподівання, погляди на майбутнє

**practitioner** ['præktɪtʃənɪ] практикуючий

лікар

**homeopathy** ['həʊmɪə'pæθɪ] гомеопатія

**acupuncture** [ˌækjʊ'pʌktʃə] акупунктура, голкотерапія

**diet** [daɪət] харчування, їжа

**raise** [reɪz] підвищувати

**average** ['ævərɪdʒ] середній, пересічний

**deal with** [di:l'wɪθ] мати справу з

**suffer from** [sʌfə'frɒm] хворіти на щось

#### RULES OF READING

ay	[eɪ]	day stay
au	[əʊ]	August autocar
aw	[əʊ]	saw
ow	[aʊ]	brown down
ow	[qu]	window але: now [naʊ], cow [kaʊ]
oa	[əʊ]	coat load
oi	[ɔɪ]	oil boil
oy	[ɔɪ]	boy joy
ew	[ju:]	new few

#### Ex. 1. Read the following words:

Stay, X-ray, may, array, today, play, say, way, nausea, auscultation, cause, because, author, authority, daughter, jaw, saw, draw, withdraw, awful, law; know, knowledge, follow, below, powder, how, however, allow; throat, oath, goal, float, voice, ethmoid, sphenoid, join, destroy, employ; review, new.

#### WORD-BUILDING

#### Ex. 2. Familiarize yourself with the following material:

##### Suffixes of Noun:

**-th** (denotes condition or phenomena)

death *смерть*

**-ment** (denotes condition or phenomena)

to govern *керувати* – government *керівництво*

to excite *збуджувати* – excitement *хвилювання, збудження*

**Ex. 3. Read and translate the following words:**

**A.** Growth; childbirth; length; death.

**B.** Treatment; achievement; department; appointment; development; supplement; movement; establishment; requirement.

### GRAMMAR: SIMPLE TENSES

(Affirmative Form, Active Voice)

**Ex. 4. Put the verbs into correct tense-forms and translate the sentences into Ukrainian:**

1. Your General Practitioner (to write) a prescription for you tomorrow. 2. The doctor (to send) him to a hospital last week. 3. This institution (to provide) free medical care for all the Americans over 65. 4. Nearly a million people (to work) in the NHS in Britain. 5. M.D. Strazhesko (to describe) preclinical picture of myocardial infarction.

### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 5. Read VOCABULARY and memorize new words.**

**Ex. 6. Compose 2-3 sentences using the words of the VOCABULARY.**

**Ex. 7. Insert the missing letters and translate the following words:**

Pra\_titioner; c\_ncer; ra\_se; ave\_age; di\_t; pha\_macy; expe\_t; a\_thority; priv\_te; servi\_e.

**Ex. 8. Read the following words and word-combinations:**

Energy; general practitioner; women; chemist's; cost; unless; group; Health Service; provide; prescription; eye; glasses; private doctor; alternative *[ɔ:l'tɜ:nə'tɪv]* medicine; homeopathy; acupuncture; diet; raise; average; die; cancer; cause; government; authority; suggest; suffer from.

**Ex. 9. Read the following text:**

#### NATIONAL HEALTH SERVICE IN THE UNITED KINGDOM

In the UK today people are putting time, money, and energy into keeping well. Health care is important.

If you are ill in the UK, you go to see your General Practitioner (GP), or family doctor.

There are 36,000 GPs in UK. Each GP has nearly 2,000 patients. If you need medicine, your GP will write a prescription for you to take to a chemist's or pharmacy. You don't have to pay to see doctor, but you will probably have to pay part of the cost of your medicine, unless you belong to one of the groups of people who get their medicine free, for example, you are a student, or over 60, or expecting a baby.

If you need to see a specialist doctor, or have medical tests or an operation, your doctor will send you to a hospital. In Britain most doctors and hospitals are the part of the National Health Service (NHS). All NHS hospital treatment and operations are free. In fact, the NHS provides free medical care for everyone in Britain from very young to the very old.

When the NHS started in 1948, it provided free visits to doctors and dentists; free treatment, free prescriptions, free eye tests and free glasses. But today many people have to pay for prescriptions, for eye tests and glasses, and for dentists.

Nearly a million people work in the NHS in Britain, and it costs almost £40 billion a year. There are still problems. People sometimes must wait a long time before they can see a specialist or have an operation. Because of this, many people see private doctors and use other kinds of treatment, or alternative medicine, like homeopathy and acupuncture. There are more alternative medical practitioners in Britain than NHS doctors.

New medicines and better diet have raised life expectancy. On average British men live to the age of 74, British women to 79. Many people live longer than that.

More British people die of heart disease and cancer than from any other cause. The government and health authorities in Britain are trying very hard, and in many different ways, to deal with this problem. Research suggests that people are much less likely to suffer from heart disease if they eat five portions of fruit and /or vegetables every day.

**Ex. 10. Translate the following words and word-combinations into English:**

Служба охорони здоров'я; хворіти; практикуючий лікар; приватний; рак; керівний орган; аптека; чекати; мати справу; гомеопатія.

**Ex. 11. Translate the text "National Health Service in the United Kingdom" into Ukrainian.**

**Ex. 12. Answer the questions:**

1. What is the NHS?
2. Name as many different reasons as you can for going to hospital in Britain?
3. Which two diseases kill most Britons?
4. Name different kinds of alternative medicine.
5. On average how long do British men live? And women?
6. Why do people sometimes go to private doctors?
7. What kinds of medical care are free in Britain?

**Ex. 13. Complete the following sentences with the words:**

1. If you are ill in Britain, you go to see your General \_\_, or family doctor.
2. In Britain there \_ 36,000 GPs.
3. If you need medicine, your GP will write a prescription for you to take to a \_.
4. You don't have to \_ to see doctor.
5. You will have to pay part of the cost of your \_.
6. If you are a student, or over \_\_, you get medicine free.
7. If you need to see a specialist doctor, or have medical tests or an \_\_, your doctor will send you to a hospital.
8. Most doctors and hospitals are the part of the National \_ Service.
9. All NHS hospital \_ and operations are free.
10. Today many people have to pay for prescriptions, for eye tests and \_.

**Ex. 14. Put the words below into correct column in the table. Be careful! One word can go in two columns.**

Hospital; cancer; tablets; influenza; malaria; dentist; surgery; bronchitis; general practitioner; specialist; operating theatre; nose drops; chemotherapy; clinic; nurse; appendicitis; pharmacy; physiotherapy.

People	Places	Diseases	Treatment

**Ex. 15. Complete the following sentences:**

1. Medicine helps \_ better.
2. Diet helps them \_ healthy.
3. If you \_ well, you'll probably have a longer and healthier life.
4. Nowadays British people eat more fresh \_ and vegetables than in the past.

**Ex. 16. What are the differences between the following words. Put the sentences below into the correct columns:**

Receipt [rɪ'sɪpt]	Prescription	Recipe [rɪ'sɪpɪ]
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1. That soup was delicious. Can you let me have the recipe? 2. They wouldn't give me money back because I didn't have the receipt. 3. The doctor gave me a prescription for some antibiotics and told me to come back in three weeks.

**Ex. 17. Read the following words and try to memorize them:**

Obligation обов'язок; come to an arrangement прийти до згоди; infirmary лікарня, лазарет; nursing home приватна лікарня; oblige змушувати, зобов'язати.

**Ex. 18. Read the following text and retell it:**

The main organ of British Health Service is the National Health Service.

It consists of three parts: the Local Health Authorities, the General Practitioners, and Hospitals and Specialist Services. The Local Health Authority has an obligation to make arrangements with the General Practitioners for the vaccination of these who live within the area. The Hospitals and Specialist Services have definite tasks too.

There are general and special hospitals, as tuberculosis, infectious diseases units and other forms of special treatment.

Besides the state hospitals there are infirmaries and nursing homes. Many patients are obliged to visit the private doctors. These doctors have their own consulting rooms or take part in a Family Doctor's Service.

In the United Kingdom there are many sanatoria and rest homes where the people take the course of treatment.

**OVERVIEW**

If you are ill in Britain, you go to see your General Practitioner, or family doctor. There are 36,000 GPs in Britain. Each GP has nearly 2,000 patients. If you need medicine, your GP will write a prescription for you to take to a chemist's. You will probably must pay part of the cost of your medicine. If you are a student, or over 60, or expecting a baby, you get medicine free. You don't have to pay to see doctor. If you need to see a specialist doctor, or have medical tests or an operation, your doctor will send you to a hospital. In Britain most doctors and hospitals are the part of the National Health Service. All NHS hospital treatment and operations are free. Today many people must pay for eye tests and glasses, and for dentists. Many people see private doctors and use other kinds of treatment, or alternative medicine.

**LESSON 9**

**OUT-PATIENT DEPARTMENT**

**VOCABULARY**

**establish** [*s'tæblish*] засновувати, встановлювати  
**condition** [*kən'diʃən*] стан  
**fall ill** [*fɔl 'ɪl*] захворіти  
**make an appointment** [*meɪn 'æpɔɪntmənt*] записатися на прийом  
**sick** [*sɪk*] хворий, нездоровий  
**ache** [*eɪk*] біль  
**comprise** [*kəm'praɪz*] включати, містити в собі  
**call in** [*kɔ:lɪn*] викликати  
**complaint** [*kəm'pleɪnt*] скарга  
**correct** [*kə'rekt*] відповідний

**tongue** [*tʌŋ*] язик  
**respiration** [*respə'reɪʃən*] дихання  
**chest** [*tʃest*] грудна клітка  
**abdomen** [*æbdəmən*] черевна порожнина  
**measure** [*meɪʒə*] вимірювати  
**blood pressure** [*blʌd'preʃə*] кров'яний тиск  
**urine** [*'ju:rn*] сеча  
**administer** [*əd'mɪnɪstə*] призначати  
**injection** [*ɪn'ɪekʃən*] ін'єкція  
**proper** [*'prɔ:pə*] відповідний  
**sick leave** [*sɪk'li:v*] лікарняний лист  
**regimen** [*'redʒɪmən*] режим  
**fill in** [*'fɪlɪn*] заповнювати



**blood circulation** [ˈblʊd sɜːkjʊˈleɪʃən] кровообіг  
**extend** [ɪkˈsɛnd] розповсюджуватися  
**lung** [lʌŋ] легеня

**prophylactic** [ˈprɒfɪˈlæktɪk] профілактичний  
**prevention** [prɪˈvenʃən] запобігання  
**follow** [ˈfɒləʊ] дотримуватись, слідувати

### RULES OF READING

a + ll	[ɔː]	all tall але: shall [ʃəl] malleus [ˈmælɪs]
a + ss	[ɑː]	glass але: mass [mæs]
a + lk	[ɔː]	talk
a + sk	[ɑː]	task
a + st	[ɑː]	last

#### Ex. 1. Read the following words:

Fall, call, swallow, eyeball, wall, small, gallbladder; class, pass; walk; ask; past, plaster.

### WORD-BUILDING

#### Ex. 2. Familiarize yourself with the following material:

##### Suffixes of Nouns:

**-age** (denotes condition or phenomena)

**-er, -or** (one who; object)

to listen *слухати* – listener *слухач*

to elevate *піднімати* – elevator *підйомник, елеватор*

**-osis** (abnormal condition)

osteoporosis *остеопороз, зменшення маси кістки*

**-tomy, -otomy** (cut into; incision; section)

vagotomy *ваготомія, переривання передачі імпульсів блукаючим нервом або його гілками*

#### Ex. 3. Read and translate the following words:

**A.** Language; message; advantage; usage; cartilage; storage; damage; passage.

**B.** Teacher; doctor; lawyer; player; writer; painter; reader; author; radiographer.

**C.** Tuberculosis; cardiosclerosis; atherosclerosis; necrosis.

**D.** Cholecystectomy; laparotomy; appendectomy.

### GRAMMAR:

#### Ex. 4. Familiarize yourself with the data of the following table:

##### SIMPLE TENSES

##### (Interrogative Form, Active Voice)

##### General Questions

Tense	Auxiliary verb	Subject	Predicate (V)	...?
Present Simple	<b>Do</b>	you (they, we, I)	work	at the hospital?
	<b>Does</b>	he (she, it)		
Past Simple	<b>Did</b>	I (he, she, it, you, we, they)	study	at the University?

Future Simple	<b>Will</b>	they (you, he, she, it)	go	to the polyclinic?
	<b>Shall</b>	I (we)		

**Ex. 5. Translate the following interrogative sentences into Ukrainian:**

1. Do you study? 2. Does the physician make a morning round? 3. Does she listen to the patient's heart? 4. Did you have measles? 5. Does he have narcotic habit? 6. Will you go to the polyclinic for prophylactic examination in a week? 7. Does this physician work at the local polyclinic? 8. Did they go to the registry first? 9. Did he make a correct diagnosis?

**Ex. 6. Insert the auxiliary verbs:**

1. \_ he measure blood pressure every day? 2. \_ she work as a therapist? 3. \_ they attend many lectures yesterday? 4. \_ he go to the lab tomorrow? 5. \_ you make the appointment with the definite specialist two days ago?

**Ex. 7. Make the following sentences interrogative:**

**Note:**

- 1) Determine the tense-form;
- 2) Select auxiliary verb;
- 3) Keep the structure of the interrogative sentence.

1. Neurologists work at the polyclinic. 2. The physician knows all the symptoms of gripe. 3. My friend works at the therapeutic department. 4. The doctor measured patient's blood pressure. 5. They went out to the calls yesterday. 6. Our students made notes at the lecture. 7. Nick will fill in all case-histories. 8. We shall examine the heart and lungs of the patient.

**Ex. 8. Translate into English:**

1. Чи Ви навчаєтесь в педагогічному інституті? 2. Чи він вимірює кров'яний тиск своїх пацієнтів? 3. Чи ці студенти працювали в лікарні? 4. Чи лікар вчора оглянув цього хворого? 5. Чи вони переклали цей текст? 6. Чи він буде дотримуватися постільного режиму?

**Ex. 9. Familiarize yourself with the data of the following table:**

**Special Questions**

Tense	Interrogative word	Auxiliary verb	Subject	Predicate ...?
<b>Present Simple</b>	What	<b>do</b>	I (you, we, they)	<b>V</b>
	Which When Where How many How much	<b>does</b>	he (she, it)	
<b>Past Simple</b>	How long Why	<b>did</b>	I (we, he, she, it, you, they)	<b>V</b>
<b>Future Simple</b>	How often	<b>shall</b> <b>will</b>	I (we) he (she, it, you, they)	<b>V</b>

**Examples:**

Where	<b>do</b>	you	<b>study?</b>
What Academy	<b>does</b>	this student	<b>study at?</b>
When	<b>does</b>	Bill	<b>work at the hospital?</b>
Why	<b>did</b>	Nick	<b>go to the lab?</b>
When	<b>will</b>	they	<b>enter the Academy?</b>

**NOTE:** У запитаннях до підмета або визначення підмета зберігається прямий порядок слів:  
*Who studies English? What specialists work here?*

**Ex. 10. Translate the following questions into Ukrainian:**

1. When does your working day begin? 2. What subjects will you study? 3. What did you do after classes yesterday? 4. What specialists does the medical faculty train? 5. How long does the course of training take at your Academy? 6. What does a physician do during the medical examination? 7. In what cases does a local physician go out to the calls?

**Ex. 11. Insert the auxiliary verbs:**

1. What Institute \_ Ann study at? 2. What faculty \_ you study at? 3. Why \_ you choose medicine as your speciality? 4. What specialists \_ your faculty train? 5. What clinical subjects \_ the medical students study? 6. How many credit tests \_ you take next term? 7. How many terms \_ the academic year have? 8. How long \_ doctors' training take? 9. What \_ a local physician write down in every patient's card last week?

**Ex. 12. Put the questions to the following sentences:**

1. Doctors' training takes six years. (How long...?) 2. The students will study clinical subjects. (What subjects...?) 3. Senior students acquire practical skills working at the hospitals and polyclinics. (Where...?) 4. In addition to the consulting hours at the polyclinic local physician goes out to the calls. (In what cases...?) 5. Yesterday the doctor put him on a sick-leave. (What...?)

**Ex. 13. Translate the following questions into English:**

1. У якому інституті Ви навчаєтесь? 2. Коли ваші студенти працюватимуть в лікарні? 3. Де він працював минулого року? 4. Які предмети вивчатимуть студенти-старшокурсники наступної зими? 5. Як Ви проводите фізикальний огляд пацієнта? 6. Як часто він вимірює кров'яний тиск?

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 14. Read VOCABULARY and memorize new words.**

**Ex. 15. Compose 2-3 sentences using the words of the VOCABULARY.**

**Ex. 16. Find corresponding Ukrainian equivalents to the following English terms:**

- |                      |                               |
|----------------------|-------------------------------|
| 1) to administer     | a) лікарняний лист            |
| 2) sick leave        | b) профілактика, попередження |
| 3) prevention        | c) кров'яний тиск             |
| 4) to fall ill       | d) ставити діагноз            |
| 5) blood pressure    | e) години прийому             |
| 6) to make diagnosis | f) захворіти                  |
| 7) consulting hours  | g) призначати                 |

**Ex. 17. Make up the sentences (affirmative or interrogative):**

Therapeutist(s)	examine(s) the patient.
Surgeon(s)	listen(s) to the patient's heart and lungs
Physician(s)	palpate(s) the abdominal parts.
Nurse(s)	feel(s) the pulse.
	measure(s) blood pressure.
	give(s) administered injections.
	make(s) the diagnosis.
	fill(s) in a patient's card.
	prescribe(s) proper treatment to every patient.

**Ex. 18. Translate the following word-combinations and sentences into Ukrainian:**

1. **call**; to go out to the calls; to call in a doctor to a sick girl; This call came in yesterday; Why did you call in a doctor?
2. **consult**; to consult a doctor; consulting hours; Did you consult a therapist?
3. **complaint**; to complain; complain of a bad stomachache; constant complaints; What are your complaints? What do you complain of?
4. **correct**; to make a correct diagnosis; to administer a correct treatment; to correct a mistake.
5. **sick**; a sick infant; a sick female; a sick male; a sick-leave; to be on a sick-leave; to receive a sick-leave.
6. **fill in**; to fill in a temperature chart; The doctor filled in this patient's card; Why didn't you fill in a sick-leave?

**Ex. 19. Read the following words and word-combinations and translate them into Ukrainian:**

To establish; a wide network; to fall ill; his condition is poor; neurologist; registry; definite specialist; to extend to all parts of the human body; to comprise; tongue; respiration [ˈrɛspɪr'eɪʃ(ə)n/]; heart; blood circulation; pulse [pʊls/]; to measure [meɪʒ/] temperature; abdomen [ˈæbdɒmɪn/]; to listen to; to prescribe proper treatment; laboratory; analysis; urine [ˈjuːrɪn/]; consulting hours [ˈkɒnsʌlɪŋ/]; to put her on a sick-leave; fulfill the doctor's prescriptions.

**Ex. 20. Insert the missing letters:**

Exam\_ne; pa\_ient; lis\_en; he\_rt; lun\_; palp\_te; abdo\_en; p\_lse; me\_sure; blo\_d; pres\_ure; inje\_tion; ton\_ue; e\_tend; r\_spiration; urin\_; admini\_ter.

**Ex. 21. Read the following text:**

**POLYCLINIC**

The state has established a wide network of the medical institutions. One of them is the polyclinic. If a person falls ill he/she calls in a doctor. When his/her condition isn't poor he/she goes to the local polyclinic. Many specialists, such as therapists, surgeons, neurologists, gynecologists and others work here.

When a patient comes to the local polyclinic he/she goes to the registry first and makes the appointment with the definite specialist.

The physical examination must be performed methodically and extended to all parts of the body. Examination comprises the following:

General examination;

Examination of the face (the face is usually a mirror of person's condition);

Examination of the tongue;

Observation of respiration;

Examination of the heart function, blood circulation and pulse;

General examination of the chest;

Measuring temperature;

Examination of the abdomen.

So at the medical examination a physician listens to the patient's heart and lungs, palpates the abdominal parts, feels the pulse, and measures blood pressure. The doctor makes the diagnosis and prescribes proper treatment to every patient.

The laboratory analysis (blood analysis and urine analysis) and other tests help to make a correct diagnosis and administer proper treatment.

In addition to the consulting hours at the polyclinic local physician goes out to the calls to examine those patients who have a high temperature or who are seriously ill. The doctor puts them on sick-leaves for several days. Patient must follow a bed regimen and fulfill the doctor's prescriptions.

Any local physician knows his/her patients very well because he/she treats a definite number of patients. At the polyclinic every patient has a personal patient's card, which is filled in by physician. Everything about the patient is written down in the card.

Twice a year the local physician should invite his/her patients for prophylactic examination with the aim of prevention of different diseases.

**Ex. 22. Translate the following words and word-combinations into English:**

Дотримуватися, слідувати; захворіти; лікарняний лист; дотримуватися постільного режиму; оглядати хворого; вимірювати кров'яний тиск; пульс; пальпувати органи черевної порожнини; певна кількість пацієнтів; записатися на прийом.

**Ex. 23. Translate the text "Polyclinic" into Ukrainian.**

**Ex. 24. Do you agree, disagree or partially agree with the statements below?**

Suggestions for useful phrases:

<b>When you agree</b>	<b>When you disagree</b>	<b>When you only partially agree</b>
I totally agree	Of course not	To a certain extent
I quite agree	On the contrary	I am not certain
I suppose so	I don't really think so	Yes, in a way
Quite so	Nothing of the kind	I agree to some extent
There's no denying it	Nonsense	
That's true	Far from it	
No doubt	It is out the question	
	I hardly think so	

1. The state hasn't established a wide network of the medical institutions. 2. If a person falls ill he/she will call in a mechanic. 3. Many specialists, such as therapists, lawyers, surgeons, neurologists, teachers, gynecologists and others work at the local polyclinic. 4. Gynecologist examines the patient, listens to the patient's heart and lungs, palpates the abdominal parts, feels the pulse, and measures blood pressure. 5. The therapist makes the diagnosis and prescribes proper treatment to every patient. 6. In addition to the consulting hours at the polyclinic local physician goes out to the calls to rest a little. 7. The blood analysis, urine ones and other tests don't help to make a correct diagnosis and administer proper treatment. 8. Any local physician knows his/her patients very well because he/she treats a definite number of patients.

**Ex. 25. Insert the missing words or word-combinations:**

1. The state has established a \_ of the medical institutions. 2. If a person \_ he/she calls in a doctor. 3. Many specialists, such as \_ , \_ , \_ , \_ and others work here. 4. At the medical examination a physician \_ the patient, listens to the patient's \_ , palpates the abdominal parts, \_ the pulse and \_ blood pressure. 5. The laboratory tests help to \_ a correct diagnosis and \_ proper treatment. 6. In addition to the \_ at the polyclinic local physician goes out to the \_ . 7. He examines those patients who are seriously \_ . 8. At the polyclinic every patient has a personal \_ , which is written down by the physician. 9. Twice a year the local physician invites patients for \_ .

**Ex. 26. Answer the following questions:**

1. What medical institutions in Ukraine do you know? 2. What does a person do if he/she fall ill? 3. What medical specialists work at a local polyclinic? 4. What does a physician do during the medical examination? 5. In what cases does a local physician go out to the calls? 6. What patients receive sick-leaves? 7. What does a local physician write down in every patient's card?

**Ex. 27. What do the doctors do? Fill in the blanks with the words below:**

When people have some problems like being \_ or having lost appetite, they go to see the doctor in his/her \_ . Every doctor has a \_ to help the patient. When the doctor sees \_ in the surgery, first he/she listens to their problems, then he/she \_ them. The doctor takes the patient's temperature, listens to his/her \_ , looks in his/her ears, eyes, takes his \_ . Then, if the \_ isn't so serious, the doctor \_ some medicine. Later the patient will take the \_ to the \_ . If something is seriously wrong with the patient, the doctor sends him/her to the hospital for \_ .

1. patients; 2. treatment; 3. examines; 4. heart and lungs; 5. depressed; 6. blood pressure; 7. prescribes; 8. surgery (кабінет); 9. disease; 10. chemist's (аптека); 11. nurse; 12. prescription.

**Ex. 28. Combine corresponding parts into sentences, paying attention to the meaning of the sentences:**

1. The physician must know all the symptoms in the patient's own words and \_ . 2. The patient's voice, \_ can give important clues to discover not only something about the disease but also about the patient. 3. The time the physician spends on thorough anamnesis \_ . 4. \_ "good anamnesis is half-way to diagnosis".

A. helps him/her in diagnosing; B. facial expression and attitude; C. we know that; D. not to avoid minor complaint that may be of importance.

**NOTES:**

**avoid** [q'vɔʃd/] уникати

**minor** [maɪnɔr/] незначний, другорядний

**clue** [klu:] ключ

**attitude** [ˈæt.ʃtju:d/] постава або положення тіла

**anamnesis** [ˈænæm'nɪ:sɪs/] анамнез

**Ex. 29. Get ready to speak on the physical examination of the patient.**

**Ex. 30. Ask 8-10 questions to the text "Polyclinic".**

**Ex. 31. Make up a dialogue on obtained information.**

**Ex. 32. Read the following dialogue and translate it:**

**Alex:** Hello, John. When did you fall ill?

**John:** I fell ill two weeks ago.

**Alex:** I didn't know anything about your illness till George told me about it.

**John:** Yes, the onset was so sudden.

**Alex:** Was it acute?

**John:** Yes, quite. I couldn't sleep at night, felt feverish, and could hardly stand on my legs. I had a splitting headache and a bad cough.

**Alex:** Was your temperature high?

**John:** Oh, yes. It was very high: thirty-eight point nine. I didn't know that it was so high and wanted to go to our district polyclinic, but my mother didn't let me out.

**Alex:** Did you call in a doctor?

**John:** Certainly. He examined my lungs, told me to breathe deeply and to cough repeatedly. He took my temperature once more. It was 38.9<sup>0</sup>C.

**Alex:** Did he diagnose your case?

**John:** Yes, he did. He told that I had pneumonia.

**Ex. 33. Answer the following questions:**

1. Did John have a cold or pneumonia? 2. What symptoms did John have? 3. Did he go to the polyclinic to consult a physician? 4. Why did he call a doctor in? 5. What did the doctor do in order to diagnose his case?

**Ex. 34. Reproduce the similar dialogue (see ex. 32).**

### Ex. 35. Read and retell the following text:

#### MEDICAL ETHICS

Medical ethics started with Hippocrates and his oath to do no harm. Medical ethics is the moral conduct and principles that govern members of the medical profession. Medical ethics is sometimes viewed as part of bioethics, which concerns ethics in the sciences, and is closely related with nursing ethics and others areas of ethics which intersect with medical practice. Going beyond the physical practice of medicine, medical ethics also includes business and financial ethics as well as general ethical issues such as how to treat fellow human beings when they are in need.

Six of the values that commonly apply to medical ethics discussions are:

Autonomy – the patient has the right to refuse or choose their treatment.

Beneficence – a practitioner should act in the best interest of the patient.

Non-maleficence – "first, do no harm".

Justice – concerns the distribution of scarce health resources, and the decision of who gets what treatment (fairness and equality).

Dignity – the patient (and the person treating the patient) has the right to dignity.

Truthfulness and honesty – the concept of informed consent has increased in importance since the historical events of the Doctors' Trial of the Nuremberg trials.

Values such as these do not give answers as to how to handle a particular situation, but provide a useful framework for understanding conflicts.

Some of the topics that come up in bioethics include assisted suicide, organ transplantation, end-of-life care, abortion, the definition of consent, genome sequencing, cryonics, life support, transhumanism, psychosurgery, reproductive rights, genetically modified organisms, medical malpractice, gene therapy, animal rights, artificial insemination, artificial life, chimeras, brain-computer interfacing, reproductive and therapeutic cloning, and many others. Besides just focusing on present-day bioethical issues, bioethicists also look to the near-term future, when advances in biology and medicine will open up many more ethical questions. Some bioethicists have even proposed that entire avenues of research, such as stem cells and cloning, should be abandoned for the sake of "human dignity."

#### OVERVIEW

The state has established a wide network of the medical institutions. One of them is the polyclinic. Many specialists, such as therapists, surgeons, neurologists, gynecologists and others work here. At the medical examination a physician examines the patient, listens to the patient's heart and lungs, palpates the abdominal parts, feels the pulse, and measures blood pressure. The doctor makes the diagnosis and prescribes proper treatment to every patient. The laboratory analyses help to make a correct diagnosis and administer proper treatment. In addition to the consulting hours at the polyclinic local physician goes out to the calls to examine those patients who are seriously ill. Any local physician knows his patients very well because he/she treats a definite number of patients.

#### LESSON 10

#### MEDICAL EXAMINATION

#### VOCABULARY

**scarlet fever** [*ˈskɑːlɪt ˈfɛvə*] скарлатина

**measles** [*ˈmiːzlz*] кір

**quinsy** [*ˈkwɪnzɪ*] ангіна

**influenza** [*ˈɪnfluˈenzə*] грип

**pneumonia** [*ˈnjuːmənɪə*] пневмонія

**bronchitis** [*ˈbrɒŋkaɪtɪs*] бронхіт

**weakness** [*ˈwiːknɪs*] слабкість

**sore throat** [*ˈsɔː ˈtɹoʊt*] хворе горло

**swallow** [*ˈswɒləʊ*] ковтати

**tongue** [*ˈtʌŋ*] язик

**phlegm** [*ˈfleɪm*] мокротиння, мокрота

**tonsil** [*ˈtɒnsəl*] мигдальовидна залоза

**breathe** [*ˈbrɪːð*] дихати

**take temperature** [*ˈtemperə ˈtʃeɪ*] вимірювати температуру

**strip to the waist** [*ˈweɪst*] роздягнутися до пояса

**swollen** [*ˈswɒləʊn*] запалений; підпухлий

**murmur** [*ˈmɜːmɜː*] шуми в серці

**feel a pain** [ˈfiːl a ˈpeɪn] відчувати біль  
**complaint** [kəmˈpleɪnt] скарга  
**complain of** [kəmˈpleɪn əv] скаржитись на  
**trouble** [ˈtrʌbl] турбувати  
**cough** [kɒf] кашель  
**headache** [ˈhedʒək] головний біль  
**nasal discharge** [ˈnæzəl dɪʒɑːʒ] виділення з носа, нежить  
**cause** [kɔːz] причина; підстава; спричиняти, викликати

**be coated** [ˈkəʊtəd] бути обкладеним  
**dilate** [dɪˈleɪt] розширювати  
**notice** [ˈnɒtɪs] відзначати, помічати  
**medicine** [ˈmedɪsn] ліки  
**rales** [ˈreɪlz] хрипи  
**border** [ˈbɔːdər] межа  
**coach** [kəʊtʃ] кушетка  
**liver** [ˈlɪvər] печінка

### RULES OF READING

wa	[ə]	was want
wa + r	[ɔː]	warm
wo + r	[ɔː]	work word
igh	[aɪ]	high light

#### Ex. 1. Read the following words:

Water, wash; warm, ward, warning; word-combination, world, crossword; fight, right, might, tight.

### WORD-BUILDING

#### Ex. 2. Familiarize yourself with the following material:

##### Suffixes of Noun:

- algia (pain)
- ia, -iasis (condition, process)
- ian (specialist)

#### Ex. 3. Read and translate the following words:

- A. Neuralgia; arthralgia; otalgia.
- B. Pneumonia; hernia; anaesthesia; leukemia; diphtheria; malaria; hyperglycemia; anemia.
- C. Physician; pediatrician; obstetrician; technician.

### GRAMMAR:

#### SIMPLE TENSES

##### (Interrogative Form, Active Voice)

#### Ex. 4. Put the questions to the following sentences:

1. I complain of a headache. 2. He had a high temperature. 3. My throat troubles me. 4. They feel pain on swallowing. 5. Her heart troubles her. 6. John fell ill three days ago. 7. The patient noticed weakness and headache. 8. The patient feels a pain in his abdomen. 9. The physician will examine your lungs.

#### Ex. 5. Read the following grammar material:

### IMPERATIVE MOOD

Stand up!	Встаньте!
Don't be late!	Не запізнуйтеся!
Do write to me.	Будь ласка, пишіть мені!
Let us read this text once more.	Давайте прочитаємо цей текст ще раз.
Let them do it now.	Хай вони зроблять це зараз!



**Ex. 6. Read and translate the following sentences:**

1. Listen to me attentively. 2. Order this drug in the pharmacy. 3. Take this medicine a teaspoonful twice a day before meals. 4. Take these tablets one every three hours. 5. Apply mustard plasters every day before going to bed. 6. Take warm tea with the raspberry jam. 7. Gargle your throat several times a day. 8. Make the analyses of blood and urine. 9. Start external cardiac massage immediately! 10. Take patient's temperature at 12 o'clock today and give him this drug. 11. Give me the case reports which are on the professor's table.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 7. Read VOCABULARY and memorize new words.**

**Ex. 8. Compose 5-6 sentences using the words of the VOCABULARY**

**Ex. 9. Insert the missing letters and translate the following words:**

Swol\_en; mu\_mur; dil\_te; l\_ver; r\_les; lun\_; h\_art; tempera\_ure; tong\_e; bre\_the; pres\_ure; scarlet f\_ver; t\_roat; complai\_t; disc\_arge; haedac\_e; coug\_; tr\_uble.

**Ex. 10. Translate the following words and word-combinations into Ukrainian:**

1. **to breathe**; to breathe heavily [*h'ev'f'f'*]; to breath with difficulty; to breathe deeply; to breathe in; to breathe in oxygen [*'Oks'f'f'(q)n'*]; to breathe out; to breathe out carbon dioxide [*'ka:bqn da'f'Oksa'f'd'*]; a breath [*br'e'f'*].

2. **cough**; dry cough; moist cough; a painful cough; to complain of cough; a cough remedy; to suffer from cough.

**Ex. 11. Read the following words:**

Cough; discharge; breathe; through; high; temperature; else; trouble; sore; throat; swallowing; headache; weakness; measles; mouth; tonsil; rales; cause; phlegm; dilate; murmur; coach; abdomen.

**Ex. 12. Read the following dialogue:**

**AT THE THERAPEUTIST'S**

**Doctor:** What do you complain of?

**Patient:** I have a bad cough.

D: Do you have a nasal discharge (runny nose)?

P: Yes, I do.

D: Is it difficult for you to breathe through the nose?

P: Yes, it is.

D: Do you have a high temperature?

P: Yes, I do.

D: Did you have a sudden rise in temperature to 38-39° C?

P: Yes, I did.

D: What else troubles you?

P: I have a sore throat.

D: Do you often have a sore throat?

P: No, I don't.

D: Do you feel pain on swallowing?

P: No, I don't.

D: What about your headache?

P: I have a headache.

D: Does your heart trouble you?

P: Yes, it does.

D: Do you have any other complaints?

P: No, I have not.

D: When did you fall ill?  
P: I fell ill three days ago.  
D: What first symptoms did you notice?  
P: Weakness and headache.  
D: Did you take any medicine?  
P: No, I did not.  
D: What diseases did you have in your childhood?  
P: I had scarlet fever and measles.  
D.: I'll examine you. First of all take your temperature, please.  
P.: All right.  
D.: Your temperature is 37.8° C. Open your mouth and say "Ah", please. Your tongue is thickly coated and your tonsils are swollen and red. Now strip to the waist, please. I'll examine your lungs. Breathe more deeply. Hold your breath. There are rales in your lungs. Does deep breathing cause pain?  
P.: Yes, it does.  
D.: How long have you been coughing?  
P.: About three days.  
D.: Do you bring up phlegm? (Чи у Вас виділяється мокротиння?)  
P.: No, I don't.  
D: Turn round, please. I'll listen to your heart. The borders of your heart are dilated and there is a murmur in your heart. Do you have pain near your heart?  
P: No, I don't  
D.: Let me palpate you now. Lie down on the couch. I'll check your liver. Do you feel any pain in your abdomen?  
P: No, I don't.  
D: Now you may stand up. Dress and sit down. Let me measure your blood pressure. It is normal. I'll give you an analysis form for blood count (urinalysis, stool test).

**Ex. 13. Translate the following words and word-combinations into English:**

Скаржитися на; сильний кашель; дихати носом; різке підвищення температури до; турбувати; біль при ковтанні; захворіти; слабкість; скарлатина; кір; язик дуже обкладений; викликати біль; межі серця збільшені; шуми; аналіз крові; затримувати дихання.

**Ex. 14. Translate the dialogue "At the Therapist's" into Ukrainian.**

**Ex. 15. Note how the doctor starts the interview:**

What's brought you along today?  
What seems to be the problem?  
What is wrong with you?  
What can I do for you?

**Ex. 16. Ask the question and answer them using the expressions of the following table:**

Do you have	any troubles? any complaints? a bad cough? a sore throat? a nasal discharge? (a runny nose?) a headache? a high temperature? a pain on swallowing? heart troubles?	I have	a bad cough. a sore throat. a headache. a high temperature. a runny nose [rʌnɪŋˈnuːz] (нежить). a pain on swallowing. heart troubles.
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**Ex. 26. Reproduce the dialogue "At the Therapist's" in pairs.**

**Ex. 27. Practise this dialogue. You can select replies from the list (1-5) below:**

**Cardiologist:** Let me measure your blood pressure.

**Mr. Peters:** Is it normal?

**C.:** No, it isn't. Your blood pressure is quite high (1). Is anyone in your family with high blood pressure?

**P.:** My father (2) had it four years. He did have a stroke a few years ago (3). That won't happen to me, will it?

**C.:** No. Let's finish the rest of the examination. I'll listen to your heart. Breathe in... Breathe out... Hold it... Breathe away (4). Say ninety-nine.

**P.:** Ninety-nine.

**C.:** A couple of times more.

**P.:** Ninety-nine, ninety-nine, ninety-nine...

**C.:** Good. We'll have a look at that blood pressure again.

**P.:** How is it now?

**C.:** Still high (5).

**P.:** What are you going to do for me?

**C.:** Check your blood and urine. Then we'll send you up to the hospital for a chest X-ray and a cardiogram.

(1) normal; low; quite low.

(2) uncle; grandmother; aunt.

(3) five years ago; last year; some years ago.

(4) Now would you turn on your left side, please; Lie right out; Sit up again; Lean forward; Breathe quietly through your mouth.

(5) Still low.

**Ex. 28. Reproduce the similar dialogue:**

**Doctor:** Where is the pain?

**Patient:** It is in the abdomen. I can hardly bear the pain.

**D.:** Is it sharp?

**P.:** Yes, it's cutting.

**D.:** Where does the pain radiate to? To which side, upwards or downwards?

**P.:** It hurts inside...

**D.:** Is this first attack of pain?

**P.:** No. I felt the same pain a few weeks ago, but it stopped quickly. I didn't send for the doctor then.

**D.:** In what body position do you feel pain the most?

**P.:** When I'm on my back.

**D.:** All right, you'll be admitted for the treatment to the municipal hospital. The ambulance will bring you to the emergency room.

**hardly** ледве

**bear** витримувати

**sharp** гострий, різкий

**cutting** ріжучий

**upwards** вгору

**NOTES**

**hurt** хворіти, боліти

**municipal** міський

**ambulance** машина швидкої допомоги

**bring** доставляти

**OVERVIEW**

Doctor: What do you complain of?

Patient: I have a bad cough and a runny nose.

D: What about your headache?

P: I have a headache.

D: Does your heart trouble you?

P: Yes, it does.

D: Did you take any medicine?

P: No, I did not.

D: Take your temperature, please. What is your temperature?

P: My temperature is 37.8°.

D: Show me your throat. Your tongue is coated and your tonsils are red. Now strip to the waist, please. I'll examine your heart and lungs. Breathe deeply. Don't breathe. There are rales in your lungs. The borders of your heart are dilated and there is a murmur in your heart. Let me measure your blood pressure. It is normal.

## LESSON 11 HOSPITAL

### RULES OF READING

Letters	Sounds	Examples	Notes
ck	[k]	black	
ch	[tʃ]	chain	
ch	[k]	chemistry	у словах грецького походження
sh	[ʃ]	she	

#### Ex. 1. Read the following words:

Block; chickenpox; sick; neck; thick; lack; attack; ticket; rich; chest; itching; touch; chemist's shop; headache; stomach; establishment; shoulder; publish; shape.

### WORD-BUILDING

#### Ex. 2. Familiarize yourself with the following material:

##### Suffix of Noun:

-itis (inflammation)

bronchitis – *бронхит*

#### Ex. 3. Read and translate the following words:

Encephalitis, meningitis, poliomyelitis, appendicitis, cholecystitis, viral gastroenteritis, peritonitis, bronchiolitis, dermatitis; arthritis.

### GRAMMAR:

#### Ex. 4. Familiarize yourself with the following grammar material:

##### OPEN CONDITIONALS

**If** is used without any special tenses when you want to suggest that something is true. Some people call this the "zero conditional".

*If you are ill in Britain, you go to see your general practitioner.*

**If** is also used when we want to suggest that a future situation is likely or possible. In the *if*-clause the present tense is generally used to talk about the future. Some people call this the "first conditional".

*If you need medicine, your general practitioner will write a prescription for you.*

*If you eat well, you'll probably have a longer and healthier life.*

**Unless** is sometimes used to mean **if not**.

*You will probably have to pay part of the cost of your medicine, unless you belong to one of the groups of people who get their medicine free.*

**Ex. 5. Translate the following sentences:**

1. If a person falls ill, he/she will call in a doctor. 2. When his/her condition isn't poor, he/she will go to the local polyclinic. 3. If it is necessary, a nurse will come to the patient's house and give administered injections. 4. If the patient has appendicitis or cholecystitis, he/she will be in the surgical department.

**Ex. 6. Match the first half of each sentence on the left with an appropriate ending on the right:**

- |                              |   |
|------------------------------|---|
| 1. If the weather is fine,   | wait outside until I arrive.              |
| 2. If you are nervous,       | you have to practice.                     |
| 3. If you get hungry,        | take some deep breaths to relax yourself. |
| 4. If you want to play well, | there is some cheese in the fridge.       |

**Ex. 7. Put the verbs in brackets into the correct tense-forms:**

1. I (be) very sad if I (not see) you next week. 2. Unless they (work) harder, they (fail) their exams. 3. If you (need) to have medical tests, your doctor (send) you to a hospital.

**Ex. 8. Familiarize yourself with the data of the following table:****NUMERAL**

2	two
15	fifteen
80	eighty
1 <sup>st</sup>	first
17 <sup>th</sup>	seventeenth
20 <sup>th</sup>	twentieth
58	fifty-eight
131	one hundred and thirty-one
302	three hundred and two
1,001	a (one) thousand and one
3,544	three thousand five hundred and forty-four
1941 (date)	nineteen forty-one
1905 (date)	nineteen hundred and five (nineteen o five)
1/2	a half (one half)
1/25	a (one) twenty-fifth
3/4	three-fourths
0.2	o point two (point two)
0.02	o point o two (point zero two)
1.5	one point five
23.34	two five point three four

**Ex. 9. Read the following numerals:**

3; 17; 92; 7<sup>th</sup>; 5<sup>th</sup>; 18<sup>th</sup>; 36; 100; 105; 134; 1,749; 5, 363; 1999 (date); 2137 (date); 2/3; 7/8; 0.3; 0.36; 7.8; 57.93.

**VOCABULARY**

**conveniences** [kɔn'vɛnjənsɪz] зручності

**ward** [wɔ:d] палата

**suffer (from)** [sʌfə] хворіти, страждати

**operating theatre (-room)** [ɒpə'reɪtɪv] операційна

операційна

**staffed bed** [stɔ:fɛd] лікарняне ліжко

**hernia** [hɛrniə] грижа

**cholecystectomy** [kɔlə'stɪs'tektəmi] видалення

жовчного міхура

**vagotomy** [və'gɔtəmi] розсікання блукаючого

нерва

**laparotomy** [ləpə'rɔtəmi] лапаротомія,

череворозтин

**heart trouble** [hɑ:t'trʌbl] біль у серці

**gastric** [*'gestrɪk*] шлунковий, що стосується шлунку

**duodenal** [*'dʒuːdɪˈnɑːl*] дуоденальний, що стосується дванадцятипалої кишки

**ulcer** [*'ʌlsə*] язва

**cholecystitis** [*'kɒlɪsʃɪs'taɪtɪs*] холецистит, запалення жовчного міхура

**stomach** [*'stʌmk*] шлунок

**wound** [*wuːnd*] рана

**breathlessness** [*'breɪθləsnəs*] задишка

**weakness** [*'wiːknəs*] слабкість

**vomiting** [*'vɒmɪtɪŋ*] блювання

**nausea** [*'nɔːsjə*] нудота

**injection** [*ɪn'ɪksjən*] ін'єкція

**mustard plasters** [*'mʌstəd'plɑːstəz*] гірчичники

**appendectomy** [*æpən'dektəmɪ*] апендектомія

## READING AND DEVELOPING SPEAKING SKILLS

**Ex. 10. Read the following words paying attention to their pronunciation. Translate these words into Ukrainian:**

Intramuscular [*'ɪntrə'mʌskjʊlə*]; intravenous [*'ɪntrə'veɪnəs*]; appendicitis [*'æpən'dɪsɪtɪs*]; anaesthesia [*ˌænə'stɪə:zjə*]; nephritis [*ne'frɪtɪs*]; myocarditis [*'maɪəkə'daɪtɪs*]; pneumonia [*nju'məʊnjə*]; bronchitis [*brɒn'kʌɪtɪs*]; asthma [*'æsmə*]; colitis [*kə'lɪtɪs*]; compress [*kəm'prɛs*]; stomach [*'stʌmk*].

**Ex. 11. Insert the missing letters:**

Wa\_d; n\_usea; we\_kness; ul\_er; hern\_a; su\_ure; steril\_zing; m\_stard plasters; gastrit\_s; v\_miting; breat\_lessness.

**Ex. 12. Read the following words:**

Regional; surgical; cardiological; pulmonological; gastroenterological; ward; temperature; intramuscular; intravenous; apply; mustard plaster; compress; measure; appendicitis; hernia; duodenal; ulcer; cholecystitis; appendectomy; vagotomy; stomach; thorax; thoracic; anaesthesia; anaesthetist; definite; diet; wound; injection; myocarditis; pericarditis; cardiosclerosis; breathlessness; weakness; pneumonia; bronchitis; asthma; cough; gastritis; colitis; vomiting; nausea.

**Ex. 13. Read and translate the following text:**

### HOSPITAL

The state has established the wide network of the medical institutions. One of them is the regional hospital. It is multistory building with all modern conveniences. There are some departments in this hospital. One can see surgical, cardiological, pulmonological, gastroenterological and other departments.

There are many light and cozy wards in each department. In every ward one can see some beds, bed-side tables and chairs. Each department houses approximately 50 patients.

The work at the hospital begins early. First of all the nurses take the patients' temperature and fulfill the doctor's prescriptions. If it is necessary, they give intramuscular and intravenous injections, cup the patients, apply mustard plasters, make compresses, and give the prescribed medicines.

Every day the doctors make the morning round. They examine the patients, listen to the heart and lungs, palpate the abdominal parts, feel the pulse, and measure blood pressure. They make the diagnosis and prescribe proper treatment to every patient. I should like to note that our physicians and nurses pay much attention to the treatment of the patients.

A surgical department houses 65 staffed beds. There are large and small wards and a large, light operating theatre here.

In this department there are patients with surgical diseases, such as: appendicitis, hernia, gastric and duodenal ulcers, cholecystitis and others.

The most common operations are appendectomy, vagotomy, stomach resection, cholecystectomy and operations on the thorax and thoracic organs. The operations are performed under general or local anaesthesia. The anaesthetist gives the patient anaesthesia and when the patient falls asleep the surgeon begins to perform the operation. The assistant and surgical nurses help the surgeon during the operation. They give the necessary surgical instruments and control the patient's condition.

After the operation special attention is paid to the postoperative condition of the patient. The surgeon prescribes a proper treatment and definite diet. Every day the surgeon makes the morning round, and examines the patients. The nurse takes the patient's temperature, dresses the wounds, gives injections, and fulfills the doctor's prescriptions.

The work in the surgical department is rather difficult but very important.

In the cardiological department one can see patients with heart diseases, such as: myocarditis, pericarditis, cardiosclerosis and others. The patients have heart troubles, breathlessness, weakness and other symptoms. The doctors and nurses pay much attention to these patients.

In the pulmonological department there are patients with lung diseases and disorders of the respiratory tract. They suffer from pneumonia, bronchitis, asthma and others. The patients complain of a bad cough, high temperature, and headache.

In the gastroenterological department you can find the patients with abdominal diseases. They have gastritis, colitis, ulcer and others. The patients feel pain in the stomach, weakness, and sometimes they have nausea and vomiting. The doctors use different methods of treatment of these patients and pay much attention to them.

**Ex. 14. Translate the following words and word-combinations into English:**

Зручності; палата; вміщати, розміщувати; хворіти, страждати; ставити діагноз; ставити банки; операційна; лікарняне ліжко; грижа; шлунковий; дуоденальний, такий, що стосується дванадцятипалої кишки; виразка; холецистит, запалення жовчного міхура; видалення жовчного міхура; перев'язка блукаючого нерва; лапаротомія, рана; біль у серці; слабкість; блювота; нудота; медсестра; внутрішньом'язовий; внутрішньовенний; ін'єкція; гірчичники; компрес; кров'яний тиск; апендектомія; апендицит; анестезія; міокардит; перикардит; пневмонія; бронхіт; астма; коліт.

**Ex. 15. Make up the sentences using the data of the following tables:**

In the	therapeutic	department	there are	patients with	the diseases of inner organs.
	surgical		one can see		abdominal diseases.
	cardiological		one can find		surgical diseases.
	pulmonological		you can see		heart diseases.
	gastroenterological		you can find		lung diseases.

This patient	has complains of	a high temperature.
		a bad cough.
		a headache.
		a heart trouble.
		a breathlessness.
		a weakness.
		a vomiting.
		a nausea.
a sore throat.		



They	are ill with	nephritis.
These patients	suffer from	appendicitis.
	have	hernia.
		gastric ulcer.
		duodenal ulcer.
		cholecystitis.
		myocarditis.
		pericarditis.
		cardiosclerosis.
		pneumonia.
		bronchitis.
		asthma.
		gastritis.
		colitis.

The doctor	makes the morning round.
The therapist	examines the patients.
	listens to the heart.
The surgeon	listens to the lungs.
	palpates the abdominal parts.
The anaesthetist	feels the pulse.
	checks blood pressure.
	makes the diagnosis.
	prescribes the treatment.
	performs the operation.
	gives anaesthesia.
	pays much attention to the treatment of the patients.

The nurse	takes the patient's temperature.
	fulfills the doctor's prescriptions.
The surgeon's assistant	gives intramuscular injections.
	gives intravenous injections.
The surgical nurse	cups the patients.
	makes compresses.
	applies mustard plasters.
	gives the prescribed medicines.
	helps the surgeon during the operation.
	gives the necessary surgical instruments.
	controls the patient's condition.
	dresses the wounds.

**Ex. 16. Speak on the work of medical specialists in different departments.**

**Ex. 17. Put the verbs in brackets into correct tense-forms:**

1. This hospital (to be) new and modern. 2. These hospitals (to be) multistory buildings. 3. It (to have) all modern conveniences. 4. This department (to house) sixty patients. 5. This patient (to suffer) from many diseases. 6. These patients (to suffer) from duodenal ulcer. 7. He (to be ill) with bronchitis last year. 8. These doctors (to listen) to the patient's lungs. 9. Yesterday they (to perform) on very difficult operation. 10. Next week he (to advice) a new treatment of this disease. 11. The doctor (to fill) in case histories last week. 12. The nurse (to take) the patients' temperature, (to fulfill) the doctor's prescriptions, (to give) intramuscular and intravenous injections, and (to make)

compresses. 13. He (to measure) her blood pressure, (to look) at the tonsils and (to feel) her pulse.

**Ex. 18. Answer the questions:**

1. What is the hospital? 2. What departments are there in the regional hospital? 3. How many staffed beds does each department house? 4. What can one see in every ward? 5. What do the doctors do every day? 6. What do the nurses do at the hospital? 7. What diseases do the patients of the surgical department have? 8. What diseases do the patients of the cardiological department have? What do they complain of? 9. What diseases do the patients of pulmonological department suffer from? What are the symptoms of these diseases? 10. What diseases do the patients of the gastroenterological department have?

**Ex. 19. Translate the following sentences into English:**

**You may use the following phrases:** He/She suffers from ... . He/She has ... . He/She is ill with ... .

1. Цей чоловік хворіє на пневмонію. Він скаржиться на сильний біль у грудях, кашель і загальну слабкість. 2. У цієї жінки міокардит. У неї болі в ділянці серця. Вона скаржиться на загальну слабкість і задишку. 3. Ці пацієнти страждають на виразку шлунку. Вони відчувають біль у шлунку, загальну слабкість. У них буває нудота або блювання. 4. У цього чоловіка часто буває нудота і він відчуває біль у шлунку після їжі. 5. У хірургічному відділенні можна бачити хворих, які мають різні хірургічні хвороби. 6. Цей хворий страждає на грижу. 7. Цей чоловік має виразку дванадцятипалої кишки, а той страждає на апендицит.

**Ex. 20. Speak on the regional hospital.**

**Ex. 21. Use this structure to respond to the following questions:**

*Example:* What was the patient's temperature on admission to the hospital?

*Prompt:* It was 39°C.

*Response:* On admission to the hospital the patient's temperature was 39°C.

1. What colour was the patient's skin? (pallid) 2. What was the patient's respiration rate? (25 per minute) 3. What was the patient's pulse rate? (140 per minute) 4. What was the patient's diagnosis? (pericarditis) 5. What was the patient's arterial pressure? (140/90)

**Ex. 22. Pronounce and memorize the words to the theme studied:**

**Recently admitted** [ˈrɪːsntɪdɪd] щойно доставлений; **muscular** [ˈmʌskjʊlə] м'язовий; **physical findings** фізикальні дані; **rheumatic** [ruːˈmætɪk] ревматичний; **impression** враження; **follicular tonsillitis** [fɒlɪkjʊlə] фолікулярний тонзиліт; **history of case** (case report) історія хвороби; **limb** [lɪm] кінцівка.

**Ex. 23. Read the following dialogue:**

**Medical Student:** Where are the recently admitted patients, if you please?

**Nurse:** You probably mean the son of our nurse and a little girl, don't you?

**M.S.:** Yes, you are right.

**N.:** Our nurse's boy is in the third ward and the girl is in the seventh.

**M.S.:** What's the matter with them?

**N.:** We admitted the boy to the hospital last night because of severe pains.

**M.S.:** What does he complain of?

**N.:** He complains of muscular pains in his back and limbs and he has a high temperature.

**M.S.:** And what else does he complain of?

**N.:** He complains of a bad headache.

**M.S.:** And what are the physical findings?

**N.:** Nothing significant. He has no symptoms in the lungs.

**M.S.:** What is the impression of the attending doctor?

**N.:** The doctor says that he cannot explain the whole clinical picture without laboratory and X-ray findings, but he thinks that the boy has rheumatic pains.

**M.S.:** Any previous rheumatic findings?

**N.:** No.

**M.S.:** I have one more question about the pains. Are they severe?

**N.:** Yes.

**M.S.:** And what troubles the girl?

**N.:** She is ill with follicular tonsillitis. The temperature of the girl is almost normal now. It is a mild case.

**M.S.:** Where are the patients' histories of the cases?

**N.:** They are on the table of the attending doctor.

**Ex. 24. Answer the following questions:**

1. Who are the recently admitted patients? 2. What is the matter with the boy? 3. What does he complain of? 4. Are the pains severe? 5. What else does he complain of? 6. What are the physical findings? 7. What is the impression of the attending doctor? 8. What is the matter with the girl? 9. Is she dangerous ill? 10. Is follicular tonsillitis an infectious disease? 11. What is the temperature of the girl?

**Ex. 25. Insert the missing prepositions (in, on, at, for, of):**

1. The comfortable ward is \_ four patients. 2. The case report \_ patient Vilkova is \_ the table \_ the ward doctor. 3. The history \_ the case \_ patient Popova is \_ the table \_ the right window.

**Ex. 26. Translate the following sentences into English:**

1. Хворий, котрий щойно поступив до лікарні, скаржитья на головний біль та сильні м'язові болі. 2. Лікар-куратор говорить, що у дівчинки ревматичні болі. 3. Чи фолікулярний тонзиліт небезпечний для життя?

**Ex. 27. Compose short dialogue using the following word-combinations:**

to admit a patient; what's the matter with; to complain of; else; physical findings; history of the case.

**OVERVIEW**

One can see surgical, cardiological, pulmonological, gastroenterological and other departments in the regional hospital. Working at the hospital the nurses take the patients' temperature and fulfill the doctor's prescriptions. They give intramuscular and intravenous injections, apply mustard plasters, make compresses, and give the prescribed medicines. The doctors examine the patients, make the diagnosis and prescribe proper treatment to every patient. There are large and small wards and a large operating theatre in a surgical department. In this department there are patients with surgical diseases, such as: appendicitis, hernia, gastric and duodenal ulcers, cholecystitis and others. In the cardiological department one can see patients with heart diseases, such as: myocarditis, pericarditis, cardiosclerosis and others. The patients have heart troubles, breathlessness, weakness and other symptoms. In the pulmonological department there are patients with lung diseases. They suffer from pneumonia, bronchitis, asthma and others. The patients complain of a bad cough, high temperature, and headache. In the gastroenterological department you can find the patients with abdominal diseases. They have gastritis, colitis, ulcer and others. The patients feel pain in the stomach, weakness and sometimes they have nausea and vomiting. The doctors use different methods of treatment of these patients and pay much attention to them.

**LESSON 12**

**TREATMENT OF THE PATIENT**

**VOCABULARY**

**make analyses** [*q'nɔksɪz*] робити аналізи

**take medicine** [*medsɪn*] приймати ліки

**take electrocardiogram** [tʰeɪktrə'kɑ:di'ɔ:grɑ:m] робити електрокардіограму  
**stay in bed** [steɪ] знаходитись у ліжку, дотримуватись постільного режиму  
**drug** [drʌg] ліки, лікарський препарат

**gargle a throat** [gɑ:gl'θrɔ:t] полоскати горло  
**apply** [ə'plʌɪ] ставити  
**indicate** [ɪn'dɪkeɪt] вказувати; означати  
**fulfil** [fʌl'fɪl] виконувати  
**X-ray** [eks'reɪ] рентген

### RULES OF READING CONSONANTS (ПРИГОЛОСНІ)

Letters	Sounds	Examples
kn	[n]	know
tch	[tʃ]	catch
th	[ð]	this
th	[θ]	thick

**Ex. 1. Read the following words:**

Knee; knowledge; knife; stretch; match; itchy; catch; watch; something; through; think; health; pathological; therapist; that; them; further; without.

### WORD-BUILDING

**Ex. 2. Familiarize yourself with the following material:**

**Suffixes of Noun:**

**-(i)ty** (denotes condition or phenomena)  
 abnormality – патологія

**-ness** (denotes condition or phenomena)  
 correct *правильний* – correctness *привильність*  
 hopeless *безнадійний* – hopelessness *безнадійність*

**Ex. 3. Read and translate the following words:**

- A.** Ability; activity; reality; humanity; possibility; integrity; majority; severity.
- B.** Weakness; illness; dryness; breathlessness; thickness; effectiveness; heaviness.

### GRAMMAR:

**Ex. 4. Read the following grammar material:**

#### PARTICIPLE II (V<sub>3</sub>)

Infinitive	Participle II
deliver	delivered
treat	treated
say	said
make	made
take	taken

**Ex. 5. Form Participles II from the following infinitives:**

- A.** locate, call, connect, examine, remember, love, need, graduate, include, obtain;
- B.** begin, come, give, know, see, feel, give, go, cut, do, find, send, sleep, speak, write.

**Ex. 6. Read the following examples:**

1. <b>Measured</b> blood pressure was very high.	1. Виміряний кров'яний тиск був дуже високий.
2. Blood pressure <b>measured</b> was high.	2. Виміряний кров'яний тиск був високим.
3. Blood pressure <b>measured</b> by the doctor was high.	3. Кров'яний тиск, виміряний лікарем, був високим.

**Ex. 7. Read and translate the following sentences:**

1. Prescribed medicine is useful for this patient. 2. The operation performed under general anaesthesia was very complex. 3. Injured leg hurts very badly. 4. The examined patient was seriously ill. 5. All drugs taken from the chemist's shop must be returned. 6. The problems discussed at the conference are very important for cardiologists. 7. Our scientists know about great successes achieved by them. 8. One of the greatest contributions to the world science made by V. Vorobyov was "Atlas on Human Anatomy". 9. Young specialist graduated from the Medical University works as intern. 10. The patient directed to make blood analyses had gripe.

**Ex. 8. Translate the sentences containing Participles II into Ukrainian:**

1. O.M. Shumlyansky described the kidney texture. 2. The outstanding Ukrainian anatomist V.P. Vorobyov born in Odesa finished gymnasium. 3. He improved his education in the field of obstetrics and received his doctor's degree. 4. The Institute of Eye Diseases named after V.P. Filatov in Odesa is one of the largest clinics in Ukraine. 5. A new school built for poor children was very popular in 19<sup>th</sup> century. 6. O. Bohomolets graduated from the medical faculty was a director of the Institute of Hematology and Transfusion.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 9. Read VOCABULARY and memorize new words.**

**Ex. 10. Compose 3-4 sentences using the words of VOCABULARY.**

**Ex. 11. Insert the missing letters and translate the following words into Ukrainian:**

Fu\_fill; ele\_trocardiogram; gar\_le; med\_cine; thro\_t; anal\_sis; dru\_; indi\_ate; ap\_ly.

**Ex. 12. Read the following words:**

Pneumonia; listen; teaspoonful; meals; mixture; cough; prescription; tablets; headache; apply; mustard; raspberry; gargle; throat; blood; urine; should; X-ray; vitamins.

**Ex. 13. Translate the following words and word-combinations into Ukrainian:**

1. **drug**; a drug for a headache; to take the drug three times a day; to order the drug; overdosage of the drug.  
2. **to indicate**; to indicate the dose on the label; labels indicate the dose to be taken; indication; the operation was not indicated.

**Ex. 14. Read and translate the dialogue:**

**AT THE PHYSICIAN'S**

**Doctor:** I suppose you have pneumonia.

**Patient:** What must I do?

**D.:** Listen to me attentively. Order this drug in the pharmacy. Take it a teaspoonful twice a day before meals. This mixture is for your cough. The dose to be taken is indicated in the prescription. These tablets are for your headache. Take these tablets one every three hours. This preparation is usually well tolerated.

**P.:** May I stay in my bed?

**D.:** You have to stay in bed. Apply mustard plasters every day before going to bed. Take warm tea with the raspberry jam. Gargle your throat several times a day. You must make the analyses of blood and urine. Your lungs should be X-rayed. Besides you must have an ECG taken.

**P.:** Well, doctor. I'll fulfil all your prescriptions.

**D.:** You will feel better soon. You should not smoke at present. Try to sleep more. Don't walk much. Eat food rich in vitamins.

**Ex. 15. Read and translate the following sentences:**

1. First of all I shall prescribe you some drugs. 2. This mixture is for your cough. 3. I'll put you on a sick-leave. 4. Gargle your throat several times a day. 5. Apply mustard plasters on your back. 6. Your lungs should be X-rayed. Stay in your bed for some days. 7. These tablets are for a headache. 8. This powder is for a pain in your stomach. 9. These drops are for your heart troubles. 10. Take this drug three times a day before (after) meals.

**Ex. 16. Insert the missing words:**

1. I'll \_ you the treatment. 2. These drops \_ \_ bad cough. 3. This mixture \_ \_ a pain in your abdomen. 4. These tablets \_ \_ a headache.

**Ex. 17. Translate the following word-combinations and sentences into English:**

**A.** замовляти ліки; приймати ліки по чайній ложці; після їжі; це ліки від кашлю; ці пігулки від головного болю; ставити гірчичники; полоскати горло; робити аналізи; робити рентген; робити електрокардіограму серця.

**B.** 1. Ваше серце і легені треба перевірити. 2. Зробіть електрокардіограму. 3. Зробіть аналізи крові й сечі. 4. Підійдіть до хірурга і перевірте суглоби.

**Ex. 18. Match the following abbreviations and their meaning:**

ECG	General Practitioner
O/E	afternoon
BP	morning
a.m.	three days
3/52	electrocardiogram
3/7	pulse
P	before meals
a.c.	blood pressure
BWt	birth weight
CBC	complete blood count
c/o	on examination
CXR	chest X-ray
GC	general condition
GP	complaints of
p.m.	three weeks
T	temperature

**Ex. 19. Imagine that your patient has pneumonia (bronchitis, virus infection, quinsy). Prescribe him/her proper treatment.**

**Ex. 20. Reproduce the dialogue "At the Physician's" in pairs.**

**Ex. 21. Read this short dialogue:**

**Doctor:** Well, Mrs Black. What's brought you along today?

**Patient:** *I've got a bad dose of flu.* (1)

**D.:** How long has it been bothering you?

**P.:** *Two or three days.* (2)

**Ex. 22. Practice this dialogue. Your partner should play the part of the patient. He/She can select replies from list (1) and (2) below:**

(1)  
terrible constipation  
swollen ankles

(2)  
since Tuesday  
a fortnight

a pain in my stomach

for almost a month

**Ex. 23. Read the following dialogue:**

**Doctor:** Which part of your head (chest, back) is affected?

**Patient:** Just here.

**D.:** Can you describe the pain?

**P.:** It is *a dull sort of ache*. (1)

**Ex. 24. Practice this dialogue. Your partner should play the part of the patient. He/She can select replies from list below (1):**

(1): a feeling of pressure; very sore, like a knife; a burning pain.

**Ex. 25. Read and translate the following sentences:**

1. The patient is a 26-year-old woman complaining of swelling of the ankles.
2. The patient is a 32-year-old man with headaches, sore throat, and enlarged glands in the neck.
3. The patient is a 42-year-old woman complaining of nausea and episodes of pain in the right part of the chest.
4. Pregnancy test is negative. Chest X-ray is normal. Pulse is normal. The liver is not enlarged.
5. Both ankles, the left elbow and the right wrist are swollen and painful.

**Ex. 26. The form below is used to measure mental impairment. Discuss with a partner:**

**1. in what order you might ask these questions; 2. in what form you might ask them:**

MENTAL IMPAIRMENT MEASUREMENT	
<b>Date of test</b> _____	
<i>Score 1 for a correct answer, 0 for an error.</i>	
	SCORE
1. What is the name of this place?	_____
2. What day of the week is it today?	_____
3. What month is it?	_____
4. What year is it?	_____
5. What age are you? (allow $\pm 1$ year error)	_____
6. In what year were you born?	_____
7. In what month is your birthday?	_____
8. What time is it? (allow $\pm 1$ hour error)	_____
9. How long have you been here? (allow 25% error)	_____
	Total score _____
<b>Significance of score</b>	
8 or 9: No significant impairment	
5 to 7: Moderate impairment	
1 to 4: Severe impairment	
0: Complete failure	
<b>Signature of examiner</b> _____	

**Ex. 27. Read the following dialogue and translate it:**

**Alex:** Did the doctor diagnose your case?

**John:** Yes, he did. He told that I had pneumonia.

**Alex:** What did he prescribe?

**John:** He wrote out a prescription for penicillin injections and gave me some pills for headache and some mixture for cough.

**Alex:** Did you follow the doctor's instructions?

**John:** Certainly. The nurse came for injections in due time. The doctor called on me every other day for a week's time.

**Alex:** And when did you feel better?

**John:** In ten days I felt much better.

**Alex:** Did you go to the polyclinic for a check-up?

**John:** I went to our district doctor's consulting-room. He examined me most thoroughly. I was X-rayed.

**Alex:** So now there is nothing to worry about, I suppose.

**John:** Yes, I am again fit for study and work.

**Ex. 28. Reproduce the similar dialogue.**

**Ex. 29. Read and translate the following case history:**

**Patient:** M.O. Romashov.

**Age:** 47.

**Sex:** Male

**Occupation:** Lawyer.

**Family status:** Married.

**Family history:** Wife and two children are living and well; father is living and well; mother died: the result of a street accident.

**Past history:** Measles, scarlet fever, and pneumonia in childhood; two ribs fractured: the result of a war wound; neither drinks nor smokes.

**Present complaints:** A severe pain in the abdomen (the right iliac region); nausea and vomiting; temperature 39°C.

**Duration:** Two days.

**Diagnosis:** Acute appendicitis.

**Ex. 30. Make up a dialogue using the following data:**

**The patient:** (age; sex; occupation).

**Present complaint:** A stinging (гострый) pain in the pharynx due to the bone.

**Cause:** A bone in the pharynx due to too rapid eating.

**Symptoms:** A stinging pain, especially when swallowing: Precise location of the foreign body.

**Examination:** Pressure on the tongue with a spoon reveals the bone sticking in the tonsil.

**Diagnosis:** A foreign body in the pharynx.

**Treatment:** An attempt to remove it with the finger. Extraction of the bone with a forceps or other similar instrument.

**Ex. 31. Answer the following questions and make up a short case history:**

1. Who is your patient? 2. How old is he (she)? 3. What symptoms does he (she) have? 4. What does he (she) complain of? 5. What is his (her) temperature? 6. Does he (she) have any pains? 7. Where are those pains? 8. Does he (she) need an urgent operation? 9. Are there any signs or symptoms of infection? 10. Is there any danger to life? 11. Was the onset of the disease sudden? 12. What is your diagnosis? What are your recommendations?

In two or three days:

1. What is your patient's temperature now? 2. Is there any change in the course of his (her) disease? 3. Has he (she) any complaints? 4. Does his (her) condition continue to improve? 5. Is there any action of the drug? 6. What are the possible effects of the disease?

**Ex. 32. Read the following text and retell it:**

**FIRST AID**



First aid is the provision of initial care for an illness or injury. It is usually performed by a non-expert person to a sick or injured person until definitive medical treatment can be accessed. Certain self-limiting illnesses or minor injuries may not require further medical care past the first aid intervention. It generally consists of a series of simple and in some cases, potentially life-saving techniques that an individual can be trained to perform with minimal equipment.

The key aims of first aid can be summarized in three key points:

Preserve life – the overriding aim of all medical care, including first aid, is to save lives.

Prevent further harm – also sometimes called prevent the condition from worsening, this covers both external factors, such as moving a patient away from any cause of harm, and applying first aid techniques to prevent worsening of the condition, such as applying pressure to stop a bleed becoming dangerous.

Promote recovery – first aid also involves trying to start the recovery process from the illness or injury, and in some cases might involve completing a treatment, such as in the case of applying a plaster to a small wound.

First aid training also involves the prevention of initial injury and responder safety, and the treatment phases.

### OVERVIEW

I suppose you have pneumonia. Order this drug in the pharmacy. Take it a teaspoonful twice a day before meals. This mixture is for your cough. These tablets are for your headache. Take these tablets one every three hours. You have to stay in bed. Apply mustard plasters every day before going to bed. Gargle your throat several times a day. You must make the analyses of blood and urine. Your lungs should be X-rayed. Besides you must have an ECG taken.

### LESSON 13

#### WORLD HEALTH ORGANIZATION

#### VOCABULARY

**eradicate** [*ɪˈredʒkeɪt*] усувати

**warning** [*wɔːnɪŋ*] застереження

**quarantine** [*ˈkwɔr(ə)ntaɪn*] карантин

**officer** [*ˈɒfɪsə*] службовець, член правління

**station** [*ˈsteɪʃ(ə)n*] назначати

**headquarter** [*ˈhedˈkwɔːtə*] головний офіс

**Geneva** [*ˈʒɛnɪːvə*] Женева

**mortality** [*mɔːtəliːti*] смертність

**morbidity** [*mɔːbɪdɪti*] захворюваність

**disability** [*ˈdɪsəˈbɪlɪti*] інвалідність

**promote** [*prɒˈmɒt*] сприяти, допомагати, підтримувати

**framing** [*ˈfreɪmɪŋ*] створення

#### RULES OF READING

ph	[f]	physics
ng	[ŋ]	long

#### Ex. 1. Read the following words:

Pharmacology, physiology, physician; pharmacy; typhus; lymph; phagocyte; pharynx; esophagus; lung; young; whooping.

#### GRAMMAR:

#### Ex. 2. Familiarize yourself with the data of the following table:

#### MODAL VERBS

Present	Past	Future
can	could	-
may	might	-
must	-	-

#### Ex. 3. Read and translate the following sentences:

1. Taking the wrong medicines or inappropriate combinations of medicines can be dangerous. 2. All medicines you can buy at the chemist's shop. 3. The University has sport complex, where students can attend sections of tennis, volleyball, etc. 4. The health care system could not function without nurses or other professionals. 5. I couldn't come because I fell ill. 6. The patient may be treated in out-patient department. 7. They may be grouped into three categories. 8. The patient must be isolated. 9. The individual must continue this treatment for the rest of his or her life.

**Ex. 4. Complete what the doctor says using *must* and verbs *drink, take, stay, and continue*. Use each verb only once.**

Mrs. Woods, your temperature is a little high, so you \_\_ in bed for the next few days. You can eat whatever you like, but you \_\_ plenty of liquids. And I'll give you some medicine. You \_\_ it three times a day after meals. And you \_\_ to take it for the next ten days.

**Ex. 5. Put sentences negative as in a model.**

**MODEL:** You **must** be home by 10 o'clock. You **needn't be (mustn't be)** home by 10 o'clock. You **can** do it. You **can't** do it. He **may** smoke here. He **may not** smoke here.

1. I've got a terrible pain in my back. I must go and see a doctor. 2. You can borrow my camera if you want to. 3. He may be here at any moment. 4. They must work better to pass their exams. 5. My little niece Lizzie can already walk. 6. He may take any information available to make his report in time. 7. We can stay a bit longer.

**Ex. 6. Make the following sentences interrogative according to the following model:**

**MODEL:**

We **must** have deep knowledge of Anatomy and Physiology. **Must** we have deep knowledge of Anatomy and Physiology?

1. These students can continue their education. 2. The rest of the students can work as nurses. 3. Muscle names may also refer to the size of the muscle. 4. Certain factors may be mentioned as causes for perforation. 5. You must read clearly so that other students may understand you well.

**Ex. 7. Familiarize yourself with the data of the following table:**

**EQUIVALENTS OF THE MODAL VERBS**

MODAL VERB	EQUIVALENTS		
	Present	Past	Future
<b>can</b>	<b>to be able to</b>		
	am able to is able to are able to	was able to were able to	shall be able to will be able to
<b>may</b>	<b>to be allowed to</b>		
	am allowed to is allowed to are allowed to	was allowed to were allowed to	shall be allowed to will be allowed to
<b>must</b>	<b>to have to (треба)</b>		
	have to has to	had to	shall have to will have to
	<b>to be to (повинен)</b>		
	am to is to are to	was to were to	shall be to will be to

**Ex. 8. Read and translate the following sentences:**

1. The physician is able to perform a physical examination. 2. The hospitals will be able to provide services for all medical needs. 3. Certain chemicals and viruses were able to play a great role. 4. The person has to avoid lack of sleep or excess alcohol. 5. The surgeon had to perform on the operation. 6. This nurse was able to care for the patients well. 7. The surgeon is allowed to complete the operation. 8. The student has to attend all the lectures regularly. 9. You are allowed to take your temperature. 10. Persons with heart diseases are not to work hard.

**Ex. 9. Complete the sentences using modal verbs or their equivalents in proper tense forms.**

1. They were talking quite loudly. I \_ hear everything they said. 2. You'll \_ to go shopping later today. 3. You \_ get a visa to visit the United States. 4. I \_ stay in bed yesterday because I wasn't very well. 5. Annie will \_ do her home work tomorrow. 6. \_ I invite you to the party? 7. You \_ buy this medicine. 8. They will \_ to come here later.

**Ex. 10. Translate the sentences into English:**

1. Містер Паркер – досить відомий фахівець, ви могли чути про нього раніше. 2. Мері повинна була краще підготуватися до іспиту. 3. Дзвенить дзвінок, ми можемо спізнитися. 4. Вона зможе допомогти вам купити усі необхідні ліки. 5. Ви повинні уважно вислухати усі скарги пацієнта. 6. Ви можете скористатися нашою базою даних. 7. Ці студенти зможуть бути присутніми (їм дозволили) на операції. 8. Ти можеш придбати бинт, вату та йод у будь-якій аптеці. 9. Ці ліки можуть викликати сонливість (drowsiness), нудоту. 11. Ці заходи зможуть попередити розвиток певних інфекційних захворювань.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 11. Insert the missing letters and translate the following words:**

disab\_lity; wa\_ning; mor\_idity; respo\_d; eradi\_ate; mo\_bidity; pro\_ote; quar\_ntine; sta\_ion.

**Ex. 12. Read the following words:**

Ratified; except; Liechtenstein; physical; merely; infirmity; strengthening; improving; supply; effort; raise; plague, cholera; smallpox; typhus; fever; viral; influenza; poliomyelitis; quarantine; measures, staff; headquarter; Geneva; environment.

**Ex. 13. Translate the following word-combinations and sentences into Ukrainian:**

1. control; to control disease; to control the pain; to control vision; to control the process.  
2. improve; to improve the health state; the improving of water supply.  
3. include; to include general subjects; the examination includes some stages; this organization includes Ukraine as a member.

**Ex. 14. Read the following text:**

**WORLD HEALTH ORGANIZATION**

World Health Organization (WHO) was founded in April 7, 1948 when twenty-six United Nations member states, including Ukraine, ratified its Constitution. Now there are 192 member states, including all United Nations Member States except Liechtenstein.

WHO's objective is the attainment by all peoples of the highest possible level of health. Health is defined in WHO's Constitution as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. WHO activities has many forms, they are: strengthening national health services; preparing more and better health workers; controlling or eradicating epidemic diseases; protecting mother and child health; improving sanitation and water supply; and making all other efforts to raise health level.

One of the main services carried by WHO is the service of epidemic warnings. The five main world epidemics of history as plague, cholera, smallpox, typhus, and yellow fever are still a great danger in our time. WHO also informs national health services about outbreaks of viral diseases as influenza and poliomyelitis.

Besides an epidemic information WHO provides services, which are needed by all the countries, such as an international quarantine measures, world health statistics, international standardization of medicines and vaccines, and development of medical research.

The daily work of WHO is carried out by a medical and administrative staff of about 2.400 international officers from different countries. These officers are stationed at headquarters in Geneva, in Regional Offices, or with special centers working on every continent.

WHO's work is focused on four interrelated strategic directions. **Strategic Direction 1:** reducing excess mortality, morbidity, and disability. **Strategic Direction 2:** promoting healthy lifestyles and reducing risk factors to human health. **Strategic Direction 3:** developing health systems. **Strategic Direction 4:** framing an enabling policy and creating an institutional environment for the health sector.

**Ex. 15. Find in the text the derivatives of the following words and translate them into Ukrainian:**

to attain; to strength; to radicate; break; national; to develop; to relate; ability; style.

**Ex. 16. Translate the text "WHO" into Ukrainian.**

**Ex. 17. Insert the missing prepositions (in, of, to, by):**

1. World Health Organization (WHO) was founded \_ April 7, 1948. 2. WHO's objective is the attainment by all peoples \_ the highest possible level of health. 3. Health is defined \_ WHO's Constitution as a state of complete physical, mental and social well-being. 4. WHO prepares more and better health workers; controls epidemic diseases; protects mother and child health; and makes all other efforts \_ raise health level. 5. One of the main services carried \_ WHO is the service of epidemic warnings. 6. The five main world epidemics of history are still a great danger \_ our time. 7. WHO also informs national health services about outbreaks \_ viral diseases as influenza and poliomyelitis.

**Ex. 18. Answer the following questions:**

1. When was WHO founded? 2. How many United Nations member states did it include? 3. What is the major objective of WHO? 4. How is health defined in WHO's Constitution? 5. What are the forms of WHO activities? 6. What do you know about epidemic warnings? 7. What services does WHO provide? 8. Can you characterize WHO's strategic directions?

**Ex. 19. Look through the text "WHO" once more, divide it into logical parts, and entitle them.**

**Ex. 20. Write the key sentences out of the text "WHO".**

**Ex. 21. Be ready to discuss the following topics:**

**WHO's objective;**

Fight against world epidemics;

Strategic Directions.

## **OVERVIEW**

World Health Organization (WHO) was founded in 1948. Now there are 192 member states. WHO's objective is the attainment by all peoples of the highest possible level of health. One of the main services carried by WHO is the service of epidemic warnings. WHO also provides an international quarantine measures, world health statistics, international standardization of medicines and vaccines, and development of medical research. The daily work of WHO is carried out by a medical and administrative staff of about 2,400 international officers from different countries.

WHO's work is focused on four interrelated strategic directions: reducing excess mortality, morbidity and disability; promoting healthy lifestyles; developing health systems; framing an enabling policy.

**LESSON 14**  
**REVISION**

**TEST**

**I. Insert the missing words:**

1. Our \_ year \_ in September and is over in June.  
A. studying; began  
B. academic; begins  
C. academic; begin
2. Students \_ different practical \_ in medicine.  
A. acquires; knowledge  
B. get; skill  
C. acquire; skills
3. Doctors \_ the diagnosis and \_ proper treatment to every patient.  
A. does; prescribe  
B. makes; write  
C. make; prescribe
4. The main \_ of medicine is to \_ the people's health.  
A. topic; do  
B. task; care of  
C. reason; make
5. The therapist \_ to the patient's heart and lungs, palpates abdominal parts, and measures blood \_.  
A. works; analysis  
B. listens; pressure  
C. listens; cells

**II. Finish the following sentences:**

1. During the clinical training the students learn \_.
2. WHO activities has many forms, some of them are \_.
3. In Great Britain most doctors and hospitals are the part of the \_.
4. In the pulmonological department there are patients with lung diseases. They suffer from \_.
5. Your tongue is thickly coated and your tonsils \_.

**III. Choose the proper term given below to the following definitions:**

1. This organization prepares more and better health workers.
  2. It is a very important medical establishment where the people order or buy medicines for their treatment.
  3. In this department the patients complain of their cough, high temperature, headache and others.
- a) chemist's shop; b) nucleaus; c) pulmonological department; d) cell membrane; e) cardiological department; f) skeletal system; g) gastroenterological department; h) World Health Organization; i) muscular tissue; j) endocrine system; k) polyclinic.

**IV. Read and translate one of the following following texts:**

**Text A**

**GALEN**

**(philosopher, physician, discoverer of blood and the cranial nerves)**

This Greek's genius is more certain than his dates. He was born about 129 AD and lived until about 210 AD. During this considerable life span, Galen managed to perform studies that would

long influence medicine. He is still known among other things for his discovery of blood in human arteries and for his dissection of the human cranial nerves, the nerves that supply key areas of the head, face, and upper chest. Galen was the son of Nicon, a well-to-do architect and builder in Pergamum (Asia Minor). He first studied philosophy, one of the traditional fields for a boy of his background. Nicon then had a dream in which Asclepius, the god of healing, told him to permit his son to study medicine. Galen began his medical studies in Pergamum at the age of 16-17. In search of medical knowledge, he then roamed about much of the eastern Mediterranean studying medicine in various cities including Smyrna (now Izmir, Turkey) and Corinth (Greece). He completed his studies at the famous medical school in Alexandria (Egypt). Galen returned to Pergamum and at age 28 was appointed physician to the school of gladiators, a post he occupied for four years and that some say made him the first sports medicine specialist. After that, a career in Rome was in the cards. There he went at age 32 and became a famous and influential physician, taking on cases that no one else could handle. He accompanied the Roman legions of Marcus Aurelius on their campaigns, and served as the personal physician to several emperors. Galen described what he saw (not always the practice of the day). He identified the majority (seven of the twelve) of the cranial nerves.

Galen did experiments such as severing a nerve and observing the effects. He is thus regarded as the founder of experimental physiology. Galen was the first to determine that arteries carried blood and not air! (For over 400 years the Alexandrian school of medicine had taught that arteries are full of air). Galen's theories about the blood circulation, however, were well off the mark and it was not until the 17th century that the great English physician William Harvey would challenge Galen's ideas in this regard. With Hippocrates who preceded him by some 500 years, Galen was preeminent among the most distinguished physicians of antiquity. He knew all of the medical knowledge of his day, gathered it together, and wrote voluminously (and well) about it. Galen summed up the medicine of antiquity.

The writings of Galen were a blessing to the ancient world. But they became a curse when, for more than a millennium, they were held to be the unassailable authority on medicine. This paralyzed the progress of medicine, something Galen would have deplored.

**Text B**

## **HISTORY OF MEDICINE**

### **Ancient Times**

Prehistoric skulls found in Europe and South America indicate that Neolithic man was already able to trephine, or remove disks of bone from, the skull successfully, but whether this delicate operation was performed to release evil spirits or as a surgical procedure is not known. Empirical medicine developed in ancient Egypt, and involved the use of many potent drugs still in use today, such as castor oil, senna, opium, colchicine, and mercury. In spite of their skill in embalming, however, the Egyptians had little knowledge of anatomy.

In Sumerian medicine the Laws of Hammurabi established the first known code of medical ethics, and laid down a fee schedule for specific surgical procedures. In ancient Babylonia, every man considered himself a physician and, according to Herodotus, gave advice freely to the sick man who was willing to exhibit himself to passersby in the public square. The Mosaic Code of the Hebrews indicated concerns with social hygiene and prevention of disease by dietary restrictions and sanitary measures.

Although ancient Chinese medicine was also influenced adversely by the awe felt for the sanctity of the human body, the *Nei Ching*, attributed to the emperor Huang-Ti (2698–2598 B.C.), contains a reference to a theory of the circulation of the blood and the vital function of the heart that suggests familiarity with anatomy. In addition, accurate location of the proper points for the traditional Chinese practice of acupuncture implies some familiarity with the nervous and vascular systems. The Chinese pharmacopoeia was the most extensive of all the older civilizations. The Hindus seem to have been familiar with many surgical procedures, demonstrating skill in such techniques as nose reconstruction (rhinoplasty) and cutting for removal of bladder stones.

In Greek medicine the impetus for the rational approach came largely from the speculations of the pre-Socratic philosophers and such philosopher-scientists as Pythagoras, Democritus, and Empedocles. Hippocrates, the father of Western medicine, taught the prevention of disease through a regimen of diet and exercise; he emphasized careful observation of the patient, the recuperative powers of nature, and a high standard of ethical conduct, as incorporated in the Hippocratic Oath. By the 4th century B.C., Aristotle had already stimulated interest in anatomy by his dissections of animals, and work in the 3d century B.C. on human anatomy and physiology was of such high quality that it was not equaled for fifteen hundred years.

The Romans advanced public health and sanitation through the construction of aqueducts, baths, sewers, and hospitals. The encyclopedic writings of Galen constitute a final synthesis of the medicine of the ancient world. Revered by Arabic and Western physicians alike, his concepts stood virtually unchallenged until the 16th cent. Unfortunately, his prolific researches on anatomy and physiology were not invariably accurate, and reliance on them impeded subsequent progress in anatomy.

### **The Middle Ages**

With the destruction or neglect of the Roman sanitary facilities, there followed a series of local epidemics that culminated many centuries later in the great plague of the 14th century known as the Black Death. During the Middle Ages certain monastic libraries, notably those at Monte Cassino, Bobbio, and St. Gall, preserved a few ancient medical manuscripts, and Arab and Jewish physicians such as Avicenna and Maimonides continued medical investigation.

The first real light on modern medicine in Europe came with the translation of many writings from the Arabic at Salerno, Italy, and through a continuing trade and cultural exchange with Byzantium. By the 13th century there were flourishing medical schools at Montpellier, Paris, Bologna and Padua, the latter being the site of production of the first accurate books on human anatomy. At Padua, Vesalius proved that Galen had made anatomical mistakes. Prominent among those who pursued the new interest in experimental medicine were Paracelsus, Ambroise Paré, and Fabricius, who discovered the valves of the veins.

### **The Birth of Modern Medicine**

In the 17th century William Harvey, using careful experimental methods, demonstrated the circulation of the blood, a concept that met with considerable early resistance. The introduction of quinine marked a triumph over malaria, one of the oldest plagues of mankind. The invention of the compound microscope led to the discovery of minute forms of life, and the discovery of the capillary system of the blood filled the final gap in Harvey's explanation of blood circulation.

In the 18th century the heart drug digitalis was introduced, scurvy was controlled, surgery was transformed into an experimental science, and reforms were instituted in mental institutions. In addition, Edward Jenner introduced vaccination to prevent smallpox, laying the groundwork for the science of immunization.

The 19th century saw the beginnings of modern medicine when Pasteur, Koch, Ehrlich and Semmelweis proved the relationships between germs and disease. Other invaluable developments included the use of disinfection and the consequent improvement in medical, particularly obstetrical, care; the use of inoculation; the introduction of anesthetics in surgery and a revival of better public health and sanitary measures. A significant decline in maternal and infant mortality followed.

### **Modern Medicine**

Medicine in the 20th century received its impetus from Gerhard Domagk who discovered the first antibiotic, sulfanilamide, and the groundbreaking advancements in the use of penicillin. Further progress has been characterized by the rise of chemotherapy, especially the use of new antibiotics; increased understanding of the mechanisms of the immune system and the increased prophylactic use of vaccination; utilization of knowledge of the endocrine system to treat diseases resulting from hormone imbalance, such as the use of insulin to treat diabetes; and increased understanding of nutrition and the role of vitamins in health.

Much medical research is now directed toward such problems as cancer, heart disease, AIDS, reemerging infectious diseases such as tuberculosis and dengue fever, and organ transplantation.

With the surge of general and specialized medical knowledge, the educational requirements of the medical profession have increased. In addition to the four-year medical course and the general hospital internship required almost everywhere, additional years of study in a specialized field are usually required. Similar progress and increased requirements in education are reflected in ancillary professions such as nursing.

#### V. Speak on the following topics:

I am a Medical Student.

Medical University.

Public Health Service in Ukraine and Abroad.

Hospital.

Polyclinic.

Medical Examination.

My Future Profession.

## UNIT 2

### LESSON 15

#### PHARMACEUTICAL PROVISION IN THE HEALTH CARE SYSTEM

#### VOCABULARY

**order** [ˈɔːdɔː] замовляти

**cabinet** [ˈkæbɪnɪt] шафа

**properly** [ˈprɒpərlɪ] відповідним чином,  
відповідно

**moisture** [ˈmɔɪstʃə] волога

**lozenge** [ˈlɒzɪŋdʒ] таблетка

**ointment** [ˈɔɪntmənt] мазь

**drops** [ˈdrɒps] краплі

**syrup** [ˈsɪrəp] сироп

**suppository** [ˌsʊpəˈzɪt(ə)rɪ] супозиторій

**powder** [ˈpaʊdɔː] порошок

**topical** [ˈtɒpɪk(ə)l] місцевий (для місцевого  
застосування)

**indication** [ˈɪndɪˈkeɪʃ(ə)n] показання

**contraindication** [ˈkɒntrɪˈɪndɪˈkeɪʃ(ə)n]  
протипоказання

**side effect** [saɪd ɪˈfekt] побічний ефект

**expiration date** [ˈekspəɪ(ə)ʃ(ə)n ˈdeɪt] дата  
використання

**to be certain** [tə be ˈsɜːtn] бути впевненим

**ensure** [ɪnˈʃʊə] запевняти, гарантувати

**safe** [seɪf] захищений; безпечний

**pregnancy** [ˈpregnənsɪ] вагітність

**breast feeding** [ˈbreɪst ˈfiːdɪŋ] грудне

вигодовування

**medicine chest** [ˈmedɪsɪn ˈtʃest] аптечка

#### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 1. Read VOCABULARY and memorize new words.**

**Ex. 2. Translate the following words and word-combinations into Ukrainian:**

Dosage; overdose; to dose; correct dose; side effect; harmful effect; unwanted effect; healthcare professionals; to indicate; indications; contraindications; to prescribe; prescription; nonprescription medicine; action; interaction; breast milk; breast feeding; safely; safety; safe; newborn child; unborn child.

**Ex. 3. Read the following words and word-combinations:**

Properly; bought; capsule, lozenge; syrup; suppository; powder; dosage; gel; expiration; pharmacist; receive; substance; allergic; unusual; moisture; pregnancy.

**Ex. 4. Read the following text:**

#### CHEMIST'S SHOP



The chemist's shop is one of the medical institutions. All medicines are ordered or bought at a chemist's shop. The state large chemist's shops as a rule have two departments. They are the hand department and prescription one. The medicines are kept in drug cabinets. It is important to store all medicines properly, because heat or moisture may cause the medicine to break down. At the chemist's shop we can buy tablets (lozenges), capsules, ointments, drops, syrups, suppositories, powders, topical solutions, creams, gels, and drugs for intramuscular and intravenous injections.

If you use an over-the-counter (non-prescription) medicine, follow the directions on the label. Every medicine has instruction for using where the indications, contraindications, dosage, side effects, expiration date and others are indicated.

Before a patient leaves the chemist's shop with a medicine, the pharmacist must be certain that he/she has the right medication, correct dose, and directions for use. The pharmacist also has to provide information about how the drug works and side effects and ensure that there are no contraindications to the medicine and no harmful drug-drug, drug-food, or drug-disease interactions. The pharmacist is usually the last healthcare professional to have contact with patients before they receive their medicines. He/She is the final step in a system of checks and balances designed to ensure that medicines are used safely and effectively. So, before you use any medicine, the pharmacist and the doctor have to know:

- if you have ever had an allergic or unusual reaction to any medicine, food, or other substances;
- if you are on a low-salt, low-sugar, or any other special diet;
- if you are pregnant or if you plan to become pregnant. Certain medicines may cause birth defects or other problems in the unborn child. The use of any medicine during pregnancy must be carefully considered;
- if you are breast feeding. Some medicines may pass into the breast milk and cause unwanted effects in the baby;
- if you have any medical problems;
- if you are now taking or have taken any medicines in the past few weeks. Don't forget over-the-counter (non-prescription) medicines such as aspirin, laxatives, and antacids.

**Ex. 5. Translate into English:**

Зберігати медикаменти відповідним чином; рецептурний відділ; безрецептурний відділ; спричиняти небажаний ефект; мати алергію до медикаментів; внутрішньовенна ін'єкція; внутрішньом'язова ін'єкція; ефективно застосувати медикаменти; вказувати відповідне дозування; побічний ефект; медпрацівники; розчин для місцевого застосування; забезпечити відповідною інформацією.

**Ex. 6. Arrange the words with opposite meaning into the pairs:**

Harmful, indication, artificial feeding, final, correct, born, state-owned, breast feeding, incorrect, harmless, unborn, contraindication, private, primary.

**Ex. 7. Translate the text "Chemist's Shop" into Ukrainian.**

**Ex. 8. Complete the following sentences with the given words:**

1. Doctors write a \_ for medicine which chemists or pharmacists make up. (a) certification; b) prescription; c) receipt; d) recipe). 2. A chemist always puts a \_ on a bottle of medicine. (a) label; b) receipt; c) program; d) ticket). 3. All medicines should be \_ out of reach of children. (a) stored; b) taken; c) kept; d) held). 4. It's time to take another \_ of medicine. (a) cup; b) dose; c) drink; d) spoon). 5. The medicine he takes can only \_ the pain. (a) heal; b) remedy; c) relieve; d) solve). 6. The medicine was so \_ that he could restore his health within a few days. (a) effective; b) efficient; c) influential; d) proficient).

**Ex. 9. Divide the following forms of drugs into the three groups (1. taken by mouth; 2. injected into the body; 3. applied to the body surface):**

Capsules; cream; lotion; lozenge; pill; powder; tablet; vaccines; ointment.

**Ex. 10. Answer the following questions:**

1. How many departments are there in the state chemist's shop? What are they? 2. Why are medicines kept in drug cabinets? 3. What forms of medicine can you name? 4. What should you pay a special attention to if you use an over-the-counter (non-prescription) medicine? 5. Prove that the pharmacist is a rather responsible healthcare professional. 6. Are there any relations between the diet and the intake of a certain drug?

**Ex. 11. Fill in blanks with the prepositions:**

1. All medicines we need are ordered or bought \_ a chemist's shop. 2. Certain medicines may cause birth defects or other problems \_ the unborn child. 3. If you use an over-the-counter (non-prescription) medicine, follow the directions \_ the label. 4. The pharmacist is primarily responsible \_ accurately filling prescriptions. 5. The pharmacist also has to provide information \_ how the drug works and side effects.

**Ex. 12. Choose the English equivalents to the Ukrainian ones. Make up the dialogue using the terms and expressions given in the table:**

1. pharmacy on duty	1. Передозування цих ліків викликає несприятливий ефект.
2. prescription	2. Зберігайте ці ліки в прохолодному місці .
3. to write out the prescription	3. Чи ви добре переносите новокаїн?
4. Take this drug three times a day.	4. Необхідна доза вказана в рецепті.
5. This mixture is for the cough.	5. Приймайте ці ліки по чайній (столовій) ложці до (після) їжі.
6. These tablets are for the headache.	6. Рецепт
7. Don't take drugs without a doctor's advice.	7. Ця мікстура від кашлю.
8. The overdose of this drug is causing an side effect.	8. Ці пігулки від головного болю.
9. Are you sensitive to novocain?	9. Чергова аптека
10. This drug reduces blood pressure (relieves toothache, clears the nose).	10. Запивайте ці ліки молоком.
11. The dose to be taken is indicated in the prescription.	11. Виписувати рецепт
12. Keep the drug in a cool place.	12. Ці ліки знижують кров'яний тиск (знімають зубний біль, зменшують нежить).
13. Take this drug a teaspoonful (tablespoonful) before (after) meals.	13. Приймайте ці ліки тричі на день.
14. Take these tablets one every three hours.	14. Не приймайте ліки без призначення лікаря.
15. Take the drug with milk.	15. Приймайте ці пігулки по одній кожні три години.

**Ex. 13. Speak on the pharmaceutical provision and pharmaceutical products, the role of pharmacists.**

**Ex. 14. Read the following words and try to memorize them:**

**Confuse** змішувати, переплутати; **doubt** сумнів, сумніватись; **discard** позбавлятися чогось, викидати; **іpecac** іпекакуана, блювотний корінь; **adhesive** липкий; **bandage** бинт; **gauze** марля; **pad** прокладка; подушечка, валик; **rubbing** натирання; **antacid** засіб для зниження кислотності; **calamine** каламін; **sunscreen** сонцезахисний крем; **flush** виливати, позбавлятися; **outdated** застарілий; **deteriorate** псувати(ся).

**Ex. 15. Read the following text and comment upon it. Try to retell the text.**

**YOUR HOME MEDICINE CHEST**

Keep medicines in their original containers, otherwise you or members of your family may get confused. Taking the wrong medicines or inappropriate combinations of medicines can be dangerous.

If the label gets separated from a medicine container and there is any doubt to its contents, discard the medicine immediately.

A well-equipped medicine chest has the following:

- Pain relievers: aspirin or, for children aspirin substitutes such as acetaminophen;
- Syrup of ipecac: a liquid used to promote vomiting and used in certain kinds of poisoning emergencies;
- Bandages: adhesive strip bandages, adhesive tape and sterile gauze pads, elastic bandages, and surgical bandages;
- Tools, including scissors to cut bandages and tweezers to remove splinters;
- A thermometer including a rectal type thermometer if you have an infant;
- Absorbent cotton and rubbing alcohol;
- Over-the-counter pharmaceuticals, antacids, cough syrup, calamine or other mild lotion for itching, a sunscreen to prevent sunburn, and skin creams or lotions to treat sunburn.

All these things and many others you can buy at the chemist's shop. Remember: flush unused, outdated prescription drugs down the toilet. Medicine deteriorates over the time.

**Ex. 16. Translate the following sentences into English:**

1. Перш ніж приймати ліки, вам слід було уважно прочитати інструкцію. 2. Ви зможете отримати ці ліки наступного дня у рецептурному відділі. 3. Ці ліки повинен виписати ваш дільничний лікар. 4. Лише деякі з цих медичних засобів можна буде взяти у закордонну туристичну подорож (for travelling abroad). 5. Вам слід порадитися з лікарем щодо вживання цих ліків та вашої дієти. 6. Для вашої аптечки вам доведеться купити бинт, вату, йод чи інший спиртовий розчин для дезінфекції, знеболююче та деякі інші ліки. 7. У Великобританії вагітні жінки отримують деякі ліки безкоштовно. 8. Передозування ліків може спричинити серйозні наслідки або навіть смерть. 9. Уважно прочитайте інформацію щодо протипоказань.

**Ex. 17. Read the dialogue and try to act as a pharmacist and a customer:**

**Pharmacist:** Can I help you?

**Customer:** Yes, please. My daughter was coughing quite a bit last night. Can you suggest anything?

**Pharmacist:** How old is your daughter?

**Customer:** She's four.

**Pharmacist:** This is a good children's cough syrup. Give her two teaspoons before she goes to bed. If her cough doesn't clear up in a day or two, you should take her to the doctor.

**Customer:** I will. Thanks.

**Pharmacist:** And here's your prescription.

**Customer:** Are there any special instructions?

**Pharmacist:** They're on the bottle. You have to take it on an empty stomach.

**Customer:** OK. And thanks again.

**Ex. 18. Choose the correct answers:**

**Questions**

What must I do if I don't understand the information on the label?

Where can I find the information?

How long does it take to read the label?

Why is it important to read the label?

When I should read the label?

**Answers**

Reading the label helps you take the medicine correctly.

You should always read the label before you take the medicine.

In the label of the medicine.

It only takes a few minutes.

If you don't understand the information on the label, do not take the medicine. Ask the doctor or pharmacist to help you.

## OVERVIEW

The chemist's shop is one of the medical institutions where the people order or buy medicines for their treatment. The state large chemist's shops as a rule have two departments. They are the hand department and prescription one. At the hand department you can buy some medicines immediately, while many drugs are ordered at the prescription department. At the chemist's shop we can buy tablets (lozenges), capsules, ointments, drops, syrups, suppositories, powders, topical solutions, creams, gels, and drugs for intramuscular and intravenous injections. All the drugs have the labels and instructions for using where the indications, contraindications, dosage, side effects, expiration date and others are indicated. The pharmacist is a healthcare professional who provides information about how the drug works and side effects.

## LESSON 16 DRUGS

### VOCABULARY

**digitalis** [dɪʤɪ'teɪʃz] наперстянка

**foxglove** [fɒksɪ'glv] наперстянка

**mold** [mɒld] пліснява

**route** [ru:t] шлях, напрям

**nonproprietary** [nɒnprɪ'praɪət(ə)rɪ] такий, що не впливає з права власності

**generic** [dʒɪ'nerɪk] непатентований

**coin** [kɔɪn] створювати

**promotion** [prɒ'mɒʃn] рекламування

**completeness** [kəm'plɪ:tnɪs] повнота, завершеність

**suppository** [sʊ'pɒzɪtɔrɪ] супозиторій

**intravenous** [ɪ'ntrɪv'vɛ:nəs] внутрішньовенний

**intrathecal** [ɪ'ntrɪ'teɪkəl] внутрішньооболонковий

**intracavitary** [ɪ'ntrɪ'kævɪtɔrɪ] внутрішньопорожнинний

**aerosol** [ɪ'ɛrɒsəl] аерозоль

**lotion** [lɒʃn] лосьйон

### WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Prefixes and term-elements:**

**re-** (back; again)

to write *писати* – to rewrite *переписувати*

to build *будувати* – to rebuild *збудувати заново; перебудувати*

**Ex. 2. Read and translate the following words:**

Reoperate; regroup; remake; rebuild; recover; remove; recurring; return; reinvasion; reaction.

### GRAMMAR:

**Ex. 3. Familiarize yourself with the data of the following table:**

#### GERUND

Examining is necessary.	Огляд обов'язковий.
He likes her correct <b>diagnosing</b> .	Йому подобається, що вона правильно встановлює діагноз.
The necessary part of the examination is <b>listening</b> the heart.	Необхідна частина огляду – це прослуховування серця.
They support her idea of <b>observing</b> the stomach.	Вони підтримують її ідею щодо обстеження шлунку.
After <b>giving</b> injection the nurse left the ward.	Зробивши ін'єкцію, медсестра вийшла з палати (Після того як ін'єкція була зроблена, медсестра вийшла з палати).
It is impossible to make a diagnosis without <b>palpating</b> the abdominal parts.	Неможливо встановити діагноз без пальпації (не пропальпувавши) органи черевної порожнини.

**Ex. 4. Read and translate the following sentences paying attention to gerunds:**

1. In making examination special attention is paid to the patient's complaints. 2. The physiologists continued investigating the embryo growth. 3. The scientists work on increasing people's longevity. 4. After performing on the operation the surgeon left the operating theatre. 5. This scientist worked out the method of producing the hormones in the laboratory. 6. The surgeon began preparing patient for surgical intervention. 7. They continued listening to the lungs attentively. 8. She sat in the ward without turning her head. 9. Follicle-stimulating hormone is primary responsible for initiating the development of the primary follicles. 10. Other drugs administered in treating atherosclerosis are so-called lipotropic substances. 11. New techniques and medications for detecting and treating glaucoma and cataract have made these two leading causes of blindness (амавроз, сліпота) very treatable. 12. Drug errors (e.g., prescribing an appropriate drug, misreading a prescription, administering a drug incorrectly) can lead to serious complications. 13. Vitamins are the substances, which are necessary for normal body functioning.

## READING AND DEVELOPING SPEAKING SKILLS

**Ex. 5. Read VOCABULARY and memorize new words.**

**Ex. 6. Compose 2-3 sentences using the words of VOCABULARY.**

**Ex. 7. Insert the missing letters and translate the following words:**

Lo\_ion; r\_ute; intrav\_nous; suppos\_tory; m\_ld; a\_rosol; intra\_hecal; intra\_avitary.

**Ex. 8. Read and translate the following words and word-combinations:**

Completeness; promotion; digitalis; nonproprietary; coin; generic; plant; chemical substance; vitamin; manufacturer; brand name; particular; route; duration; buccal [ˈbʊkəl]; mouth; sublingual; tongue; vaginal [ˈvɑːʒɪnəl]; subcutaneous [ˌsʊtkjuːˈteɪʃjəs]; intradermal.

**Ex. 9. Read and comprehend the text:**

### DRUGS: THEIR MAIN CHARACTERISTICS AND FORMS

Everyone knows that medicines, or drugs are chemical substances used to make you feel better when you are sick. These chemical substances can come from many different sources. Drugs are obtained from various parts of plants, such as the roots, leaves, and fruit. Examples of such drugs are digitalis (from the foxglove plant), and antibiotics such as penicillin and streptomycin (from plants called molds). Drugs can also be obtained from animals; for example, hormones are secretions from the glands of animals. Drugs can be made from the chemical substances which are synthesized in the laboratory. Some drugs are contained in food substances; these drugs are called vitamins.

Every drug must have a nonproprietary name, that is, a name that is available for each manufacturer of it to use. These names are commonly called "generic names". Manufacturers often coin brand names to use in promotion of their particular product. In general, brand names are shorter and easier to use than the corresponding generic names.

The route of administration of a drug (how it is introduced into the body) is very important in determining the rate and completeness of its absorption into the bloodstream and speed and duration of the drug's action in the body. There are many routes of drug administration. They are oral administration (by mouth); buccal administration (a medicine is placed in the cheek pocket and slowly absorbed); sublingual administration (for general effects throughout the body, when a medicine is placed under the tongue and slowly absorbed); rectal administration (for local and in some cases systemic effects, when it is used in the rectum); vaginal administration (for local and in some cases systemic effects when used in the vagina); parenteral administration (in the form of injection); inhalation (for local, and in some cases systemic effects, when inhaled into the lungs); and topical application (for local effects, when it is applied directly to the skin).

The dosage forms are the following: tablets, solutions, capsules (for oral administration); suppositories (for rectal administration); subcutaneous, intradermal, intramuscular, intravenous, intrathecal, and intracavitary injections (for parenteral administration); aerosols (for inhalation); lotions, creams, and ointments (for topical application).

**Ex. 10. Translate the following words and word-combinations:**

Внутрішньошкірний; супозиторій; лосьйон; шлях, напрям; внутрішньовенний; створювати; повнота, завершеність; аерозоль; розчин; мазь; дія медичного препарату; призначення.

**Ex. 11. Translate the text “Drugs: Their Main Characteristics and Forms” into Ukrainian.**

**Ex. 12. Speak on the routes of drug administration using the following table:**

**Routes of Drug Administration**

Oral	Sublingual	Rectal	Parenteral	Vaginal	Inhalation	Topical
Tablets Capsules Solutions	Tablets	Suppositories	Injections: Subcutaneous Intradermal Intramuscular Intravenous Intrathecal Intracavitary	Suppositories	Aerosols	Lotions Creams Ointments

**Ex. 13. Answer the following questions:**

1. What is a drug? 2. What are drugs obtained from? 3. What dosage forms do you know? 4. What routes of drug administration are there? 5. What types of injections do you know?

**Ex. 14. Pronounce and memorize the words to the theme studied:**

**Adverse** [ˈædvɜːs] несприятливий, побічний; **refer** [rɪˈfɜː] стосуватися, мати відношення до чогось; **upset** [ˈʌpˈset] порушення, розлад; **benefit** [ˈbenefɪt] перевага; **outweigh** [ˌaʊtˈweɪʃ] бути більш впливовим, поважним; **approve** схвалювати, стверджувати; **evaluate** оцінювати; **trial** [ˈtraɪəl] випробування, дослід.

**Ex. 15. Read the following text and answer the following questions:**

1. What is adverse drug reaction? 2. How to evaluate the safety of a drug? 3. How to avoid any risks of adverse drug reaction or drug poisoning?

**ADVERSE DRUG REACTION**

Adverse drug reaction (ADR, or adverse drug effect) is a broad term referring to unwanted, uncomfortable, or dangerous effects that a drug may have. Some risks are not very serious, like an upset stomach. Others, like liver damage, are more serious. When a medicine's benefits outweigh its known risks, the U.S. Food and Drug Administration (FDA) considers it safe enough to approve. Both prescription and over-the-counter medicines (non-prescription) must be approved before they can be sold in the U.S. The FDA evaluates the safety of a drug by looking at side effects, how it's manufactured, results of animal testing and clinical trials, and more. The FDA also monitors a drug's safety after approval. To reduce the risk of a problem, follow the directions carefully when taking medicines. Make sure that your health care provider knows all of the medicines and supplements you are using. Also, make sure to mention if you are pregnant or nursing. Some medicines can hurt your baby. Make sure that you understand and follow the instructions on taking the drug.

**Ex. 16. Find in the text “Adverse Drug Reaction” the equivalents for the following words and word-combinations:**

Контролювати безпечність ліків; оцінювати безпечність ліків; клінічні дослідження (випробовування); перевага; схвалювати; розлад шлунку; небезпечний вплив; зменшити (скоротити) ризик.

**Ex. 17. Match the definition with the proper terms:**

<p>1. A liquid suspension or dispersion for external application to the body.                  2. A semisolid preparation for external application to the body, and usually containing a medicinal substance.                  3. A medicated solution to be dropped into the conjunctival sac.                  4. A solution of a drug which can be atomized into a fine mist for inhalation therapy.                  5. A medicated mass adapted for introduction into the rectal, vaginal, or urethral orifices of the body; its bases are solid at room temperature but melt or dissolve at body temperature.                  6. A soft, soluble container for enclosing a dose of medicine.                  7. A substance made up of an aggregation (маца) of small particles, as that obtained by the grinding or trituration (подрібнення, перетирання) of a solid drug.</p>	<p>a) tablet                  b) capsule                  c) ear drop                  d) ointment                  e) suppository                  f) powder                  g) lotion                  h) aerosol                  i) eye drop</p>
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**Ex. 18. Complete the following sentences with the words given below:**

1. Please read this leaflet before you start \_ HYTRIN (HI-TRIN). 2. Also read it each time you get a new \_ . 3. HYTRIN is used to \_ hypertension and \_ prostatic hyperplasia in men. 4. HYTRIN works by \_ blood vessels so that the blood passes through them more easily. 5. HYTRIN can cause a sudden drop in blood pressure after the first \_ . 6. \_ HYTRIN and all medicines out of the reach of children.

a) treat; b) contracting, c) keep, d) relieve, e) dose, f) taking, g) relaxing, h) prescription, i) benign.

**Ex. 19. Put the verbs into correct tense forms and translate the following sentences:**

1. (*to take*) two of these capsules three times a day after meals. 2. Barbiturates are drugs, which (*to use*) often in the treatment of emotional disorders. 3. Many herbs (*to know*) for their healing properties. 4. The medicine (*to be*) so effective that he was almost back to normal within a few days. 5. Acetaminophen (*to come*) as a tablet, chewable tablet, capsule, suspension or solution (liquid). 6. Acetaminophen may also (*to use*) in combination with aspirin and caffeine to relieve the pain associated with migraine headache.

**Ex. 20. Make up a plan to the text “Drugs: Their Main Characteristics and Forms”.**

**Ex. 21. Speak on the main characteristics and forms of drugs.**

**Ex. 22. Pronounce and translate the words and word-combinations to the theme studied:**

**Neuropharmacological; neoplastic drugs; blood clotting; to relieve uncomfortable symptoms; antihistamine; analgesic (analgetic)** [ˈænəlʃɪˈdʒesɪk] **анальгетик, анальгезуючий засіб; indigestion** [ˈɪndɪˈdʒesʃən] **порушення травлення; unwanted variation in heart rhythm** [ˈvɒntəˈreɪʃən ɪn ˈhɑːt ˈrɪθəm] **антикоагулянт; речовина, що затримує згортання крові; mood-lifting drug; antifungal** **антигрибковий, протигрибковий; antipyretic** [ˌæntɪˈpraɪrɪtɪk] **жарознижувальний засіб; антипіретик; antiviral** [ˌæntɪˈvaɪrəl] **протівірусний; bronchodilator;**

**asthma** [ˈæsmə]; **suppress** [sɪˈpres] пригнічувати; **hypnotic** [ˈhɪpˈnɒtɪk] снодійне (засіб); **laxative** [læksəˈtɪv] проносне (засіб); **constipation** закріп; **nitrate** [ˈnaɪtreɪt]; **angina** [æŋˈdʒɪnə] стенокардія; **vasodilator** авзодилатор, судинорозширювальне (засіб).

**Ex. 23. Read and translate the following text:**

### DRUG CLASSES

All drugs are grouped into several classes depending on their pharmacological effects on the body, target organs or systems, etc. For example, there is a wide variety of cardiovascular drugs, gastrointestinal drugs, neuropharmacological drugs, antibiotics, neoplastic drugs, hormones, and others.

**Cardiovascular drugs** may be divided into three groups; drugs that affect the heart; drugs that affect blood pressure; and drugs that prevent blood clotting.

There is a wide variety of **gastrointestinal drugs**. They have different pharmacological activities and are used mainly to relieve uncomfortable and potentially dangerous symptoms, rather than as cures for diseases.

**Antibiotics** are chemical substances produced by microorganisms. Antibiotics have been synthesized in the laboratory and are used to treat serious bacterial infections.

**Neuropharmacological** drugs act on the nervous system. There are two major types of neuropharmacological drugs: autonomic and central nervous system drugs.

**Antihistamines** are drugs, which block the action of chemicals called histamines, which are found in the body. Histamine is produced by most cells and especially by sensitive cells under the skin and in the respiratory system. Antihistamines can relieve the allergic symptoms, which histamine produces.

**Vitamins** are necessary for normal body functioning. They play an important role in the metabolic processes of the body.

The other categories into which most of the commonly prescribed medications are divided are the following:

**Analgetics:** pain-relieving drugs;

**Antacids (Antiacids):** drugs used for relief of symptoms of indigestion or disorders caused by excess acid. These medications work to neutralizing stomach acids;

**Antiarrhythmics:** medications used to control unwanted variations in heart rhythms;

**Anticoagulants:** drugs prescribed to prevent blood from clotting;

**Antidepressants:** mood-lifting drugs;

**Antidiabetic agents:** drugs used in the treatment of diabetes. Antidiabetic drugs are used to restore the body's ability to use sugar normally;

**Antifungals:** drugs used to treat infections caused by fungi;

**Antihypertensives:** medications prescribed to reduce high blood pressure;

**Anti-inflammatory** agents: drugs used to reduce inflammation;

**Antipyretics:** fever-reducing drugs. These drugs directly affect the temperature-regulating centre in the brain and the hypothalamus;

**Antivirals:** drugs used to treat viral infections;

**Bronchodilators:** drugs that open (dilate) the main airways (bronchi) in the lungs. They are primarily used to treat asthma;

**Corticosteroids** are used principally as anti-inflammatory drugs;

**Cough suppressants:** they are used to suppress cough;

**Diuretics:** these drugs increase the volume of urine and salt released by the kidneys;

**Hypnotics:** sleeping medications;

**Laxatives:** constipation drugs;

**Nitrates:** heart drugs. They may increase blood flow through the coronary arteries and often are used in patients with angina;

**Vasodilators:** heart drugs. These medications stimulate the arteries of the heart to enlarge. They are used to treat angina pectoris or lower blood pressure.



**Ex. 24. Give proper terms for the definitions:**

1. These drugs, in moderate dose, can suppress the central nervous system and relieve pain but in excessive doses produce unconsciousness, stupor, coma, and possibly death.	a) vasoconstrictors
2. These drugs relax the muscles of vessel walls, thus increasing the size of blood vessels. They are used in treating blood vessels diseases, heart conditions, and high blood pressure.	b) epinephrine
3. These drugs neutralise acid in the stomach, they are often used for peptic ulcer symptoms.	c) antacids
4. They treat diarrhea and decrease rapid movement of bowels (spasms).	d) antibiotics
5. These substances are able to kill microorganisms such as bacteria.	e) narcotics
6. A substance secreted by the medulla of the adrenal gland that stimulates the heart, increased muscular strength and endurance, it is extracted from animal adrenals or prepared synthetically for therapeutic use.	f) vasodilators
	g) antidiarrheals

**Ex. 25. Speak on the main classes of drugs and their forms.**

**Ex. 26. Read the following words and memorize them:**

**Cap** ковпачок, насадка, кришка; **eyelid** повіки; **pouch** мішок; **blink** кліпати; **measure** міряти; **swallow** ковтати; **remove** видаляти; **tilt** нахил; нахилити; **drop** крапля; крапати; **contamination** забруднення; **nostril** ніздря; **tight** щільний; **tip** верхівка, кінчик.

**Ex. 27. Read and translate the following text:**

**PROPER USE OF MEDICINE**

Take medicine exactly as directed, at the right time, and for the full length of time prescribed by the doctor. If you are using over-the-counter (non-prescription) medicine, follow the directions on the label, unless otherwise directed by the doctor. If you feel that the medicine is not working for you, check with the doctor. To avoid mistakes, do not take medicine in the dark. Always read the label before taking, noting especially the expiration date of the contents.

**Oral Medicines.** In general, it is the best to take oral medicines with a full glass of water. However, follow your doctor's or pharmacist's directions. Some medicines should be taken with food while others should be taken on an empty stomach. If you are taking liquid medicines, it is best to use a specially marked measuring spoon or other device to measure each dose accurately. The average household teaspoon may not hold the right amount of liquid. Oral medicine may come in a number of different dosage forms such as tablets, capsules, and liquids. If you have trouble swallowing the dosage form prescribed for you, check with your doctor. There may be another form that would be better for you. If you are taking a long-acting form of medicine, each dose should be swallowed whole. Do not break, crush, or chew before swallowing. Different medicines should never be mixed in one container. Always keep the medicines tightly capped in its original container, when not in use.

**Ophthalmic (Eye) Drops.** How to apply: First, wash hands. Tilt head back and with the index finger, pull lower eyelid away from eye to form a pouch. Drop the medicine into the pouch and gently close eyes. Do not blink. Keep eyes closed for 1 or 2 minutes. Immediately after applying the eye drops, wash hands to remove any medicine that may be on them. To prevent contamination of the eye drops, do not touch the applicator tip to any surface (including the eye) and keep the container tightly closed.

**Nasal Drops.** How to use: Blow nose gently. Tilt head back while standing or sitting up, or lie down on a bed and hang head over the side. Place the drops into each nostril and keep head tilted back for a few minutes to allow medicine to spread throughout the nose. Rinse the dropper with hot water and dry with a clean cloth. Replace the cap right after use. To avoid the spread of infection, do not use the container for more than one person.

**Otic (Ear) Drops.** How to apply: First, wash hands. Lie down or tilt the head so that the ear into which the medicine is to be placed faces up. For adults, gently pull the ear lobe up and back to straighten ear canal (for children, gently pull the ear lobe down and back). Drop medicine into the ear canal. Keep ear facing up for several minutes to allow medicine to run to the bottom of the ear canal. A sterile cotton plug may be gently inserted into the ear opening to prevent the medicine from leaking out. To prevent contamination of the ear drops, do not touch the applicator tip to any surface (including the ear). Do not rinse dropper after use. Wipe the tip of the dropper with a clean tissue and keep the container tightly closed.

**Ex. 28. Translate the following word-combinations into Ukrainian:**

To take medicine; to take oral medicine; to take medicine on an empty stomach; to note expiration date; to measure a dose of liquid medicine; measuring spoon; a tightly capped bottle; to remove the label; eye drops; nasal drops; to take care.

**Ex. 29. Translate the following words and word combinations into English:**

Нахилити голову назад; попередити забруднення; нижні повіки; просушити чистою тканиною; залишатися з заплющеними очима; вказівний палець; уникати поширення інфекції.

**Ex. 30. Complete the following sentences:**

1. Note the \_ date before buying any medicines. 2. Blow \_ gently before spray the medicine into each nostril. 3. Rinse the \_ of the spray bottle with hot water. 4. Do not use the \_ for more than one person. 5. Before placing drops into each nostril \_ head back while standing or sitting up. 6. Go on taking the same drug for the full \_ prescribed by your doctor. 7. The dose to be taken is indicated in the \_ . 8. To avoid overdosage it is important to \_ each dose accurately. 9. Drop the medicine into the \_ and gently close eyes. 10. Different medicines should never be mixed in one \_ .

**Ex. 31. Compose short dialogues on proper use of medicines using the obtained information.**

**OVERVIEW**

Drugs are chemical substances used to make you feel better when you are sick. They are obtained from various parts of plants, animals, or synthesized artificially. Some drugs are contained in food substances. The routes of drug administration are the following: oral administration; buccal administration; sublingual administration; rectal administration; vaginal administration; parenteral administration; inhalation; and topical application. The dosage forms of drugs are: tablets, solutions, capsules; suppositories; subcutaneous, intradermal, intramuscular, intravenous, intrathecal, and intracavitary injections; aerosols; lotions, creams, and ointments. Adverse drug reaction is a term referring to unwanted, uncomfortable, or dangerous effects that a drug may have. Some risks are not very serious, others are more serious. All drugs are grouped into several classes depending on their pharmacological effects on the body, target organs or systems, etc. For example, there are a wide variety of cardiovascular drugs, gastrointestinal drugs, neuropharmacologic drugs, antibiotics, neoplastic drugs, hormones, and others.

**LESSON 17  
VITAMINS**

**VOCABULARY**

**vitamin** [*vɪtəmɪn*; *'vaɪtəmɪn*] ВІТАМІН  
**essential** [*ɪ'senʃ(ə)l*] ІСТОТНИЙ

**food item** [*fəʊdɪtəm*] КОМПОНЕНТ ЇЖІ; ХАРЧОВИЙ  
ОБ'ЄКТ

**diet** [daɪət]/харчування, їжа  
**amount** [aʊnt]/кількість  
**contribute** [kɒn'trɪbjʊt]/сприяти  
**minute** [maɪnju:t]/неістотний, незначний;  
дрібний  
**deficiency** [dɪ'fɪʃ(ə)nsɪ]/брак, дефіцит

**clotting** ['klɒtɪŋ]/згортання  
**pantothenic acid** [ˈpæntəˈθenɪk]/пантотенова  
кислота  
**folic acid** [ˈfɒlɪk]/фолієва кислота  
**assemble** [ə'sembəl]/збирати  
**soluble** [ˈsɒljubl]/розчинний  
**store** [stɔː]/зберігати

### WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Prefixes and term-elements:**

**sub-** (under; partial)

**Ex. 2. Read and translate the following words:**

Subcellular, subunit; subcostal; subdivision; substitute; subset; subtype; subcutaneous; subdivide.

### GRAMMAR:

**Ex. 3. Familiarize yourself with the data of the following table:**

#### FORMS OF GERUND

Form	Active	Passive
<b>Indefinite</b>	<b>Ving</b> (working, writing)	<b>being + V<sub>3</sub></b> (being worked, being written)
<b>Perfect</b>	<b>having + V<sub>3</sub></b> (having worked, having written)	<b>having + been + V<sub>3</sub></b> (having been worked, having been written)

Her bad condition prevented her from **attending** the lecture in Pharmacology. Її погане самопочуття завадило відвідати лекцію з фармакології. **On having examined** the patient the physician made the diagnosis of pneumonia. Після того, як лікар обстежив хворого, він встановив діагноз – пневмонія. He wants **being treated** at this hospital. Він хоче, щоб його лікували в цій лікарні.

**Ex. 4. Read and translate the following sentences paying attention to the forms of gerunds:**

1. They remember having been operated on at this clinic. 2. By having carried out a number of investigations the scientists determined the mechanisms of metabolism. 3. Before performing on surgical intervention the patient must be examined. 4. Treating patients with some disorders of cardiovascular system is necessary at the in-patient department. 5. He remembers having been treated with the aid of antibiotics. 6. The main function of the vitamins is improving patient's general condition. 7. No therapist can make the diagnosis without having examined the patient.

### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 5. Read VOCABULARY and memorize the following words.**

**Ex. 6. Compose 2-3- sentences using the words of VOCABULARY.**

**Ex. 7. Insert the missing letters:**

Sto\_e; assem\_le; vitam\_n; contrib\_te; di\_t; p\_otein; ve\_sel; inte\_tine; destr\_y.

**Ex. 8. Translate the following words and word-combinations into Ukrainian:**

Amount; pantothenic acid; clotting; deficiency; soluble; essential; minute; food item; exist; to be produced; lining of the bronchial tract; need; slightly modified form; remain.

**Ex. 9. Read the following words and word-combinations:**

Diet *[ˈdiːt]*; nutrient; variety; deficiency; substance; carotene *[ˈkærətiːn]*; slightly; modified; heat; soluble *[ˈsɒlɪbəl]*; accumulate; overdose; hypervitaminosis; toxicity.

**Ex. 10. Read the following text:**

**VITAMINS**

Vitamins are substances that are essential in certain chemical transformations in the human body. They help the body process proteins, carbohydrates, and fats. Certain vitamins also contribute to the production of blood cells, hormones, genetic material, and chemicals of the nervous system.

Vitamins exist in minute quantities in food. Most vitamins cannot be produced by the body and must be obtained through the diet. Since no single food item or nutrient class provides all the essential vitamins, it is necessary to eat a variety of foods. For example, vitamin A is needed for the eyes and to keep the linings of the bronchial, urinary, and intestinal tracts healthy; vitamin C is needed for the development of bones, teeth, blood vessels, and other tissues; vitamin K is necessary for blood clotting; and vitamin D is also needed for the development of bones and teeth.

The principal vitamins are: vitamin A, vitamin B<sub>1</sub>, vitamin B<sub>2</sub>, pantothenic acid (part of the B<sub>2</sub> complex), vitamin B<sub>3</sub>, vitamin B<sub>6</sub>, folic acid, vitamin B<sub>12</sub>, vitamin C, vitamin D, vitamin E, vitamin H (often considered part of the B-vitamin group), and vitamin K.

Some vitamins (e.g., vitamin K) are produced by intestinal bacteria, and a few can be formed by the body from substances called provitamins (portions of vitamins that can be assembled or modified by the body into functional vitamins). Carotene is an example of a provitamin that can be modified by the body to form vitamin A. Vitamins are used by the body in their original or slightly modified forms. Once the chemical structure of a vitamin is destroyed, its function is usually lost. The chemical structure of many vitamins is destroyed by heat (e.g., when food is overcooked).

There are two major classes of vitamins: fat soluble and water soluble. Fat-soluble vitamins such as vitamins A, D, E, and K are absorbed from the intestine along with lipids, and some of them can be stored in the body for a long period of time. Because they can be stored, it is possible to accumulate an overdose of these vitamins in the body (hypervitaminosis) to the point of toxicity. Water-soluble vitamins such as the B complex and C are absorbed with water from the intestinal tract and remain in the body only a short time before excreted.

The absence of a specific vitamin in the diet can result in a specific deficiency disease.

**Ex. 11. Translate the following words and word-combinations into English:**

Зберігати; сприяти; живлення, їжа; пантотенова кислота; збирати; кількість; неістотний, незначний; брак, дефіцит; компонент їжі; фолієва кислота; згортання; розчинний.

**Ex. 12. Translate the text “Vitamins” into Ukrainian:**

**Ex. 13. Insert the missing words:**

1. Vitamins are \_ that are essential in certain chemical transformations in the human body. 2. They help the body process \_, carbohydrates, and fats. 3. Most vitamins cannot be produced by the body and must be obtained through the \_. 4. Vitamin A is needed for the eyes and to keep the \_ of the bronchial, urinary, and intestinal tracts healthy; vitamin C is needed for the development of bones, teeth, blood vessels, and other tissues; and vitamin D is also needed for the development of \_ and teeth. 5. Some vitamins are produced by intestinal bacteria, and a few can be formed by the \_ from substances called provitamins. 6. Once the chemical structure of a vitamin is \_, its function is usually lost. 7. There are two major classes of vitamins: \_ -soluble and \_ -soluble. 8. \_-soluble vitamins are vitamins A, D, E, and K. 9. \_-soluble vitamins are the B complex and C.

**Ex. 14. Answer the following questions:** 1. What are vitamins? 2. What is the function of vitamins? 3. What principal vitamins do you know? 4. How are some vitamins produced by the body? 5. In what form are vitamins used by the body? 6. What classes are the vitamins divided into?

**Ex. 15. Insert the prepositions:**

1. Vitamins A and D are stored \_ the liver. 2. Reserves of vitamins A and D may be sufficient \_ 6 months. 3. Vitamins A and D can produce toxic effects when taken \_ excessive amounts. 4. Although it is popularly believed that the water-soluble vitamins are harmless when taken \_ large amounts, this is not always true. 5. Some of the water-soluble vitamins may have strong medicinal effects – good and bad – when taken \_ large amounts. 6. \_ large doses, B vitamin can cause nerve damage.

**Ex. 16. Write out key sentences of the text “Vitamins”.**

**Ex. 17. Make up a plan of the text “Vitamins”.**

**Ex. 18. Give a summary of the text “Vitamins”.**

**Ex. 19. Speak on the vitamins.**

**Ex. 20. Read the following text and entitle it:**

Vitamins are compounds that you must have to growth and health. They are needed in small amounts only and are usually available in the foods that you eat. Vitamin A is necessary for normal growth and health and for healthy eyes and skin. Lack of vitamin A may lead to a rare condition called night blindness (problems seeing in the dark), as well as dry eyes, eye infections, skin problems, and slowed growth. Your physician may treat these problems by prescribing vitamin A for you. Vitamin A is found in various foods including yellow-orange fruits and vegetables; dark green, leafy vegetables; whole milk; and margarine. Vitamin A comes in different forms. The form of vitamin A found in plants is called beta-carotene. Food processing may destroy some of the vitamins. For example freezing may reduce the amount of vitamin A in foods. Vitamin A is stored in the body and taking too much over a period of time can cause poisoning.

Vitamin B<sub>2</sub> (riboflavin) is necessary for normal metabolism. Lack of vitamin B<sub>2</sub> may lead to itching and burning eyes, sensitivity of eyes to light, sore tongue, itching skin on the nose, and sores in the mouth. Vitamin B<sub>2</sub> is found in various foods, including milk and dairy products, fish, meat, green leafy vegetables, and whole grain and enriched cereals and bread.

Vitamin B<sub>12</sub> is necessary for healthy blood. Cyanocobalamin and hydroxocobalamin are man-made forms of vitamin B<sub>12</sub>. Lack of vitamin B<sub>12</sub> may lead to anemia, stomach problems, and nerve damage. Vitamin B<sub>12</sub> is found in various foods, including fish, egg yolk, milk, and fermented cheeses. It is not found in any vegetables.

Vitamin E prevents a chemical reaction called oxidation, which can sometimes result in harmful effects in the human body. Lack of vitamin E is extremely rare, except in people who have a disease in which it is not absorbed into the body. Vitamin E is found in various foods including vegetable oils (corn, soybean), wheat germ, whole-grain cereals, and green leafy vegetables. Vitamin E is stored in the body and taking too much over a period of time may cause harmful effects.

Vitamin K is necessary for normal clotting of the blood. Vitamin K is found in various foods including green leafy vegetables, meat, and dairy products. If you eat a balanced diet containing these foods, you should be getting all the vitamin K you need. Little vitamin K is lost from foods with ordinary cooking. Lack of vitamin K is rare but may lead to problems with blood clotting and increased bleeding. Vitamin K is routinely given to newborn infants to prevent bleeding problems. It is found in spinach, vegetable oils, and cabbage.

Vitamin D is necessary for strong bones and teeth. Lack of vitamin D may lead to a condition called rickets, especially in children, in which bones and teeth are weak. In adults it may cause a condition called osteomalacia, in which calcium is lost from bones so that they become weak. Vitamin D is sometimes used to treat other diseases in which calcium is not used properly by the body. Vitamin D is found naturally only in fish and fish-liver oils. However, it is also found in

other foods such as milk and bread to which it has been added. Cooking does not affect the vitamin D in foods. Vitamin D is sometimes called the “sunshine vitamin” since it is made in the skin when the human is exposed to sunlight. If you eat a balanced diet and get outside in the sunshine, you should be getting all the vitamin D you need.

**Ex. 21. Give a summary of the text (ex. 20).**

**Ex. 22. Try to organize obtained information in the form of the following table:**

Name of vitamin	Conditions caused by lack of vitamin	Products containing vitamin	Functions of vitamin
Vitamin A			
Vitamin B <sub>2</sub>			
Vitamin B <sub>12</sub>			
Vitamin E			
Vitamin K			
Vitamin D			

**Ex. 23. Make up the dialogue using the obtained information (ex. 22).**

**Ex. 24. Read and translate the following words:**

Enhance; ultimately; herring; mackerel; salmon; cereals; interfere; supplement; seizure.

**Ex. 25. Read and translate the following text:**

#### **IMPORTANCE OF VITAMIN D**

Calcium is essential for strong bones, but to enhance the amount of calcium that ultimately reaches your bones you also need vitamin D.

Your body makes vitamin D from two sources – sunlight and food. Most of the vitamin D the body makes starts with the sun. When you are exposed to ultraviolet (UV) light rays, a chemical in the skin is changed into an inactive form of vitamin D.

Butter, eggs, and fatty fish such as herring, mackerel, and salmon naturally contain vitamin D. Other food sources are foods fortified with vitamin D such as milk, margarine, and some breakfast cereals.

The liver and kidneys work to change vitamin D into the active form the body can use. Despite the availability of the sun and vitamin D-rich foods, several factors can interfere with obtaining enough of this essential nutrient:

**Age.** As you get older, your body turns UV rays into vitamin D less efficiently. If you spend limited time outdoors exposed to the sun and don't drink 2 or more cups of milk a day, you may want to consider a supplement. Don't take more than 400 IU (units) of vitamin D a day unless prescribed by your physician.

**Illness.** Kidney or liver disease reduces the ability to change vitamin D into its usable form. Medications such as phenytoin, prescribed for seizure disorders, can also lead to vitamin D deficiency.

Vitamin D is like no other nutrient in that one of the best ways to obtain it has nothing to do with food. Although excessive sun exposure isn't healthful for your skin, a little bit of sun good for your bones.

**Ex. 26. Speak on the importance of vitamin D.**

**Ex. 27. Read the following abstract and memorize it:**

**Myth:** Vitamins provide energy.

**Fact:** Calories from fat, carbohydrate, and protein provide energy. Vitamins don't have calories, so they can't give energy. The myth likely stems from the action of B vitamins. They don't actually provide energy. Yet each of the eight B vitamins plays a critical role in the chemical reactions that release energy from foods.

**Ex. 28. Make up short dialogues using the data of the following table:**

VITAMIN	FAT (F) OR WATER (W) SOLUBLE	SOURCE
vitamin A	F	From provitamin carotene found in yellow and green vegetables; preformed in liver, egg yolk, butter, and milk.
vitamin B <sub>1</sub>	W	Yeast, grains, and milk.
vitamin B <sub>2</sub>	W	Green vegetables, liver, wheat germ, milk, and eggs.
pantothenic acid	W	Liver, yeast, green vegetables, grains, and intestinal bacteria.
vitamin B <sub>3</sub>	W	Fish, liver, red meat, yeast, grains, beans, and nuts.
vitamin B <sub>6</sub>	W	Fish, liver, yeast, tomatoes, and intestinal bacteria.
folic acid	W	Liver, green leafy vegetables, and intestinal bacteria.
vitamin B <sub>12</sub>	W	Liver, red meat, milk, and eggs.
vitamin C	W	Citrus fruit, tomatoes, and green vegetables.
vitamin D	F	Fish liver oil, enriched milk and eggs.
vitamin E	F	Wheat germs, rice oil, grain, and liver.
vitamin K	F	Liver, spinach, vegetable oils, cabbage, and intestinal bacteria.

**OVERVIEW**

Vitamins are substances that are essential in certain chemical transformations in the human body. They help the body process proteins, carbohydrates, and fats. Most vitamins cannot be produced by the body and must be obtained through the diet. Vitamin A is needed for healthy eyes and to keep the linings of the bronchial, urinary, and intestinal tracts healthy; vitamin C is needed for the development of bones, teeth, blood vessels, and other tissues; vitamin K is necessary for blood clotting; and vitamin D is also needed for the development of bones and teeth. Some vitamins are produced by intestinal bacteria, and a few can be formed by the body from substances called provitamins. Once the chemical structure of a vitamin is destroyed, its function is usually lost. There are two major classes of vitamins: fat soluble and water soluble. Fat-soluble vitamins are vitamins A, D, E, and K. Water-soluble vitamins are the B complex and C.

**LESSON 18  
MEDICINAL HERBS**

**VOCABULARY**

**medicinal** [me'dɪsɪnəl] лікарський; цілющий  
**herb** [hɜ:b] трава, рослина  
**seed** [si:d] насіння; зерно  
**bark** [bɜ:k] кора  
**utilize** [ˈju:tɪlaɪz] використовувати, вживати  
**crude drug** [krud] лікарська сировина  
**purge** [pɜ:ʒ] очищати  
**retard** [rɪ'tɜ:d] уповільнювати;  
 затримувати  
**soak** [sɔ:k] просякнути; вимочувати;  
 поглинати(ся)  
**decoction** [dɪ'kɔ:kʃ(ə)n] лікувальний відвар,  
 відвар з лікарських рослин, декокт

**ointment** [ˈɒɪntmənt] мазь  
**tincture** [ˈtɪŋktʃə] настоянка, тинктура  
**steep** [sti:p] настоюватися  
**notify** [ˈnɒtɪfaɪ] сповіщати, повідомляти  
**currently** [ˈkʌr(ə)ntli] зараз, в теперешній час,  
 нині  
**habitat** [ˈhæbɪtət] природне середовище,  
 середовище існування  
**enhance** [ɪn'hæns] зміцнювати, поліпшувати  
**peppermint** [ˈpepəmɪnt] перцева м'ята  
**morning sickness** [ˈmɔ:rnɪŋsɪks] ранкова нудота,  
 ранковий токсикоз вагітних  
**spastic** [ˈspæstɪk] спастичний, спазматичний

**simmer** [ˈsɪmə] варити, не доводячи до кипіння  
**essential oil** [ˈɛsenʃ(ə)l] ефірне масло  
**distil** [dɪstɪl] добувати  
**solvent** [ˈsɒlv(ə)nt] розчинник  
**evaporate** [ˈvæpəreɪt] випаровуватися  
**powdered** [ˈpaʊdəd] порошкоподібний, розмелений в порошок  
**salve** [sɜːlv] цілюща мазь  
**grind** [graɪnd] молоти(ся), перемелювати(ся); розтирати (в порошок)

**dyspepsia** [dɪsˈpepsɪə] розлад травлення, диспепсія  
**enteritis** [ˈentəˈraɪtɪs] ентерит  
**camomile** [ˈkæməmaɪl] ромашка  
**sage** [seɪʒ] шавлія  
**clove** [klɒv] гвоздика  
**caraway** [ˈkærəweɪ] тмин  
**possess** [ˈpɒzəs] мати, володіти  
**carminative** [ˈkɑːmɪnətɪv] вітрогінний засіб  
**cordial** [ˈkɔːdʒəl] стимулюючі ліки або напій  
**hysteria** [hɪsˈtɪrɪə] істерія

## WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Prefixes and term-elements:**

**un-** (no)

known *відомий* – unknown *невідомий*

important *важливий* – unimportant *неважливий*

**Ex. 2. Read and translate the following words:**

Unknown; unimportant; uncomfortable; unpleasant; undress; unwanted; unborn; unusual; unused.

## GRAMMAR:

**Ex. 3. Familiarize yourself with the data of the following table:**

### GERUND CONSTRUCTION

NOUN (or) PRONOUN (Possessive Case)		GERUND
Doctor's  Students'	my	Indefinite (Active): <b>V+ -ing</b> (working; writing)
	his	
	her	Indefinite (Passive): <b>being + V<sub>3</sub></b> (being worked; being written)
	its	
our	Perfect (Active): <b>having + V<sub>3</sub></b> (having worked; having written)	
your		
their	Perfect (Passive): <b>having + been + V<sub>3</sub></b> (having been worked; having been written)	

На початку речення герундіальний комплекс перекладається підрядним реченням із сполучниками "те, що"; "в тому, що": This **doctor's knowing** English well helps him in the work. – Те, що цей лікар добре знає англійський, допомагає йому в роботі.

Після присудка герундіальний комплекс перекладається підрядним реченням із сполучником "що": We know of **his having performed** on this operation well. – Ми знаємо, що він добре провів операцію.

**Ex. 4. Read and translate the following sentences paying attention to Gerund Constructions:**

1. I remember his brother taking medicinal herbs to prevent upper respiratory tract infections. 2. He does not like her using herbs without doctor's advice. 3. They heard of bronchial infection's having depended on many factors. 4. We know of immunologic factors' being a cause of his disease. 5. The infertility's being the problem for many partners is known to everybody. 6. His having been sent to the regional hospital is unexpected for us. 7. They informed of the infectious disease's having led to chronic pneumonia.

## READING AND DEVELOPING SPEAKING SKILLS



**Ex. 5. Read VOCABULARY and memorize the following words.**

**Ex. 6. Compose 2-3- sentences using the words of VOCABULARY.**

**Ex. 7. Insert the missing letters:**

Notif\_; ste\_p; gri\_d; oi\_tment; evap\_rate; es\_ential oil; de\_oction; cr\_de drug; he\_b.

**Ex. 8. Read and translate the following words and word-combinations into Ukrainian:**

Simmer; ointment; purge; crude drug; distil; utilize; seed; retard; bark; decoction; grind; evaporate; steep; currently; tincture; powdered; soak; salve.

**Ex. 9. Read the following text:**

### **MEDICINAL HERBS**

Medicinal herbs have been used for centuries to treat everything from depression to high blood pressure and cancer. Herbs have been the principals if not the only medicines used in many countries. Recently doctors and other medical professionals have started realizing the importance of these medicinal herbs and their potential for treating and curing a wide variety of ailments as an alternative to pharmaceutical drugs and medications.

Medicinal herbs covering a wide range of types of plants are well known to everybody. The parts of the plants used for medicine may be their leaves, flowers, roots, seeds or bark.

Herbs are the source of pharmacologically active substances that effect the living organism. Dr. Varro Tyler, Professor of Pharmacognosy at the Purdue University School of Pharmacy and Pharmacal Sciences, defines herbs as “crude drugs of vegetable origin utilized for tretment of states, often of chronic nature, or to maintain a condition of improved health.”



*Medicinal Herbs*

The early Romans and ancient Egyptians and Indians used herbs for many medicinal purposes. Modern medicine investigates the benefits of herbs through Pharmacognosy – a study of crude forms of plant, animal and mineral medicines.

Medicinal herbs strengthen an organ so that it can heal itself. Some medicinal herbs purge the body of toxins and illnesses, while others build up the immune system, which will help in retarding illness. There are many ways in which herbs can be prepared to be used to medicinal purposes:

#### **Compress**

Soak a cloth in a cool herb solution, then apply directly to the injured area.

#### **Decoction**

Make a tea from the root, seed, berry, or bark of the herb plant. Simmer the tea, do not boil.

#### **Essential Oils**

Oils are distilled from plants. Usually they are mixed with vegetable oil or water and used as an inhalant or tea. Also, they may be used as eyewash, earwash, mouthwash, or used externally for massage, and to treat cuts and abrasions.

#### **Extracts**

Place the herbs in a solvent and soak, allowing the solution to evaporate. This solution is the most effective form of using herbs. The herb extracts are very beneficial in healing. They may be added to juices.

#### **Ointment**

It is a powdered form of an herb added to a salve.

#### **Powder**

The useful part of a herb is ground into a powder and is also used in capsule or tablet form. Capsules and tablets are generally used for certain disorders and should be used no longer than six months.

### **Syrup**

A herb or herbs are added to a form of sugar and then boiled.

### **Tincture**

Usually, most tinctures contain about 20-50% alcohol. Powdered herbs are added to a water/alcohol solution. Tinctures keep for a long period of time and should only be used if severely ill.

### **Tea**

To prepare herb tea, use approximately one to three teaspoons of herbs per cup of boiling water. Leave herbs to steep for at least five minutes, but don't leave for longer than ten minutes. The potency of the herb is destroyed by light. Mild teas may be used daily as tonics and for general health and well-being. Herb teas, usually, may be used over long periods of time.

Before starting any course of medicinal herbs, notify your doctor because they may interact with any medicines you are currently taking.

### **Ex. 10. Translate the following words and word-combinations into English:**

Мазь; лікарська сировина; насіння; уповільнювати, затримувати; кора; використовувати, вживати; очищати; лікувальний відвар, відвар з лікарських рослин, декокт; варити, не доводячи до кипіння; випаровуватися; порошкоподібний; цілюща мазь; молоти(ся), розтирати (у порошок); затримувати; зараз, в даний час.

### **Ex. 11. Translate the text “Medicinal Herbs” into Ukrainian.**

### **Ex. 12. Insert the missing words:**

1. Medicinal \_ have been used for centuries to treat different diseases. 2. Herbs have been the principal \_ used in many countries. 3. The parts of the plants used for medicine may be their leaves, flowers, roots, \_ or \_. 4. Herbs are the source of pharmacologically active substances that effect the \_ organism. 5. There are many ways in which herbs can be prepared to be used to medicinal purposes: compress, \_, essential oil, extract, \_, powder, syrup, \_, and tea.

### **Ex. 13. Answer the following questions:**

1. How long have medicinal herbs been used? 2. What parts of the plants are used for medicine? 3. What is medicinal herb? 4. In what cases are medicinal herbs used? 5. What are the ways in which medicinal herbs can be prepared?

### **Ex. 14. Write out key words of the text “Medicinal Herbs”.**

### **Ex. 15. Speak on the medicinal herbs and the ways in which they can be prepared to be used to medicinal purposes.**

### **Ex. 16. Read and translate the names of the following disorders and illnesses:**

Depression; cancer; influenza; cold; respiratory infection; urogenital infection; bronchial infection; sinusitis; skin inflammation; mouth ulcer; gingivitis; stomatitis; dyspepsia; intestinal colic; gastritis; enteritis; indigestion; stomach ulcer; toothache; hysteria.

### **Ex. 17. Translate the following words and word-combinations into Ukrainian:**

Habitat; cordial; myrrh; peppermint; camomile; caraway; sage; clove; spastic; possess; enhance; strengthen.

### **Ex. 18. Translate the following words and word-combinations into English:**

Природне середовище; рана; укріплювати, покращувати; мірра (ароматична смола); перцева м'ята; запалення шкіри; нудота; спастичний, спазматичний; розлад травлення, диспепсія; ентерит, запалення тонких кишок; ромашка; шавлія; гвоздика; тмин; мати, володіти, розташовувати; зміцнювати тканини порожнини рота; стимулюючі ліки або напій; істерія.

**Ex. 19. Read and translate the following text:**

### THE USING OF MEDICINAL HERBS

#### ECHINACEA



**Habitat:** Echinacea is a wildflower native to North America.

**Uses:** Echinacea had been used to treat infections. It enhances the body's immune system. It is used to treat influenza, colds, upper respiratory tract infections, urogenital infections and other infectious conditions.

#### MYRRH



**Habitat:** is found naturally in Somalia and some regions of the Middle East.

**Uses:** Myrrh is used in tincture form internally for stomach complaints and chest problems, such as bronchial infection. It is used to treat infected wounds; bronchial complaints, sinusitis and minor skin inflammations as well as inflammation of the throat, gums and mouth, including mouth ulcers, gingivitis, and stomatitis.

#### PEPPERMINT



**Habitat:** The plant is found throughout Europe, in moist conditions, along stream banks and in wastelands.

**Uses:** Peppermint acts as an antibacterial agent. It is used to treat morning sickness, nausea, and spastic complaints of the gastrointestinal tract, gallbladder, bile ducts, dyspepsia, intestinal colic, gastritis, and enteritis. It is furthermore used for indigestion and stomach ulcers.

#### CAMOMILE



Camomile acts as both an anti-bacterial and anti-inflammatory agents against the inflammations in the mouth and pharynx. It aids the healing process.

#### SAGE



A native of the Mediterranean Sage is now cultivated world-wide. Sage has a strong anti-bacterial effect and strengthens tissue (gums) in the mouth. It is a common remedy for inflammatory conditions of the mouth and throat.

#### CLOVE



Found in its natural state in many tropical regions of the world, clove is cultivated throughout the world, and is well known for its antiseptic, and anti-bacterial properties. Cloves were commonly used in latter years to fight toothaches.

#### CARAWAY



**Habitat:** Indigenous to parts of Europe, Asia and India. A strange superstition is associated with Caraway, it's said to have powers to keep lovers true among others.

**Uses:** Both fruit and oil possesses aromatic, stimulant and carminative properties. Caraway was widely employed as a cordial, and was recommended in dyspepsia and symptoms attending hysteria and other disorders. Caraway has an anti-microbial effect, and is used to treat inflammation of the mouth and pharynx. The chewing of caraway seeds is a popular way of aiding digestion after a meal.

**Ex. 20. Speak on the use of different medicinal herbs.**

**Ex. 21. Make up a dialogue on medicinal herbs.**

**Ex. 22. Give a summary of the text "The Using of the Medicinal Herbs".**

**Ex. 23. Read the following abstracts and speak on some medicinal herbs:**

**TREATING BY MEDICINAL HERBS**

**ONION**

(Allium Cepa):

The onion can be used as an antibiotic, a cleanser, and an expectorant. It also reduces the levels of blood sugar and cholesterol.

Hot onions are used for colds. They promote sweating and reduce fever. Onion is also used for insect stings and warts. Just apply them raw straight onto the wart or insect bite.



**CABBAGE**

(Brassica Oleracea):

Cabbage's key actions are anti-inflammatory, antibacterial and a liver restorative.

Cabbage (both red and white) is used for many problems including acne, digestive problems and some infections. Also cabbage is good for migraines, water retention, and mastitis. It is also very good for arthritis. Bandage one crushed leaf of cabbage to the arthritic joint.



**TEA**

(Camellia Sinesis):

Tea is an astringent, antioxidant, and an antibacterial.

Tea is used for many problems. Black tea is very good for diarrhea and dysentery. Green tea is known to help prevent tooth decay and to help strengthen the immune system. Green tea is also good for cuts and scrapes. Apply green tea bags directly to the cut or scrape, they will stop the bleeding. Green tea is also good to soothe insect bites. Tea is good for reducing cholesterol and improving digestion.



**CINNAMON**

(Cinnamomum zeylanicum):

Cinnamon is commonly used for digestive and circulatory stimulant.

Cinnamon is sold in sticks or in powder, made from the inner bark of trees. Cinnamon is good for colds and chills. It is also very good for indigestion, colic, and diarrhea.



**LEMON**

(Citrus Limon):

Lemon's key actions are detoxifying and antibacterial.

Lemon is used to boost up the immune system, counters infections and can relieve rheumatic pains. Lemon is also good for neuralgia, however you must apply it externally. For sore throats it is good to gargle with diluted lemon juice.



## NUTMEG

(Myristica Fragrans):

Nutmeg is a carminative and an antispasmodic.

Grated nutmeg soothes digestive upsets and chronic diarrhea. Use the oil in massage rubs for rheumatic pains, muscles strain or during labor.

CAUTION: In high doses nutmeg is hallucinogenic and may cause convulsions.

## OVERVIEW

Medicinal herbs have been used for centuries to treat different diseases. Herbs have been the principal medicines used in many countries. The parts of the plants used for medicine are their leaves, flowers, roots, seeds or bark. Herbs are the source of pharmacologically active substances that effect the living organism. Medicinal herbs are used in the form of compress, decoction, essential oil, extract, ointment, powder, syrup, tincture, and tea. Medicinal herbs are used as medicine to treat influenza, colds, upper respiratory tract infections (Echinacea); bronchial infections, infected wounds, inflammations of the throat, gums, and mouth (Myrrh); morning sickness, nausea, intestinal colic, gastritis (Peppermint); inflammation of the mouth and pharynx (Camomile) and many others.

## LESSON 19 ANTIBIOTICS

### VOCABULARY

**antibiotic** [ˈæntɪˈbaɪəʃtɪk] антибіотик

**inhibit** [ɪnˈhɪbɪt] пригнічувати, стримувати

**protozoan** [ˈprɒtəzəʊn] протозоон

**potent** [ˈpɒt(ə)nt] сильнодіючий; міцний

**mold** [mɒld] пліснява; пліснявий грибок

**own to** [aʊn] визнавати

**bactericidal** [bækˈtɪrɪˈsɪdɪl] бактеріцидний

**streptococcus** (pl. streptococci)

[ˈstreptəˈkɒkəs] стрептокок

**bacteriostatic** [bækˈtɪrɪˈstætɪk]

бактеріостатичний

**topical** [tɒpɪk(ə)l] місцевий, топічний

**range** [reɪnʒ] коливатися

**adverse** [ədˈvɜːs] несприятливий, побічний

### WORD-BUILDING

#### CONVERSION

**Ex. 1. Familiarize yourself with the following material:**

to help *допомогати* – a help *допомога*

**Ex. 2. Read and translate the following words:**

To work – a work; to act – an act; to group – a group; to form – a form; to plan – a plan; to head – a head, to exercise – an exercise.

### GRAMMAR:

**Ex. 3. Read the following sentences with their translations:**

#### CO-ORDINATE CONJUNCTIONS

The ancient Egyptians <b>and</b> ancient Greeks treated different diseases.	Стародавні єгиптяни <b>та</b> греки лікували різноманітні захворювання.
The work is rather difficult <b>but</b> very important.	Робота досить складна, <b>але</b> важлива.
Take this medicine two <b>or</b> three days.	Приймайте ці лікі 2 <b>або</b> 3 дні.
Fractures are defined as <b>either</b> closed <b>or</b> open.	Переломи визначаються <b>або як</b> закриті, <b>або як</b> відкриті.
Type AB blood has <b>neither</b> A <b>nor</b> B antigens.	Четверта група крові не має <b>ні</b> А, <b>ні</b> В антигенів.

**Ex. 4. Read and translate the following sentences into Ukrainian:**

1. Balanced skin is neither oily nor dry. 2. The nerve cells that form the peripheral nervous system are located either within the neural tube or are derived from neural crest cells. 3. The key to treatment is either decreasing the amount of acid present or strengthening the protective lining of the stomach or duodenum. 4. A number of smaller veins empty into either the cardiac veins, the coronary sinus, or directly into the right atrium. 5. All arteries of the systemic circulation are derived either directly or indirectly from the aorta.

**READING AND DEVELOPING SKILLS**

**Ex. 5. Read VOCABULARY and memorize the following words.**

**Ex. 6. Compose 2-3- sentences using the words of VOCABULARY.**

**Ex. 7. Insert the missing letters and translate the following words and word-combinations into Ukrainian:**

Topi\_al; protozo\_n; ran\_e; in\_ibit; bacteri\_idal; bacteriostati\_; m\_ld; adve\_se; p\_tent.

**Ex. 8. Read the following words and word-combinations:**

Antibiotic; substance; microorganism; bacteria; fungi; refer; microbe; excrete; although; isolate; ancient; Chinese; Egyptian; mould; plant; penicillin; multiply; synthesize; pneumonia; tuberculosis; endocarditis.

**Ex. 9. Read the following text:**

**ANTIBIOTICS**

Antibiotic is a chemical substance that inhibits the growth of other microorganisms, such as bacteria, fungi, or protozoans. The term originally referred to any agent with biological activity against living organisms. Now this term is used to refer to substances with anti-bacterial, anti-fungal, or anti-parasitical activity. The effectiveness of antibiotics varies with the location of the infection, the ability of the antibiotic to reach the site of infection, and the ability of the microbe to inactivate or excrete the antibiotic.

Although potent antibiotic compounds for treatment of human diseases caused by bacteria were not isolated and identified until the twentieth century, the first known use of antibiotics was by the ancient Chinese over 2,500 years ago. Many other ancient cultures, including the ancient Egyptians and ancient Greeks already used molds and plants to treat infections. At that time, however, the compounds having antibiotic activity and present in molds or plants were unknown.

The antibiotic properties of *Penicillium* were first described in France by Ernest Duchesne in 1897. However, his work went by without much notice from the scientific community until Alexander Fleming's discovery of Penicillin.

Antibiotics can be divided into two groups: bactericidal and bacteriostatic. Bactericidal antibiotics destroy bacteria, and bacteriostatic antibiotics prevent bacteria from multiplying. Antibiotics have been synthesized in the laboratory. They are used to treat serious bacterial infections such as pneumonia, tuberculosis, osteomyelitis, endocarditis and many others. Each antibiotic is effective only against certain bacteria. Antibiotics do not fight infections caused by viruses, such as cold, flu, bronchitis, and sore throat, unless caused by streptococci.

Usually, antibiotics are given by mouth, while intravenous antibiotics are used in more serious cases, such as deep-seated systemic infections. If the person has no other conditions that need treatment in the hospital and is feeling relatively well, intravenous antibiotics may be administered at home. Antibiotics may also sometimes be administered topically, as with eye drops or ointments. Possible side effects are varied and can range from fever and nausea to major allergic reactions. One of the more common side effects is diarrhea. Some side effects may disrupt the function of the kidneys, liver, bone marrow, or other organs. Blood tests are used to monitor such adverse reactions.

**Ex. 10. Translate the following words and word-combinations into English:**

Коливатися; пліснява, пліснявий грибок; місцевий, топічний; визнавати; сильнодіючий; бактеріостатичний; бактерицидний; пригнічувати, стримувати; побічний ефект; належати до; руйнувати; глибоко розташований; включати.

**Ex. 11. Translate the text “Antibiotics” into Ukrainian.**

**Ex. 12. Insert the missing words:**

1. Antibiotic is a chemical substance that \_ the growth of other microorganisms. 2. The term is used to \_ to substances with anti-bacterial, anti-fungal, or anti-parasitical activity. 3. Antibiotics can be divided into two groups: \_ and bacteriostatic. 4. Bactericidal antibiotics destroy bacteria, and bacteriostatic antibiotics prevent \_ from multiplying. 5. Antibiotics are used to \_ serious bacterial infections. 6. Each antibiotic is \_ only against certain bacteria. 7. Usually, antibiotics are given by mouth, while \_ antibiotics are used in more serious cases. 8. Antibiotics may also sometimes be administered \_, as with eye drops or ointments. 9. One of the more common side \_ is diarrhea. 10. Some side effects may disrupt the function of the kidneys, liver, \_, or other organs.

**Ex. 13. Answer the following questions:**

1. What is antibiotic? 2. What cases are antibiotics prescribed in? 3. How long are antibiotics used? 4. What groups are antibiotics divided into? 5. What are bactericidal antibiotics? 6. What are bacteriostatic antibiotics? 6. What side effect can antibiotic have? 7. What routs of antibiotics' administration are there?

**Ex. 14. Insert the prepositions:**

Since the first pioneering efforts of Florey and Chain \_ 1939, the importance of antibiotics to medicine has led to much research into discovering and producing them. The process of production usually involves screening \_ wide ranges of microorganisms, testing and modification. Production is carried out using fermentation; a process that is important \_ anaerobic conditions when there is no oxidative phosphorylation to maintain the production of adenosine triphosphate (ATP) \_ glycolysis.

**Ex. 15. Write out key words of the text “Antibiotics”.**

**Ex. 16. Make up a plan of the text “Antibiotics”.**

**Ex. 17. Speak on the using of antibiotics.**

**Ex. 18. Make up a dialogue on antibiotics.**

**Ex. 19. Give a summary of the following text:**

**PENICILLIN**

Penicillin is used in the treatment of bacterial infections. It works by killing bacteria or preventing their growth. There are several different kinds of penicillins. Each is used to treat different kinds of bacterial infections. One kind of penicillin usually may not be used in place of another. Penicillins are used to treat bacterial infections in many different parts of the body. They are sometimes given with other antibacterial medicines. Carbenicillin is used only to treat bacterial infections of the urinary tract and prostate gland. Penicillin G and penicillin V are also used to prevent “strep” infections in patients with a history of rheumatic heart disease. Piperacillin is given by injection to prevent bacterial infections before, during, and after surgery also. Some penicillins may also be used for other problems. However, none of the penicillins will work for colds, flu, or other viral infections. Penicillins (except some of them) are best taken with a full glass of water on an empty stomach (either 1 hour before or 2 hours after meals) unless otherwise directed by the doctor. To help clear up the infection completely, keep taking penicillin for the full time of treatment,

even if you begin to feel better after a few days. If the patient has a “strep” infection, he/she should keep taking this medicine for at least 10 days. This is especially important in “strep” infections. Serious heart problems could develop later if the infection is not cleared up completely. Also, if a person stops taking this medicine too soon, his/her symptoms may return. Along with its needed effects, a medicine may cause some unwanted effects, they are difficulty in breathing, skin rash or itching, abdominal or stomach pain, blood in urine, diarrhea, and joint pain.

**Ex. 20. Read and translate one of the following abstracts:**

**AMPICILLIN**

**Indications:** urinary-tract infections, otitis media, sinusitis, chronic bronchitis, and gonorrhea.

**Cautions:** history of allergy; renal impairment; chronic lymphatic leukemia; and possibly HIV infection.

**Contra-indications:** penicillin hypersensitivity.

**Side-effects:** nausea, diarrhea; rashes (discontinue treatment); rarely, antibiotic-associated colitis.

**Dose:** *by mouth*, 0.25-1 g every 6 hours, at least 30 minutes before food.

Gonorrhea, 2-3.5 g as a single dose with probenecid 1 g.

Urinary-tract infections, 500 mg every 8 hours

*By intramuscular injection or intravenous injection or infusion*, 500 mg every 4-6 hours; higher doses in meningitis.

Child under 10 years, any route, half adult dose.

**TETRACYCLINE**

**Indications:** exacerbations (загострeннeя) of chronic bronchitis; pleural effusions due to malignancy or cirrhosis.

**Precautions:** hepatic impairment; renal impairment; rarely causes photosensitivity.

**Contra-indications:** pregnancy and breast-feeding, children under 12 years of age, systemic lupus erythematosus.

**Side-effects:** nausea, vomiting, diarrhea; headache; hepatotoxicity.

**Dose:** *by mouth*, 250 mg every 6 hours, increased in severe infections to 500 mg every 6-8 hours.

Non-gonococcal urethritis, 500 mg every 6 hours for 7-14 days.

*By intravenous infusion*, 500 mg every 12 hours; max. 2 g daily.

**ERYTHROMYCIN**

**Indications:** alternative to penicillin in hypersensitive patients, pneumonia, syphilis, chronic prostatitis; diphtheria and whooping cough prophylaxis.

**Cautions:** hepatic impairment; renal impairment; pregnancy and breast-feeding.

**Contra-indications:** estolate contra-indicated in liver disease.

**Side-effects:** nausea, vomiting, abdominal discomfort, diarrhea; rashes and other allergic reactions.

**Dose:** *by mouth*, *Adult and child* over 8 years, 250-500 mg every 6 hours or 0.5-1 g every 12 hours; up to 4 g daily in severe infections; *Child* up to 2 years 125 mg every 6 hours, 2-8 years 250 mg every 6 hours, doses doubled for severe infections.

*By intravenous infusion*, *Adult and Child* severe infections, 50 mg/kg daily by continuous infusion or in divided doses every 6 hours; mild infections, 25 mg/kg daily.

**OVERVIEW**

Antibiotic is a chemical substance that inhibits the growth of other microorganisms. The term is used to refer to substances with anti-bacterial, anti-fungal, or anti-parasitical activity. Antibiotics can be divided into two groups: bactericidal and bacteriostatic. Bactericidal antibiotics destroy bacteria, and bacteriostatic antibiotics prevent bacteria from multiplying. Antibiotics are used to treat serious bacterial infections. Each antibiotic is effective only against certain bacteria. Usually, antibiotics are given by mouth, while intravenous antibiotics are used in more serious cases. Antibiotics may also sometimes be administered topically. One of the more common side



effects is diarrhea. Some side effects may disrupt the function of the kidneys, liver, bone marrow, or other organs.

**LESSON 20**  
**HUMAN ANATOMY**  
**(BODY REGIONS)**

**VOCABULARY**

**cranial** [ˈkreɪnjəl] черепний  
**cheek** [tʃi:k] щока  
**cheekbone** [ˈtʃi:kbeɪn] вилиця  
**eyebrow** [aɪˈbraʊ] брова  
**forehead** [ˈfɔːrɪd] лоб  
**temple** [ˈtempəl] скроня  
**division** [dɪˈvɪʒən] поділ, розподіл  
**girdle** [ˈɡɜːldl] пояс  
**pectoral** [ˈpektərəl] грудний  
**pelvic** [ˈpeltɪk] тазовий  
**pelvis** [ˈpeltɪs] таз  
**refer** [rɪˈfɜː] належати  
**respective** [rɪˈspektɪv] відповідний  
**inferior** [ɪnˈfɪəriə] нижчий  
**superficial** [ˈsɜːpɪʃəl] зовнішній  
**quadrant** [ˈkwɒdrənt] квадрант, чверть кола  
**approach** [ˈɒprəʊtʃ] підхід  
**stomach** [ˈstʌmək] шлунок  
**spleen** [spliːn] селезінка  
**pancreas** [ˈpæŋkreɪs] підшлункова залоза  
**gallbladder** [ˈgɒlˈblædə] жовчний міхур  
**gullet** [ˈɡʌlət] стравохід  
**intestine** [ɪnˈtestɪn] кишка; кишківник

**kidney** [ˈkɪdnɪ] нирка  
**urinary bladder** [ˈjʊərɪnəriˈblædə] сечовий міхур  
**liver** [ˈlɪvə] печінка  
**tumor** [ˈtjuːmə] неоплазма, новоутворення; пухлина  
**limb** [lɪm] кінцівка  
**arm** [ɑːm] плече (частина верхньої кінцівки); рука  
**forearm** [ˈfɔːrɑːm] передпліччя  
**wrist** [rɪˈst] зап'ясток  
**hand** [hænd] кисть  
**shoulder** [ˈʃəʊldə] плечовий суглоб  
**elbow** [ˈelbəʊ] лікоть  
**thigh** [θaɪ] стегно (частина нижньої кінцівки)  
**leg** [leg] гомілка; нога  
**ankle** [ˈæŋkəl] надп'яtkово-гомілковий суглоб; зона з'єднання надп'яtkово-гомілкового суглоба  
**hip** [hɪp] стегно  
**trunk** [ˈtrʌŋk] тулуб  
**chest (thorax)** [tʃest ('θɒrəks)] грудна клітка  
**neck** [nek] шия

**RULES OF READING**

c + e, i, y	[s]	acid city
c (in other cases)	[k]	cup cycle
g + e, i, y	[ʤ]	large but: get, give, begin [g]
g (in other cases)	[g]	big green

**Ex. 1. Read the following words:**

Connective; increase; care; medical; clinic; education; doctor; cancer; come; place; certain; medicine; go; get; give; drug; negative; dosage; gel.

**WORD-BUILDING**

**Ex. 2. Familiarize yourself with the following material:**

**Suffix of Noun:**

**-ure** (denotes condition or phenomena)

pressure – тиск

**Ex. 3. Read and translate the following words:**

Procedure; acupuncture; literature; structure; temperature; suture; mixture; signature.

**GRAMMAR:**

**Ex. 4. Enter the Past Participle (V<sub>3</sub>) of the following verbs:**

be	know
begin	lead
bring	let
choose	lose
come	make
do	tell
find	put
feel	read
get	speak
give	spend
go	take
have	think
hold	write

**Ex. 5. Distinguish carefully the correct pronunciation of the following regular verbs:**

[d]	[t]	[ʃd]
called	developed	situated
defined	discussed	divided
received	noticed	separated
organized	produced	surrounded
observed	depressed	bounded

**Ex. 6. Read the following grammar material:**

**SIMPLE TENSES**

**(Passive Voice, Affirmative Form)**

In passive sentences, we are more interested in the object of the active sentence. This is because *who did the thing* isn't important at the moment, or because we don't know *who did it*.

"*New method is used by this scientists*". "*is used*" is passive. Compare Active and Passive Voices in the following sentences:

Voice	Subject	Predicate	Object
Active Voice	The scientist	uses	new method.
Passive Voice	New method	is used	by the scientist.

**Ex. 7. Memorize the data of following table:**

**PASSIVE VOICE:**

**to be + V<sub>3</sub>**

TENSE	SUBJECT	PREDICATE
SIMPLE	<b>Present</b> I he, she, it they, you, we	<b>am</b> <b>is</b> <b>are</b>  <b>V<sub>3</sub></b>
	<b>Past</b> I, he, she, it they, you, we	<b>was</b> <b>were</b>  <b>V<sub>3</sub></b>
	<b>Future</b> I, we he, she, it, you, they	<b>shall be</b> <b>will be</b>  <b>V<sub>3</sub></b>

**MODEL:**

The human body **is divided** into several parts. (Present Simple Tense, Passive Voice)

The operation **was performed** on yesterday. (Past Simple Tense, Passive Voice)

The disease **will be cured**. (Future Simple Tense, Passive Voice)

**Ex. 8. Read and translate the following sentences into Ukrainian:**

1. The academic year is divided into two terms. 2. Many patients are examined by the physician every day. 3. The operation was performed on under general anesthesia. 4. The head is divided into the cranial and the facial parts. 5. Your lungs will be X-rayed. 6. The head and the trunk are connected by the neck. 7. The upper part of the trunk is called the chest. 8. The heart, lungs, and gullet are located in the chest. 9. These operations will be performed on by this surgeon. 10. The lectures in Anatomy is delivered on Monday. 11. Many experiments were carried out by our students. 12. The skeleton is composed of bones. 13. The upper limb is divided into some parts. 14. The major organs are located in the trunk, such as: the heart, the lungs, the stomach, the liver, the spleen, the large and small intestines, the kidneys, the gallbladder, and bladder. 15. Future doctors will be trained to be world-class experts.

**Ex. 9. Turn the following sentences into the Past and Future Simple Tenses:**

1. Doctor's prescriptions are fulfilled by this patient. 2. Different medical procedures are included into physical examination. 3. This patient is directed to make blood analysis. 4. They are treated free of charge. 5. These experiments are carried out by the members of our scientific society. 6. This hospital is equipped with new devices. 7. Some new methods of treatment are published in this journal. 8. This book is written by some well-known scientists.

**Ex. 10. Translate the following sentences into English:**

1. Кров'яний тиск цього пацієнта був визначений лікарем. 2. Його здоров'я було відновлене після належного лікування. 3. Нові наукові дослідження в галузі будови тканин будуть проводитися у наступному місяці. 4. Необхідний захист мозку забезпечується лицьовими кістками. 5. Нижня частина тулуба має назву черевна порожнина. 6. Шлунок, печінка, селезінка, товстий та тонкий кишечники, нирки, жовчний міхур, сечовий міхур знаходяться у черевній порожнині. 7. Основна частина грудної клітки сформована ребрами. 8. Цей медичний інститут був заснований видатним вченим.

**Ex. 11. Read and translate the following phrases. Compose your own sentences using these phrases:**

New method	is used ... is experimented ...
This treatment	is proposed ... is suggested ...
This problem	is investigated ... is discussed ...

**Ex. 12. Find in the text "Body Regions" the sentences with predicates in Simple Tenses, Passive Voice and translate them into Ukrainian.**

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 13. Read VOCABULARY and memorize new words.**

**Ex. 14. Compose 3-4 sentences using the words of VOCABULARY.**

**Ex. 15. Insert the missing letters:**

T\_mor; tr\_nk; \_nkle; superf\_cial; abdom\_n; el\_ow; gir\_le; \_rist; lim\_; divi\_ion; refe\_; pelvi\_; t\_orax; he\_rt; l\_ver; st\_mach; kidn\_y; l\_ng; \_ntestine; sple\_n.

**Ex. 16. Read the following words:**

Pelvic; thigh; forearm; shoulder; girdle; approach; limb; thorax; superficial; chest; trunk; wrist; division; elbow; abdomen; stomach; intestine; knee.

**Ex. 17. Translate the following words into Ukrainian:**

Pelvic; thorax; wrist; elbow; hip; shoulder; leg; knee; superficial; limb; forearm; girdle; quadrant; pectoral; ankle; lower; associated; clinician.

**Ex. 18. Read the following text:**

**BODY REGIONS**

The body is commonly divided into several regions. They are the head, trunk, and limbs.

The head is divided into the cranial and the facial parts. The facial bones form the structure of the face. The forehead, the temples, eyes, eyebrows, the cheeks, the cheekbones, nose, oral cavity and chin compose the face.

The upper limb (or extremity) is divided into the arm, elbow, forearm, wrist, and hand. The arm extends from the shoulder to the elbow, and the forearm extends from the elbow to the wrist. The upper limb is attached to the body by the shoulder, or pectoral girdle (the bony structure by which the limbs are attached to the body). The lower limb is divided into the thigh, knee, leg, ankle, and foot. The thigh extends from the hip to the knee, and the leg extends from the knee to the ankle. The lower limb is attached to the body by the hip, or pelvic girdle. Note that the terms arm and leg, contrary to popular usage, refer only to a portion of the respective limb.

The trunk can be divided into the thorax (chest), abdomen (region between the thorax and pelvis), and pelvis (the inferior end of the trunk, associated with the hips). The major organs are located in the trunk, such as: the heart, the lungs, the stomach, the liver, the spleen, the large and small intestines, the kidneys, the gallbladder, and bladder.

The abdomen is often subdivided superficially into four quadrants. They include the upper right, upper left, lower right, and lower left quadrants. The four-quadrant approach is commonly used by clinicians to describe the location of some organs or of a clinical problem such as pain or a tumor.

**Ex. 19. Translate the following words into English:**

Поділ, розподіл; лицьова частина; тулуб; черевна порожнина; пояс; передпліччя; коліно; гомілка; належати; тазовий; зап'ясток; нижня кінцівка; плече; серце; печінка; селезінка; кишківник; сечовий міхур; легені; відповідний.

**Ex. 20. Translate the text "Body Regions" into Ukrainian.**

**Ex. 21. Insert the missing words:**

1. The \_ is divided into several regions. 2. The upper limb is divided into the arm, \_, and hand. 3. The upper limb is attached to the body by the \_. 4. The lower limb is divided into the \_, leg, and foot. 5. The lower limb is attached to the body by the \_ . 6. The \_ can be divided into the thorax, abdomen, and pelvis. 7. The abdomen is often subdivided superficially into four \_. 8. The four-quadrant \_ is commonly used by clinicians to describe the location of underlying \_ or of a clinical problem such as pain or a tumor.

**Ex. 22. What is it:**

Arm.

Forearm.

Thigh.

Leg.

Thorax.

Abdomen.

Pelvis.

**Ex. 23. Organize the information of the text in table:**

Upper limb:		Head:	
Lower limb:		Trunk:	

**Ex. 24. Answer the questions:**

1. What regions is human body divided into? 2. What parts is the upper limb divided into? 3. What parts does the lower limb consist of? 4. What girdle connects the upper limb with the trunk? 5. What girdle connects the lower limb with the trunk? 6. What parts is the trunk divided into? 7. What internal organs are located in the trunk?

**Ex. 25. Retell the text "Body Regions".**

**Ex. 26. Read the following words with their translation and compose your own sentences:**

**sternal** [*stWnql*]/грудинний, що належить до грудини

**brachial** [*breJkIql*]/плечовий

**femoral** [*femqrql*]/стегновий

**axillary** [*aksIqrI*]/пахвинний

**genital** [*GenIql*]/статевий, що належить до статевих органів

**pubic** [*pyJfIk*]/лобковий

**acromial** [*q'kroumInql*]/акроміальний, належачий до латеральної кінцівки лопатки

**cubital** [*kjJfItI*]/ліктьовий

**antebrachial** [*antIbreJkIql*]/такий, що належить до передпліччя

**cephalic** [*sJfksIk*]/головний

**cervical** [*sWvIkql*]/шийний

**carpal** [*kRpqI*]/кистьовий, зап'ястний

**manual** [*manjuql*]/ручний

**digital** [*dIqIql*]/пальцевий

**geniculate** [*GenIkuIte*]/колінний

**crural** [*krurql*]/що належить до гомілки

**tarsal** [*tRsgI*]/заплесновий

**pedal** [*pedI*]/ножний, що належить до стопи

**Ex. 27. Say all known body regions and structures.**

**Ex. 28. Cover the left and right sides of the figure "Body Regions and Structures" and write the necessary terms.**

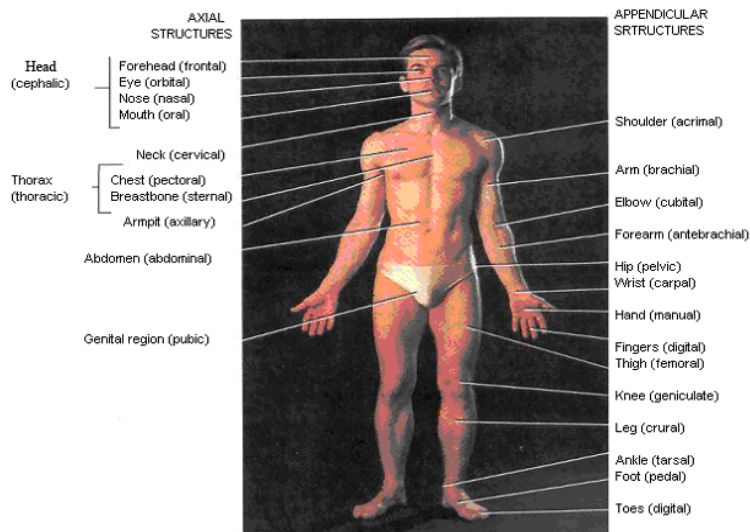


Figure "Body Regions and Structures". The axial region includes the head, neck, and trunk. The appendicular region includes the limbs (extremities), and their associated girdles. The arm is that part of the upper limb between the shoulder and elbow. The forearm is between the elbow and wrist. In the lower limb the thigh is between the hip and the knee, whereas the leg is between the knee and the ankle.

**Ex. 29. Add the missing words:**

STRUCTURE	REGION
mouth	oral
armpit	
neck	
abdomen	
hip	
shoulder	
thigh	
leg	
arm	

**Ex. 30. Complete the following dialogue:**

- What regions is human body divided into?
- Human body \_ .
- What is the upper limb divided into?
- The upper limb is divided into \_ .
- What is the lower limb divided into?
- The lower limb \_ .
- What does the trunk consist of?
- The trunk consists of \_ .

**Ex. 31. Reproduce the similar dialogue.****Ex. 32. Translate the following sentences into English:**

Тіло людини поділяється на кілька частин: голова, тулуб, верхні та нижні кінцівки. Верхня кінцівка поділяється на плече, передпліччя, зап'ясток та кисть. Верхня кінцівка приєднується до тулуба за допомогою плечового поясу. Нижня кінцівка складається зі стегна, гомілки, щиколотки та стопи. Вона прикріплюється до тулуба за допомогою тазового поясу. Тулуб поділяється на грудну клітку, черевну порожнину та таз.

**Ex. 33. Insert the missing words (be, see, talk, walk) and learn the following rhyme by heart:**

Without your tongue you cannot \_,  
 Without your feet you cannot \_,  
 Without your eyes you cannot \_,  
 Without your heart you cannot \_.

**OVERVIEW**

The body is divided into several regions. They are the head, trunk, and limbs. The head is divided into the cranial and the facial parts. The upper limb is divided into the arm, elbow, forearm, wrist, and hand. The arm extends from the shoulder to the elbow, and the forearm extends from the elbow to the wrist. The upper limb is attached to the body by the shoulder. The lower limb is divided into the thigh, knee, leg, ankle, and foot. The thigh extends from the hip to the knee, and the leg extends from the knee to the ankle. The lower limb is attached to the body by the hip, or pelvic girdle. The trunk is divided into chest, abdomen and pelvis. The principal organs of the trunk are: the heart, the lungs, the stomach, the liver, the spleen, the large and small intestines, the kidneys, the gallbladder, and bladder.

## VOCABULARY

<b>thoracic</b> [ˈθɔːrɪsɪk] грудинний	<b>acid</b> [ˈæsɪd] кислота
<b>abdominal</b> [ˌæbˈdɒmɪn(ə)] абдомінальний, черевний	<b>enzyme</b> [ˈenzɑːm] фермент, ензим
<b>trachea</b> [ˈtrɑːkeɪ; ˈtreɪkɪ] трахея	<b>release</b> [rɪˈliːs] звільняти, виділяти
<b>esophagus</b> [ˈɛsəˈfɑːɡəs] стравохід	<b>ingest</b> [ɪnˈdʒest] ковтати, проковтнути
<b>rib</b> [rɪb] ребро	<b>digestion</b> [dɪˈdʒestʃən] травлення, перетравлення їжі
<b>larynx</b> [ˈlærɪŋks] гортань	<b>detect</b> [dɪˈtekt] виявляти, помічати
<b>mediastinum</b> [ˈmɛdɪəˈstɪnəm] середостіння	<b>blood</b> [blʊd] кров
<b>respond</b> [rɪˈsɒnd] реагувати	<b>excretory</b> [ekˈskrɪːtɔːrɪ] вивідний, видільний, екскреторний
<b>lobe</b> [ləʊb] частка	

## RULES OF READING

Letters	Sounds	Examples	Notes
s	[s]	son soft	на початку і в кінці слова після глухих приголосних
s	[z]	nose goes	між голосними і в кінці слова після дзвінких приголосних і голосних
x	[ks]	text six	у кінці слова та перед глухим приголосним
x	[gz]	exact exam	якщо перед буквою <i>x</i> є буква <i>e</i> та за буквою <i>x</i> йде наголошений голосний

### Ex. 1. Read the following words:

Suppose; must; meals; dose; prescription; mustard; several; vitamin; surgeon; pulse; virus; text; mixture; complex; examiner.

## WORD-BUILDING

### Ex. 2. Familiarize yourself with the following material:

#### Suffixes of Adjectives:

**-able, -ible**

to break *ломати* – breakable *ламкий*

to express *виражати* – expressible *виразний*

### Ex. 3. Read and translate the following words:

Comfortable; honorable; treatable; favorable; valuable; considerable; movable; invulnerable; responsible; possible; susceptible.

## GRAMMAR:

### Ex. 4. Familiarize yourself with the data of the following table:

#### SIMPLE TENSES

(Passive Voice, Interrogative Form)

TENSE	QUESTION WORD	AUXILIARY VERB	SUBJECT	VERB
Present Simple	What Where	am is	I he, she, it	V <sub>3</sub>

<b>Tense</b>	When	<b>are</b>	we, you, they	
<b>Past Simple Tense</b>	Why How How many	<b>was</b> <b>were</b>	I, he, she, it they, you, we	<b>V<sub>3</sub></b>
<b>Future Simple Tense</b>	How much Whom	<b>shall</b> <b>will</b>	I, we they, she, he, it, you	<b>be + V<sub>3</sub></b>

### General Questions

Is the abdomen **subdivided** into four quadrants? (Present Simple Tense, Passive Voice)

Was the artificial metal joint **used** in 1678? (Past Simple Tense, Passive Voice)

Will the operation **be performed** on by the surgeon? (Future Simple Tense, Passive Voice)

### Special Questions

How **are** the bones **classified**? (Present Simple Tense, Passive Voice)

What **is** the muscular contraction **controlled** with? (Present Simple Tense, Passive Voice)

**BUT**: What organs **are located** in the chest? (A question to the subject)

### Ex. 5. Read and translate the following interrogative sentences into Ukrainian:

1. Is the trunk divided into three large cavities? 2. Is the thoracic cavity surrounded by the rib cage? 3. Where is the heart located? 4. What organs are located in the abdomen? 5. What parts is the lower limb divided into?

### Ex. 6. Make the following sentences interrogative:

1. The upper extremity is formed by the arm, forearm, and hand. 2. The bones of the skeleton are connected together by the joints or by the cartilages. 3. The skeleton is composed of bones. 4. The upper extremity is connected with the trunk by the shoulder girdle. 5. The lectures in Physiology are attended by all the students. 6. Your articles are often published. 7. A new hospital will be built here. 8. Different problems were discussed at the last meeting. 9. These books were taken from the library yesterday.

### Ex. 7. Translate the following questions into English:

1. Де знаходяться легені? 2. В якому журналі були описані ці нові методи лікування? 3. Скільки пацієнтів було вчора оглянуто? 4. До якого поясу прикріплюється верхня кінцівка? 5. На скільки частин поділяється тіло людини?

## READING AND DEVELOPING SPEAKING SKILLS

### Ex. 8. Insert the missing letters and translate the following words:

Cag\_; tr\_nk; rele\_se; eso\_hagus; pel\_ic; he\_rt; bl\_od; k\_dney; bla\_der; lar\_nx; trach\_a; medi\_stinum; d\_tect; diges\_ion; c\_vity; lun\_; abdom\_nal; a\_id; s\_leen; pan\_reas; thora\_ic; st\_mach; l\_be; l\_ver; urin\_ry; inte\_tine; in\_est; resp\_nd.

### Ex. 9. Translate the following word-combinations and sentences into Ukrainian:

1. **body**; the reaction of the body to the disease; forces of the body; the body of the patient; to remove a foreign body, the total body weight, human body.  
2. **digestive**; digestive system; the organs of the digestive system; The digestive system consists of the alimentary canal and accessory organs.  
3. **blood**; blood vessels; blood pressure; blood count; the circulation of the blood; the state of the blood vessels; the flow of the blood; venous blood flows through the veins; to send the blood for analysis; Blood vessels supply the muscles.

### Ex. 10. Translate the following words and word-combinations into Ukrainian:



Contain; rib cage; connect; esophagus; lymphatic tissue; pelvic cavity; principal organs; heart; blood; kidney; bladder; small intestine; larynx; superior; trachea; mediastinum; remove; lung; abdominal; spleen; waste products; pancreas; thoracic; male; female; stomach; lobe; liver; urinary; trunk.

**Ex. 11. Read the following words:**

Windpipe; membranous; container; abdominal; heart; stomach; circulation; blood; right; physical; pancreas; bladder; wall; acid; enzyme; release; entire; approximately; amount; occur; major; process; nutrient; minor; respond; reproductive; diaphragm; bronchi.

**Ex. 12. Read the following text:**

**TRUNK**

The trunk contains three large cavities, the thoracic cavity, the abdominal cavity, and the pelvic cavity. The thoracic cavity contains the trachea, esophagus, heart and lungs. It is surrounded by the rib cage and is separated from the abdominal cavity by the muscular diaphragm.

The trachea, or windpipe, is a membranous tube that consists of connective tissue. The trachea connects the larynx to the bronchi. The esophagus is that portion of the digestive tube that extends between the pharynx and the stomach. It transports food from the pharynx to the stomach. The heart is between the lungs in the space within the mediastinum. It is a muscular organ consisting of four chambers. The heart is responsible for the circulation of the blood. The lungs are the principal organs of respiration. Each lung is conical in shape. The right lung is larger than the left. The right lung has three lobes, and the left one has two lobes.

There is no physical separation between the abdominal cavity and pelvic cavity. The abdominal cavity is bounded by the abdominal muscles and contains the stomach, intestines, liver, spleen, pancreas, and kidneys. The pelvic cavity is a small space enclosed by the pelvis and contains the urinary bladder, part of the large intestine, and internal reproductive organs.

The stomach is an enlarged segment of the digestive tract in the left portion of the abdomen. The stomach wall has many glands from which acid and enzymes are released into the stomach and are mixed with ingested food. The small intestine consists of three portions. The entire small intestine is approximately 6 m long. The small intestine is the site where the greatest amount of digestion and absorption occurs. The major functions of large intestine are secretion and absorption. The liver stores and processes nutrients, and produces blood components. The liver consists of two major and two minor lobes. The spleen detects and responds to the foreign substances in the blood and acts as a blood reservoir. It is located on the left side in the extreme superior, posterior corner of the abdominal cavity. The pancreas lies along the small intestine and the stomach. The kidneys are bean-shaped organs. They remove waste products from the blood, play a major role in controlling blood concentration, and control the red blood cell production and vitamin D metabolism. The kidneys are the major excretory organs in the body.

The urinary bladder is a hollow muscular container. The size of bladder is dependent on the presence or absence of urine. The function of bladder is to store urine. Unlike most organ systems, the reproductive systems are very different in male and female. But the internal reproductive organs are located in the pelvic cavity and many of the hormones are the same in the male and female, even though their functions may be quite different.

**Ex. 13. Translate the following words and word-combinations into English:**

Реагувати; тулуб; звільняти, виділяти; гортань; абдомінальний, черевний; фермент, ензим; грудинний; кислота; серце; ковтати, проковтнути; шлунок; кишечник; таз; травлення їжі; селезінка; порожнина; підшлункова залоза; трахея; грудна клітка; стравохід; виявляти, помічати; печінка; легені; середостіння; нирка.

**Ex. 14. Translate the text "Trunk" into Ukrainian.**

**Ex. 15. Answer the following questions:**

1. What cavities are located in the trunk? 2. What principal organs are located in the thoracic cavity? 3. What is trachea? 4. Where is esophagus located? 5. What is the heart responsible for? 6. What are the lungs? 7. What is the difference between the right and the left lungs? 8. What organs of the abdominal cavity do you know? 9. What is the enlarged segment of the digestive tract? 10. What is the function of the stomach? 11. What is the small intestine? 12. What is the function of the liver? 13. What organs are located in the pelvic cavity?

**Ex. 16. Name the inner organs and complete the following table:**

Thoracic cavity	Abdominal cavity	Pelvic cavity
lungs	stomach	

**Ex. 17. Insert the missing words:**

The trunk \_ three large cavities, the thoracic cavity, the abdominal cavity, and the \_ cavity. The thoracic cavity contains the trachea, \_ , \_ and lungs. It is surrounded by the rib cage and is separated from the \_ cavity by the muscular diaphragm.

The abdominal cavity is bounded by the abdominal muscles and contains the \_ , intestines, liver, \_ , pancreas, and kidneys. The stomach is an enlarged segment of the \_ tract. The small \_ is the site where the greatest amount of digestion and absorption occurs. The major functions of large \_ are secretion and absorption. The liver stores and processes nutrients, and produces \_ components.

The pelvic cavity is a small space enclosed by the \_ and contains the urinary bladder, part of the large intestine, and internal \_ organs. The urinary \_ is a hollow muscular container. The function of \_ bladder is to store urine. The reproductive systems are very different in \_ and female.

**Ex. 18. Describe the functions of inner organs** (esophagus, heart, lungs, stomach, liver, spleen, urinary bladder).

**Ex. 19. Read the following text and retell it:**

**BODY CAVITIES**

The trunk contains thoracic, abdominal, and pelvic cavities. The thoracic cavity is subdivided by the mediastinum. The diaphragm separates the thoracic and abdominal cavities. The pelvic cavity is surrounded by the pelvic bones. The trunk cavities are lined by serous membranes. The parietal portion of a serous membrane lines the walls of the cavity, and the visceral portion is in contact with internal organs. The serous membranes secrete fluid that fills the space between the visceral and parietal membranes. The serous membranes protect organs from friction. The pleural membranes surround the lungs, the pericardial membranes surround the heart, and the peritoneal membranes line the abdominal and pelvic cavities and surround their organs. Mesenteries are parts of the peritoneum that hold the abdominal organs in place and provide a passageway for blood vessels and nerves to the organs.

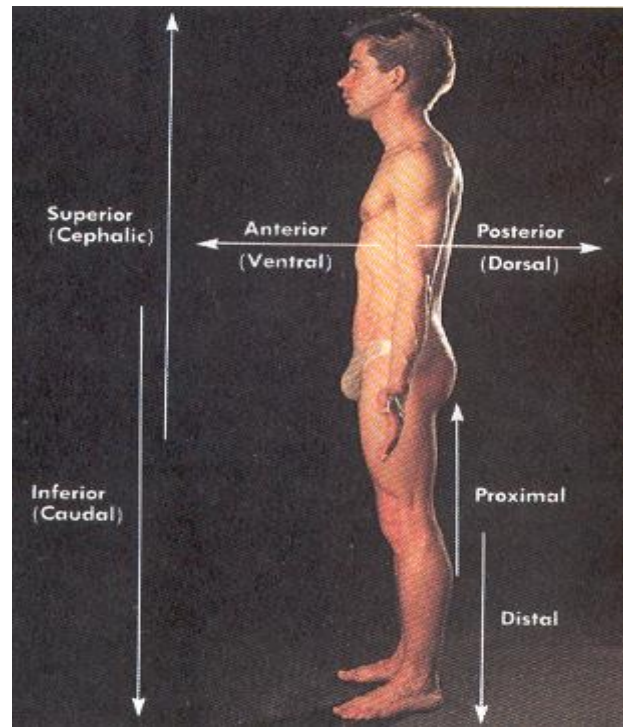
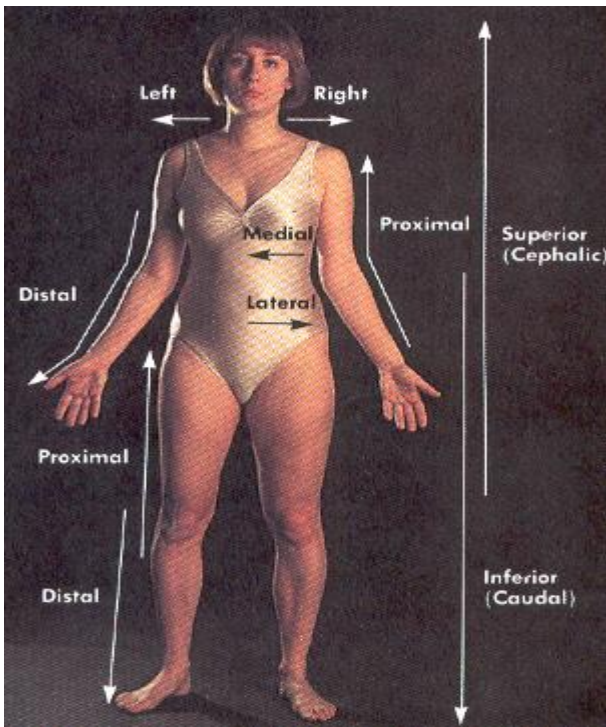
**NOTES:**

**line** [laɪn] вистилати

**visceral** [ˈvɪʃərəl] вісцеральний, внутрішній

**parietal** [peˈri:ətəl] парієтальний, пристінковий

**peritoneal** [ˈperɪtəˈni:əl] очеревинний



Body Directions

Ex. 20. Look through the table "Directional Terms for Humans" and write down new words into your vocabulary.

**DIRECTIONAL TERMS FOR HUMANS**

Terms	Etymology	Definition
Left		Toward the left side
Right		Toward the right side
Superior	L, higher	A structure higher than another (usually synonymous with cephalic)
Inferior	L., lower	A structure lower than another (usually synonymous with caudal)
Proximal	L. <i>proximus</i> , nearest	Closer than another structure to the point of attachment to the trunk
Distal	L. <i>di-</i> plus <i>sto</i> , to stand apart or to be distant	Farther than another structure to the point of attachment to the trunk
Medial	L. <i>medius</i> , middle	Toward the middle or the midline of the body
Lateral	L. <i>latus</i> , side	Away from the middle or midline of the body
Anterior	L., before	The front of the body (synonymous with ventral)
Posterior	L. <i>posterus</i> , following	The back of the body (synonymous with dorsal)
Superficial	L. <i>superficialis</i>	Toward or on the surface

**NOTE:**  
L – Latin

**Ex. 21. Complete the following sentences with expressions given below:**

When describing parts of the body, it is often important to refer to their relative positions. Proximal means \_\_, whereas distal means \_\_. These terms are commonly used in reference to structure in the limbs; each limb is attached at its proximal end of the body, and the other end, the distal end (the hand or foot), is some distance away. Proximal and distal may also be used in reference to tubular systems such as the kidney or the digestive tract. The \_\_ end of the small intestine is attached to the stomach, and the \_\_ end of the small intestine connects to the large intestine. Medial means \_\_, and lateral means \_\_. The nose is located in a medial position in the face, and the eyes are lateral to the nose. The terms superficial and deep refer to the structure \_\_ and \_\_. The skin is superficial to muscle and bone.

away from the midline; proximal; more toward the interior of the body; nearest; to be distant; close to the surface of the body; distal; toward the midline

**OVERVIEW**

The trunk consists of the thoracic cavity, the abdominal cavity, and the pelvic cavity. The thoracic cavity contains the trachea, esophagus, heart and lungs. It is surrounded by the rib cage and is separated from the abdominal cavity by the muscular diaphragm. The abdominal cavity is bounded by the abdominal muscles. It contains the stomach, intestines, liver, spleen, pancreas, and kidneys. The pelvic cavity is a small space enclosed by the pelvis and contains the urinary bladder, part of the large intestine, and internal reproductive organs.

**LESSON 22**  
**HUMAN ANATOMY**  
**(HEAD)**

**VOCABULARY**

**cranium** [ˈkreɪnɪjəm] череп  
**brain** [breɪn] мозок  
**parotid** [pəˈrɒtɪd] привушний  
**cavity** [ˈkævɪtɪ] порожнина  
**sublingual** [sʌˈlɪŋɡw(ə)l] під'язиковий  
**anterior** [ænˈtɪərɪjəl] передній  
**cutaneous** [kjuː(ː)teɪnjəs] шкірний  
**superior** [sjuːˈpɪərɪjəl] верхній, розташований вище  
**nonverbal** [ˈnɒnˈvɜːbəl] невербальний (безслівний)  
**inferior** [ɪnˈfɪərɪjəl] нижній  
**confine** [kənˈfaɪn] обмежувати  
**posterior** [pɒsˈtɪərɪjəl] задній  
**contribute** [kənˈtrɪbjʊt] співвідноситися  
**furrow** [ˈfʌrə] укриватися зморшками  
**occipito-frontal** [ˈɒksɪpɪˈfrʌntl] потилично-лобовий  
**temple** [ˈtempəl] скроня

**orbicular** [ˈɔːbɪkjʊlə] круговий, коловий  
**eyelid** [ˈaɪlɪd] віко  
**corrugator** [kɒruˈɡeɪtə] м'яз, що викликає зморщування шкіри  
**chin** [tʃɪn] підборіддя  
**masseter** [ˈmæsɪˈtɛtə] жувальний  
**bound** [baʊnd] межувати, слугувати межею  
**temporal** [ˈtemp(ə)r(ə)l] скроневий  
**fauces** [ˈfəʊsɪz] горло, зів  
**medial** [ˈmiːdiəl] медіальний  
**pterygoid** [ˈtɪrɪˈɡɔɪd] крилоподібний  
**palatine tonsil** [ˈpæləˈtɪn ˈtɒnsɪl] піднебінний мигдалик  
**hyoid** [ˈhaɪɔɪd] під'язиковий  
**palate** [ˈpælət] піднебіння  
**intrinsic** [ɪnˈtrɪnsɪk] внутрішній  
**salivary gland** [ˈsælɪˈvɛrɪ ˈɡlænd] слинна залоза  
**extrinsic** [ekˈstrɪnsɪk] зовнішній  
**vault** [vɔːlt] склепіння

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 1. Read the following words and translate them into Ukrainian:**

Cranium; forehead; chin; tonsil; cheek; eyelid; cheekbone; temporal; salivary; gland; palatine; bound; cavity; anterior; superior; masseter; confine; intrinsic; orbicular; immediately; hyoid; eyebrow;

palate; contribute; subcutaneous; tongue; extrinsic; temple.

**Ex. 2. Match the medical term with its translation:**

parietal [ˈpɑːriːəl]	скроневий
temporal [ˈtempərəl]	носова пазуха
occipital [ˈɒkɪpɪtəl]	ковадло, коваделко
ethmoid [ˈeɪmɔɪd]	стремено, стремінце
zygomatic [zɪˈɡɒmɪk]	потиличний
palatine [ˈpælətaɪn]	молоточок
lacrimal [ˈlækrɪməl]	піднебінний
nasal concha [ˈnæzəl kɒŋkə]	виличний
vomer [ˈvɒmər]	слізний
auditory ossicle [ˈɔːdɪtəri ɒsɪkəl]	леміш
malleus [ˈmælɪs]	слухова кісточка
incus [ˈɪŋkəs]	гратчастий
stapes [ˈsteɪpɪz]	тім'яний

**Ex. 3. Read the following text:**

**HEAD**

The head is divided into the cranial and the facial parts. The skull is composed of 28 separate bones organized into the following groups: the cranial vault, the auditory ossicles, and the facial bones. The cranial vault consists of 8 bones that surround and protect the brain. They include the parietal, temporal, frontal, occipital, sphenoid, and ethmoid bones.

The six auditory ossicles, which function in the hearing, are located inside cavities of the temporal bones and cannot be observed unless the temporal bones are cut open.

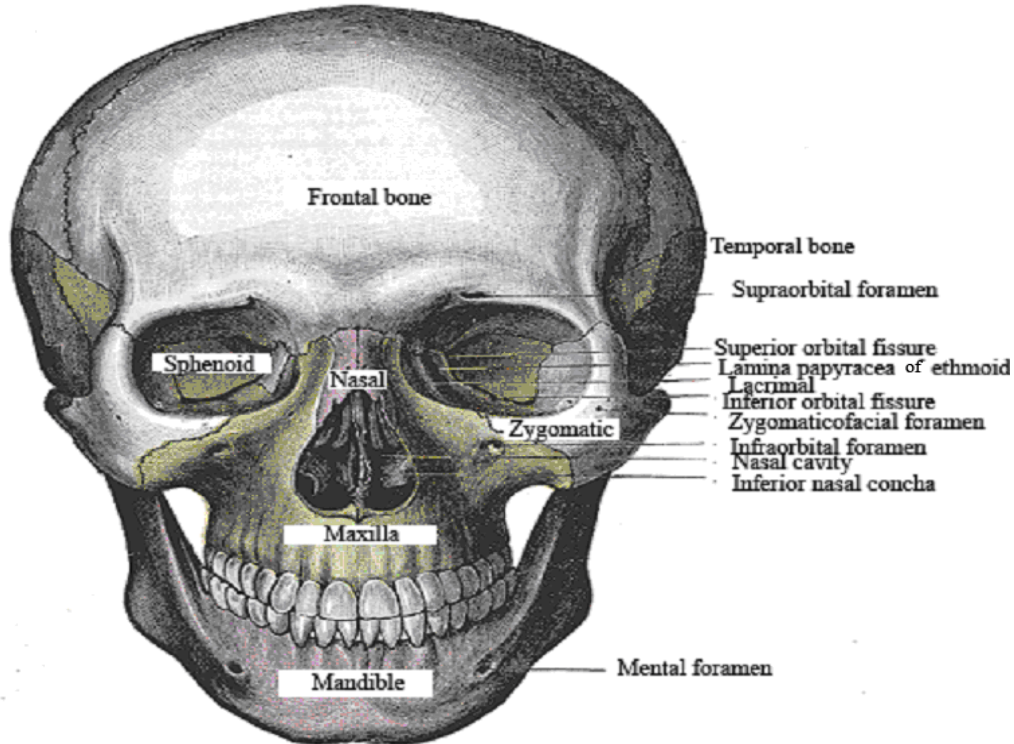
The facial bones form the structure of the face in the anterior skull but do not contribute to the cranial vault. They are the maxilla (two), mandible (one), zygomatic (two), palatine (two), nasal (two), lacrimal (two), vomer (one), and inferior nasal concha (two) bones. The frontal and ethmoid bones, which are the part of the cranial vault, also contribute to the face. The forehead, the temples, eyes, eyebrows, the cheeks, the cheekbones, nose, oral cavity and chin compose the face.

The oral cavity is bounded by the lips anteriorly, the fauces posteriorly, the cheeks laterally, the palate superiorly, and a muscular floor inferiorly. In the oral cavity of an adult there are 32 permanent teeth, hard and soft palates, palatine tonsils, salivary glands, and a tongue. The types of the teeth are incisors, canines, premolars, and molars. Every tooth consists of a crown, a neck, and a root. The root is composed of dentine. Within the dentine of the root is the pulp cavity, which is filled with blood vessels and nerves. The crown is dentine covered by enamel. The hard and soft palates are the roofs of the oral cavity. Salivary glands produce serous and mucous secretions. The three pairs of large salivary glands are the parotid, submandibular, and sublingual.

The facial bones provide protection for major sensory organs located in the face such as the eyes, nose, and tongue. The person sees with eyes, breathes and smells with nose, taste with tongue, and hear with ears.

The skeletal muscles of the face are cutaneous muscles attached to the skin. In humans in whom facial expressions are important components of nonverbal communication, cutaneous muscles are confined primarily to the face and neck. Several muscles act on the skin around the eyes and eyebrows and furrow the skin of the forehead. They are: the occipitofrontal muscles, the orbicular muscles of eyes, the elevator muscles of the upper eyelids, the corrugator muscles and others. Several muscles function in moving the lips and the skin surrounding the mouth. The muscles of mastication (the masseter, temporal, medial pterygoid, and lateral pterygoid muscles) and the hyoid muscles move the mandible. The tongue consists of a mass of intrinsic muscles and extrinsic muscles, which change the shape of the tongue and move it. Hyoid muscles can depress the jaw and assist in swallowing.

Six muscles with their origins on the orbital bones insert on the eyeball and cause it to move within the orbit.



*The Skull From the Front*

**Ex. 4. Translate the following words and word-combinations into English:**

Череп; шкірний; обмежувати; співвідноситися; порожнина; безпосередньо; брова; чоло; жувальний; потилично-піднебінний; підборіддя; скроня; круговий; піднебіння; внутрішній; зовнішній; язик; віко; щока; піднебінний мигдалик; під'язиковий; слинна залоза; вилиця; межувати, слугувати межею; скроневий; горло, зів.

**Ex. 5. Translate the text "Head" into Ukrainian.**

**Ex. 6. Answer the questions:**

1. How many bones does the skull consist of? 2. What groups are the bones of the skull organized into? 3. Where are the auditory ossicles located? 4. How many parts are the bones of the skull divided into? What are they? 5. How many bones does the cranial vault consist of? What are they? 6. What do the facial bones form? 7. What facial bones do you know? 8. What bones which are the parts of the cranial vault also contribute to the face? 9. What do the facial bones provide? 10. What are there in the oral cavity? 11. What skeletal muscles of the face do you know?

**Ex. 7. Insert the missing words:**

1. Bones of the skull are organized into the following groups: the auditory \_\_, the cranial vault, and the facial bones. 2. The bones of cranial vault include the parietal, \_\_, frontal, occipital, sphenoid, and ethmoid bones. 3. The facial bones form the structure of the face in the \_\_ skull. 4. The facial bones are the \_\_, mandible, zygomatic, \_\_, nasal, lacrimal, vomer, and inferior nasal concha bones. 5. The frontal and ethmoid bones also \_\_ to the face. 6. The forehead, the temples, eyes, \_\_, the cheeks, the \_\_, nose, oral cavity and chin compose the face.

**Ex. 8. Skim through the data of the following table and answer the questions:**

1. What bones of the cranial vault are paired? 2. What bones of the cranial vault are unpaired? 3. What bones of the face are unpaired? 4. What bones of the face are paired? 5. What groups are the

bones of the skull divided into? 6. What bones of the cranial vault do you know? 7. What are the auditory ossicles?

BONES		NUMBER	
Skull			
<b>Cranial vault</b> Paired	Parietal	2	
	Temporal	2	
	Unpaired	Frontal	1
		Occipital	1
		Sphenoid	1
		Ethmoid	1
<b>Face</b> Paired	Maxilla	2	
	Zygomatic	2	
	Palatine	2	
	Nasal	2	
	Lacrimal	2	
	Inferior nasal concha	2	
	Unpaired	Mandible	1
		Vomer	1
<b>Auditory Ossicles</b>			
Malleus	2		
Incus	2		
Stapes	2		
Total:		28	

**Ex. 9. Match the following terms with their meanings:**

1. cheek	1. hard, conical structure set in the alveoli of the upper or lower jaws, used in mastication and assists in articulation.
2. nose	2. muscular organ occupying most of the oral cavity when the nose is closed.
3. eyebrow	3. one of two muscular folds with an outer mucosa having a stratified squamous epithelial surface layer; they form the anterior border of the mouth.
4. eyelash	4. movable fold of the skin in front of the eyeball.
5. eyelid	5. eight skull bones that surround and protect the brain.
6. cranial vault	6. hair at the margins of the eyelids.
7. lip	7. short hairs on the bony ridge above the eyes.
8. tongue	8. visible structure that forms a prominent feature of the face.
9. tooth	9. side of the face forming the lateral wall of the mouth.

**OVERVIEW**

The head is divided into the cranial and the facial parts. The skull is composed of 28 separate bones organized into the following groups: the cranial vault, the auditory ossicles, and the facial bones. The cranial vault consists of 8 bones that protect the brain. They include the parietal, temporal, frontal, occipital, sphenoid, and ethmoid bones. The facial bones form the structure of the face in the anterior skull but do not contribute to the cranial vault. They are the maxilla, mandible, zygomatic, palatine, nasal, lacrimal, vomer, and inferior nasal concha bones. The frontal and ethmoid bones also contribute to the face. The forehead, the temples, eyes, eyebrows, the cheeks, the cheekbones, nose, oral cavity and chin compose the face. In the oral cavity there are 32 permanent teeth, hard and soft palates, palatine tonsils, salivary glands, and a tongue. The types of

the teeth are incisors, canines, premolars, and molars.

**LESSON 23**  
**CELL**

**VOCABULARY**

**originate** [q'r'ɔ:ʃneʃt]/брати початок, походити, виникати  
**fertilize** [f'wɛtʃaʃz]/запліднювати  
**egg** [eg]/ яйцеклітина  
**proceed** [prə'si:d]/розвиватися  
**embryonic** [embr'ɔ:nɪk]/зародковий, ембріональний  
**specialize** [speʃəlaʃz]/адаптуватися, пристосовуватися  
**plasma** [plæzmq]/плазма  
**bound** [baund]/обмежувати, ставити межу, стримувати  
**carbohydrate** [kæ'baɪdrət]/вуглевод  
**capable** [kə'peɪbəl]/дієдатний  
**rest** [rest]/решта  
**enclose** [ɪn'kloʊz]/оточувати, обгороджувати; містити  
**osteoclast** [ost'ɔ:klast]/остеокласт, остеокластоцит  
**surround** [sq'raund]/оточувати

**nucleus** (pl. nuclei) [nju'kli:qz]/ядро (клітини)  
**deoxyribonucleic** [di:'ɔksɪraɪb'ɔ:nju'kli:k]/дезоксирібонуклеїновий  
**protein** [prə'ti:n]/білок, протеїн  
**fuse** [fju:z]/об'єднувати (ся), переплітатися  
**pore** [pɔ:]/пора  
**disperse** [dɪs'pɜ:s]/розповсюджувати  
**thin** [θɪn]/тонкий  
**strand** [strænd]/ланцюг, нитка; молекулярний ланцюжок  
**ribonucleic** [raɪb'ɔ:nju'kli:k]/рібонуклеїновий  
**hereditary** [hɪ'redɪt(ə)rɪ]/спадковий  
**cytosol** [saɪtəʊsəl]/цитозоль  
**inclusion** [ɪn'klu:ʒ(ə)n]/включення  
**support** [sq'pɔ:t]/підтримувати  
**fiber** [faɪbɜ]/волокно  
**create** [kri'eɪt]/породжувати, робити, створювати, творити  
**compartment** [kəm'pɜ:tmənt]/відділення (частина чого-небудь)

**RULES OF READING**

Letters	Sounds	Examples
j	[ʃ]	job
tion ssion	[ʃ(q)n]	injection prescription mission
ture	[ʃq]	fracture
qu	[kw]	quite
dia	[daʃq]	diagnose
bi	[baʃ]	biology antibiotic

**Ex. 1. Read the following words:**

Liquid; quickly; require; quadrant; equal; diameter; diaphysis; dialogue; diagonal; bicuspid; subject; June; injure; major; majority; prevention; examination; addition; condition; respiration; circulation; observation; expression; profession; mixture; structure; manufacture; temperature.

**WORD-BUILDING**

**Ex. 2. Familiarize yourself with the following material:**

**Suffixes of Noun:**

**-ion (-ation, -tion, -ssion)** (denote condition or phenomena)

to organize *організовувати* – organization *організація*

to compress *стискати, здавлювати* – compression *стиснення, стискання*

**Term-element:**

**cyto-** (cell)



cytophagy *цитофагія, поглинання клітин фагоцитами*

**Ex. 3. Read and translate the following words:**

A. Prevention; investigation; information; portion; transplantation; accumulation; production; radiation; decision; formation; infarction.

B. Cytoskeleton, cytoplasm, cytokinesis, cytology, cytoplasmic.

**GRAMMAR:**

**Ex. 4. Familiarize yourself with the data of the following table:**

**PERFECT TENSES**  
**(Active Voice, Affirmative Form)**  
**to have + V<sub>3</sub>**

<b>Present Perfect Tense</b>	I (you, we, they)	<b>have</b>	+ V <sub>3</sub>	These cells have divided today.
	He (she, it)	<b>has</b>		Cell has divided into two ones this week.
<b>Past Perfect Tense</b>	I (he, she, it, you, we, they)	<b>had</b>	+ V <sub>3</sub>	Yesterday he had written an article before you came.
<b>Future Perfect Tense</b>	I (we)	<b>shall have</b>	+ V <sub>3</sub>	Tomorrow the cells will have divided into two ones by 3 p.m.
	He (she, it, you, they)	<b>will have</b>		

**Ex. 5. Read and translate the following sentences:**

1. Research works of many scientists have helped to estimate that the rate of heart beat increases depending on the different emotions. 2. They have already performed on some operations. 3. Professor has lately published new book on the functions of the cell. 4. Physicians had determined the cause of disease by 8 o'clock p.m. 5. Tomorrow they will have written an article before you come.

**Ex. 6. Put the verbs into correct tense forms:**

1. Physiologists (to determine) that new cells are produced by cell division. 2. The scientists (to discuss) the mechanisms and physiological changes occurring during cell division. 3. He (to estimate) that mitosis is the division of the nucleus into two nuclei. 4. Our studies (to show) that one member of each autosomal pair is derived from the person's father, and the other is derived from the mother. 5. Heart transplantation (to become) a routine procedure.

**Ex. 7. Translate the following sentences into English:**

1. Пацієнт відновив (to restore) своє здоров'я до кінця вересня. 2. Він погано спав до того, як прийшов лікар. 3. Він вже оглянув усіх пацієнтів. 4. Вчені відзначили серйозні зміни в структурі клітини. 5. Ми закінчили свої дослідження щодо (on) поділу клітини.

**MODAL VERBS:**  
**SHOULD AND WOULD**

**Ex. 8. Match the English sentences with their Ukrainian equivalents. Try to memorize when *would* is used as a modal verb:**

1. He would do it. 2. He wouldn't say where he had picked up the information. 3. That would be her car. 4. Would you please help us? 5. He would sooner die than ask their pardon.

1. Чи не могли б ви допомогти нам? (ввічливе прохання). 2. Він скоріш помре, ніж попросить у них вибачення (віддавати перевагу чомусь). 3. Це, мабуть, її машина (ймовірність). 4. Він дійсно хотів зробити це (наполягання). 5. Він нізащо не хотів говорити, звідки він про це дізнався (бажання).

**Ex. 9. Translate the following sentences:**

1. A person who was in contact with cholera should be vaccinated. 2. Would you order some medicines for me? 3. You should consult a doctor if the drugs caused any unwanted effects. 4. Now would you like to sit up and I'll take your blood pressure? 5. The patient should be given an X-ray. 6. She would do a thing like that. She is always borrowing things without asking.

**Ex. 10. Put sentences negative and interrogative as in a model:**

**MODEL:**

You **should** shake the bottle before use.

You **shouldn't** shake the bottle before use.

**Should** I shake the bottle before use?

1. You should take the drug after meals. 2. You should take the drug on an empty stomach. 3. You should keep this medicine in the fridge. 4. You should rub this ointment into the skin. 5. You should eat high-calorie food with limited liquid and salt. 6. You should chew these tablets before swallowing. 7. You should try to do these exercises three times a day, preferably on an empty stomach.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 11. Read VOCABULARY and memorize new words.**

**Ex. 12. Insert the missing letters and translate the following words:**

Prote\_n; po\_e; cap\_ble; deox\_ribonucleic; proce\_d; hered\_tary; nu\_leus; compa\_tment; ori\_inate; disp\_rse; c\_tosol; carbo\_ydrate; osteocl\_st; fu\_e; b\_und; stra\_d; en\_lose; ribon\_cleic; sur\_ound; s\_pport; f\_ber.

**Ex. 13. Read the following words and word-combinations:**

Substance; originate; variety; plasma; protein fiber; extracellular; nucleus; cycle; osteoclast; deoxyribonucleic acid; throughout; hereditary; cytoplasm; cytosol; organelle; particular function; manufacture; to separate; unique.

**Ex. 14. Read the following text:**

**CELL**

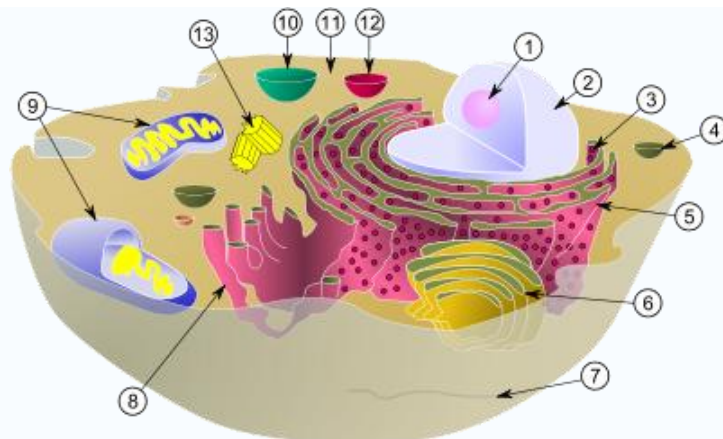
A cell is the structural and functional unit of living organism. Trillions of cells and the substances between them compose the human body. Every cell contains water, protein, carbohydrates, acids, fats, and minerals. All human cells originate from a single fertilized egg, and as differentiation proceeds during embryonic development. Cells specialize and give rise to a wide variety of cell types such as nerve, muscle, bone, fat, and blood cells.

The plasma membrane, nucleus and cytoplasm compose the cell.

The plasma or cell membrane is the outer component of a cell. The plasma membrane consists primarily of lipids and proteins and small amounts of carbohydrates. Substances outside the plasma membrane are extracellular or intercellular, and substances inside it are intracellular. The functions of the plasma membrane are to enclose and support the cell contents and to determine what moves into and out of the cell.

The nucleus is a large membrane-bound structure usually located near the center of the cell. All cells of the body have a nucleus at some point in their life cycle, although some cells such as red blood cells lose their nuclei as they develop. Other cells, such as osteoclasts and skeletal muscle cells, contain more than one nucleus. The nucleus is surrounded by a nuclear envelope composed of two membranes separated by a space. At many points on the surface of the nuclear envelope the inner and outer membranes fuse to form pore-like structures, the nuclear pores. Deoxyribonucleic acid (DNA) and associated proteins are dispersed throughout the nucleus as thin strands (23 pairs of chromosomes) approximately 4 to 5 nm in diameter. DNA is the hereditary material of the cell. It controls the activities of the cell through ribonucleic acid (RNA). The nucleus directs the cell's activities.

Cytoplasm, the cellular material outside the nucleus but inside the plasma membrane, is approximately half cytosol and half organelles. Cytosol consists of a fluid portion, a cytoskeleton, and cytoplasmic inclusions. The cytoskeleton supports the cell and enables cell movements. It consists of protein fibers. Organelles are small structures within cells and are specialized for particular functions such as manufacturing proteins or producing adenosine triphosphate (ATP). Most organelles have membranes that are similar to the plasma membrane. The membranes separate the organelles from the rest of the cytoplasm, creating a subcellular compartment with its own enzymes and capable of carrying out its own unique chemical reactions. The nucleus is an example of an organelle. Mitochondria are small bodies, produce energy in the cell. Endoplasmic reticulum is a series of canals within the cell. Some canals contain small bodies called ribosomes. They help make substances for the cell.



*Diagram of a Typical Cell.*

**Organelles:** (1) nucleolus; (2) nucleus; (3) ribosome; (4) vesicle; (5) rough endoplasmic reticulum (ER); (6) Golgi apparatus; (7) Cytoskeleton; (8) smooth ER; (9) mitochondria; (10) vacuole; (11) cytoplasm; (12) lysosome; (13) centrioles

**Ex. 15. Translate the following words and word-combinations into English:**

Функціональна одиниця; ембріональний розвиток; ядро (клітини); брати початок, походити, виникати; цитозоль; оточувати; дезоксирибонуклеїновий; розповсюджувати; білок, протеїн; вуглевод; волокно; остеокласт, остеокластоцит; відділення; молекулярний ланцюжок; об'єднувати(ся); обмежувати, ставити межу, стримувати; спадковий.

**Ex. 16. Translate the text "Cell".**

**Ex. 17. Answer the questions:**

1. What is the cell? 2. What do all human cells originate from? 3. What is the cell composed of? 4. What is cell membrane? 5. What is the cell membrane composed of? 6. What is the nucleus? 7. What is nucleus surrounded by? 8. What is cytoplasm? 9. What does cytosol consist of? 10. What are organelles?

**Ex. 18. Do you agree, disagree or partially agree with the statements below:**

1. Millions of cells and the substances between them compose the human body. 2. The cell consists of the plasma membrane, enzymes, and cytoplasm. 3. The plasma membrane is the inner component of a cell. 4. The plasma membrane consists of lipids, proteins, and carbohydrates. 5. The function of the plasma membrane is to play a role in the regulation of DNA function. 6. The nucleus is a hollow tubule composed primarily of protein units. 7. The nuclear envelope is composed of two membranes separated by a space. 8. DNA is the hereditary material of the cell. 9. The cellular material outside the nucleus but inside the plasma membrane is osteoclast. 10. The cytoskeleton increases the mechanical stability and flexibility of the plasma membrane.

**Ex. 19. Match the following terms with their definitions:**

1. Cell	1. Cell membrane; outermost component of the cell, surrounding and banding the rest of cell contents.
2. Plasma membrane	2. Basic living subunit of all living things.
3. Nuclear envelope	3. Protein that acts as a catalyst.
4. Nucleus	4. Macromolecule consisting of long sequences of amino acids linked together by peptide bonds.
5. Cytoplasm	5. Protoplasm of the cell surrounding the nucleus.
6. Lipid	6. Monosaccharide (simple sugar) or organic molecules composed of monosaccharides bound together by chemical bonds.
7. Protein	7. Cell organelle containing most of genetic material of the cell.
8. Carbohydrate	8. Substance composed principally of carbon, oxygen, and hydrogen; contains a lower ratio of oxygen to carbon and is less polar than carbohydrates.
9. Nuclear pores	9. Any foreign or other substance containing the nucleus.
10. Cytoplasmic inclusion	10. Specialized part of a cell serving one or more specific individual functions.
11. Organelle	11. Pore-like openings in the nuclear envelope where the inner and outer membranes fuse.
12. Enzyme	12. Double membrane structure surrounding and enclosing the nucleus.

**Ex. 20. Write out key words of the text "Cell".**

**Ex. 21. Compose the plan to the text "Cell".**

**Ex. 22. Narrate the text "Cell".**

**These phrases will help you to narrate the text:**

The text describes ...

У тексті описується ...

I'd like to start with a description of ...

Я хотів би розпочати з опису ...

It is important to point out that ...

Важливо вказати, що ...

Let me pass to the description of ...

Дозвольте перейти до опису ...

The author makes it clear that...

Автор чітко стверджує, що ...

In conclusion let me remind again that ...

На завершення дозвольте нагадати знову, що ...

It is necessary to make further investigation of ...

Необхідно здійснити подальше дослідження ...

**Ex. 23. Make up a dialogue "The Structure of the Cell".**

**Ex. 24. Read and translate the following text:**

**CELL DIVISION**

The scientists have determined that the new cells necessary for growth and tissue repair are produced by cell division. A parent cell divides to form two daughter cells, each of which has the same amount and type of DNA as the parent cell. Because DNA determines the structure and function of cells, the daughter cells have the same structure and perform the same functions as the parent cell.

Cell division involves two major events: the division of the nucleus to form two new nuclei, and the division of the cytoplasm to form two new cells, each of which contains one of the newly formed nuclei. The division of the nucleus occurs by mitosis, and division of the cytoplasm is called cytokinesis.

Physiologists have estimated that mitosis is the division of the nucleus into two nuclei, each of which has the same amount and type of DNA (deoxyribonucleic acid) as the original nucleus. The DNA, which was dispersed as chromatin in interphase, condenses in mitosis to form chromosomes. In each of the human somatic cells, which include all cells except the sex cells, there are 46 chromosomes, which are referred to as a diploid number of chromosomes. Sex cells have half the number of chromosomes as somatic cells. The 46 chromosomes in somatic cells are organized into 23 pairs of chromosomes. Twenty-two of these pairs are called autosomes. Each member of an autosomal pair of chromosomes looks structurally alike, and together they are called a homologous pair of chromosomes. One member of each autosomal pair is derived from the person's father, and the other is derived from the mother. The remaining pair of chromosomes comprises the sex chromosomes. In females sex chromosomes look alike, and each is called an X chromosome. In males the sex chromosomes do not alike, one is an X chromosome, and other is smaller and is called a Y chromosome.

Mitosis is divided into four stages: prophase, metaphase, anaphase, and telophase. Although each stage represents major events, mitosis is a continuous process, and there are no jumps from one stage to another.

Cytokinesis begins in anaphase, continues through telophase, and ends in the following interphase. The first sign of cytokinesis is the formation of a cleavage furrow, or puckering of the cell membrane, which forms midway between the centrioles. A contractile ring composed primarily of actin filaments pulls the plasma membrane inward, dividing the cell into two halves. Cytokinesis is complete when the two halves separate to form two new cells.

## NOTES

**event** [*ɪ*'vent] перетворення

**mitosis** [*m*'ɪtəʊsɪs] каріокінез, мітоз

**cytokinesis** [*ˈ*saɪtəʊkɪ'nɪsɪs] цитокінез, клітинний поділ

**disperse** [*d*'ɪspɜːs] диспергувати, розсіювати частини

**condense** [*k*ɒn'dens] збирати до купи, зводити разом

**refer** [*r*'ɪfəː] стосуватися

**diploid** [*d*'ɪp'lɔɪd] диплоїдний

**alike** [*ə*'laɪk] схожий, подібний; такий самий

**homologous** [*h*'ɒmə'lɒɡəs] гомологічний

**derive** [*d*'ɪrɪv] походити

**cleavage furrow** [*ˈ*kleɪvɜːvʊː'fʊːrəʊ] борозна дрібнення

**puckering** [*ˈ*pʌkərɪŋ] виникнення борозни

**centriole** [*ˈ*sentri'ɔʊl] центріоль

**contractile** [*k*ɒn'trɪk'taɪl] стискальний, стискувальний; скорочувальний

**filament** [*f*'ɪləmɛnt] філамент, нитка; волоконце; волокно

**pull** [*p*ʊl] притягувати, втягувати

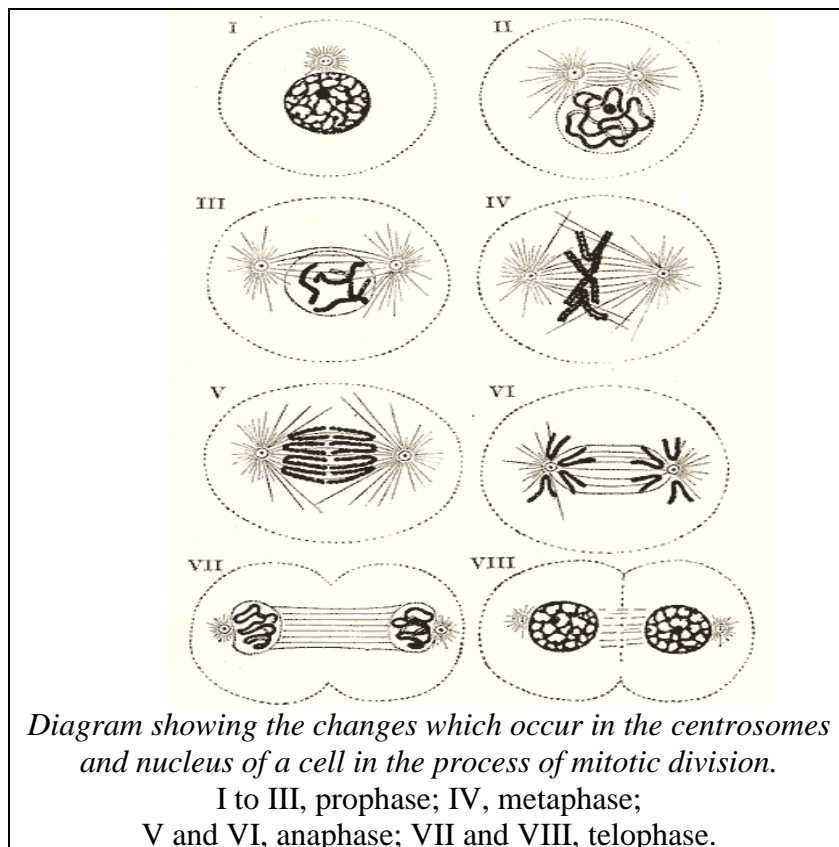
**inward** [*ˈ*ɪnwəd] всередину

### Ex. 25. Answer the following questions:

1. How are new cells produced? 2. What stages does cell division consist of? 3. What is mitosis? 4. Why does the DNA condense in mitosis? 5. What are autosomes? 6. What is X chromosome? And Y chromosome? 7. How many stages is mitosis divided into? What are they? 8. What is cytokinesis? 9. What stage does it consist of?

### Ex. 26. Translate the following sentences into English:

1. Клітина – це структурна одиниця організму людини. 2. Основними структурами клітини є оболонка, цитоплазма та ядро. 3. Клітинна оболонка, або зовнішня клітинна мембрана, відокремлює вміст клітини від позаклітинного середовища. 4. Під клітинною оболонкою міститься цитоплазма. 5. У цитоплазмі, крім основної речовини, розміщені загальні та спеціальні органели і численні цитоплазматичні включення. 6. Органели виконують важливі, специфічні для кожної клітини функції. 7. Життєво необхідною частиною клітини є її ядро. 8. Форма ядра іноді відповідає формі клітини.



## OVERVIEW

A cell is the structural and functional unit of living organism. Every cell contains water, protein, carbohydrates, acids, fats, and minerals. The plasma membrane, nucleus and cytoplasm compose the cell. The plasma is the outer component of a cell. The plasma membrane consists of lipids and proteins and small amounts of carbohydrates. The functions of the plasma membrane are to enclose and support the cell contents and to determine what moves into and out of the cell. The nucleus is a large membrane-bound structure usually located near the center of the cell. The nucleus is surrounded by a nuclear envelope composed of two membranes separated by a space. Deoxyribonucleic acid is the hereditary material of the cell. It controls the activities of the cell. The nucleus directs the cell's activities. Cytoplasm is approximately half cytosol and half organelles. Cytosol consists of a fluid portion, a cytoskeleton, and cytoplasmic inclusions. Organelles are small structures within cells. They are specialized for particular functions such as manufacturing proteins or producing adenosine triphosphate (ATP). Mitochondria are small bodies, which produce energy in the cell. Endoplasmic reticulum is a series of canals within the cell. Some canals contain small bodies called ribosomes. They help make substances for the cell.

## LESSON 24 TISSUES

### VOCABULARY

**tissue** [ˈtɪʃjuː; ˈtɪʃuː] тканина

**epithelium (pl. epithelia)** [ˈepɪˈθiːliəm] епітелій

**connective** [kəˈnektɪv] сполучний.

з'єднувальний

**diverse** [daɪˈvɜːs] різноманітний, різнотиповий (різний)

**define** [dɪˈfaɪn] визначати, давати визначення

**cover** [ˈkʌvə] покривати

**surface** [ˈsqːfɪs] поверхня

**attach** [əˈtʌtʃ] прикріплювати, зв'язувати **adipose**

[ˈædɪˈpʊs] жировий

**dermis** [ˈdɜːmɪs] дерма, власне шкіра

**tendon** [ˈtendən] сухожилля

**ligament** [ˈlɪɡəmənt] зв'язка

**bone marrow** [ˈboʊn ˈmɔːrəʊ] кістковий мозок

**rigid** [ˈrɪɡɪd] жорсткий, твердий

**smooth** [smuːð] гладкий

**striated** [ˈstraɪeɪtɪd] посмутований

**lining** [ˈlaɪnɪŋ] прошарок, слизова оболонка  
**gland** [ˈglænd] залоза  
**basement membrane** [ˈbeɪsmənt ˈmembreɪn] базальна мембрана, сполучнотканинна перетинка під епітелієм  
**penetrate** [ˈpenɪtreɪt] проникати всередину, проходити скрізь, пронизувати  
**matrix** [ˈmeɪtrɪks] матрикс, міжклітинний матеріал; основна речовина цитоплазми

**voluntary** [ˈvɒlənt(ə)rɪ] довільний  
**pump** [pʌmp] нагнітати  
**pupil** [ˈpjʊːpl] зіниця  
**conduct** [kɒnˈdʌkt] проводити  
**neuron** [ˈnjuːrɒn] нейрон  
**neuroglia** [njuːˈrɒɡliə] нейрогліальна клітина, нейроглія  
**glue** [ɡluː] клей; скріплювальна речовина  
**spinal cord** [ˈspaɪnəl ˈkɔːd] спинний мозок

### RULES OF READING

Letters	Sounds	Examples	Notes
wh	[w]	when why	перед голосними, крім <i>o</i>
wh	[ɪ]	whom whole	перед літерою <i>o</i> у наголошеному складі

#### Ex. 1. Read the following words:

Write; wrong; whole; who; white; when; where.

### WORD-BUILDING

#### Ex. 2. Familiarize yourself with the following material:

##### Suffix of Adjectives:

**-ant (-ent)**

to depend *залежати* – dependent *залежний*

to resist *опиратися* – resistant *опірний, здатний опиратися*

#### Ex. 3. Read and translate the following words:

Important; constant; prominent; different; resistant; independent; ancient.

### GRAMMAR:

#### PERFECT TENSES

(Active Voice, Affirmative Form)

#### Ex. 4. Read and translate the following sentences and determine their tense-forms:

1. He has estimated that tissues change dramatically. 2. The size of this skeletal muscle has increased. 3. Recent studies have shown that these drugs can reduce deaths from various diseases. 4. Research works have given physiologists the possibility to find out that most epithelia have basement membranes. 5. Physiologists have classified the tissue types according to the structure or function.

#### PERFECT TENSES

(Active Voice, Interrogative Form)

#### Ex. 5. Familiarize yourself with the data of the following table:

Tense	Questioning word	Auxiliary verb	Subject	Predicate	Example
Present Perfect Tense	What Why Where	<b>have</b>	I, you, we they	<b>V<sub>3</sub></b>	What <b>has</b> the scientist <b>determined</b> this year?
	How many	<b>has</b>	he, she, it		
Past Perfect Tense	How much	<b>had</b>	I, he, she, it, you, we, they	<b>V<sub>3</sub></b>	How many parts <b>had</b> the cell <b>divided</b> into by 5 o'clock

				yesterday?
Future Perfect Tense	<b>shall</b> <b>will</b>	I, we he, she, it, you, they	<b>have + V<sub>3</sub></b>	What text <b>will</b> Helen <b>have translated</b> by 3 o'clock tomorrow?

**Ex. 6. Translate the following interrogative sentences into Ukrainian:**

1. Has the computer analyzed the patient's condition? 2. Have these authors published their medical articles? 3. What inventions in medicine has V.P. Filatov made? 4. What hospitals have the Romans established? 5. What countries has the child mortality declined in during the last decade? 6. Why have they used these methods of treatment?

**Ex. 7. Make the following sentences interrogative:**

1. Muscular contractions have pumped blood through the circulatory system. 2. Physiologists have estimated that nervous tissue conducts electrical signals. 3. They have noted excessive activity of tissues. 4. The scientists have discussed physiological changes occurring during disease. 5. By 2020, the number of people over 60 will have grown to one billion. 6. The physiologists have determined the structure of the bone. 7. Myoblasts have produced skeletal muscle fibers. 8. The kidneys have developed from mesoderm. 9. The cells have produced by cell division. 10. The patient has complained of dry cough and high temperature.

**READING AND DEVELOPING SPEAKING**

**Ex. 8. Insert the missing letters:**

C\_ver; l\_ning; ti\_sue; basem\_nt membrane; epit\_elium; s\_rface; conne\_tive; matri\_; sm\_oth; dive\_se; adi\_ose; atta\_h; ri\_id.

**Ex. 9. Translate the following words and word-combinations into Ukrainian:**

Spinal cord; gland; define; penetrate; ligament; tendon; attach; connective tissue; to cover the surface; diverse; pump; lining; conduct; adipose; smooth muscle; dermis; rigid.

**Ex. 10. Read the following words and word-combinations:**

Matrix; grouped; epithelial; muscular; nervous; classified; extracellular; surface; secrete; adipose; striated; voluntary; attach; cover; wall of artery; liquid; neuron.

**Ex. 11. Read the following text:**

**TISSUES**

Cells are grouped into tissues, and each tissue type is specialized to perform specific functions. The four basic tissue types are epithelial, connective, muscular, and nervous tissues. Epithelial and connective tissues are the most diverse of the four tissue types and are components of every organ. They are classified according to the structure. Muscular and nervous tissues are defined mainly according to their functions.

**Epithelium** consists of cells that have very little extracellular material between them. Epithelium covers surfaces, e.g., the outside of the body and the lining of the digestive tract, the vessels and many body cavities. It also forms structures, e.g., glands. Most epithelia have basement membranes. The basement membrane is a specialized type of extracellular material. It is secreted by the epithelial cells and attaches the epithelium to the underlying tissues. Blood vessels do not penetrate the basement membrane to reach epithelium. Epithelia are classified according to the number of cell layers and the shape of the cells.

**Connective** tissue consists of cells separated from each other by nonliving extracellular matrix. The extracellular matrix results from the activity of specialized connective tissue cells.



Connective tissue is classified according to the type of protein and proportions of protein and fluid in the matrix. Connective tissue is subdivided into adipose tissue (fat), fibrous connective tissue, bone, and blood. Connective tissue forms the dermis of the skin, inner portion of the skin, bones, tendons, ligaments, the walls of large arteries, bone marrow, liver and others. Blood is somewhat unique among the connective tissues because the matrix between the cells is liquid. Thus, although the cells of most other connective tissues are more or less stationary within a relatively rigid matrix, blood cells are free to move within a fluid matrix.

**Muscular** tissue has the ability to contract. The three types of muscular tissue – skeletal, cardiac, and smooth muscle – are classified according to both structure and function. Skeletal (striated voluntary) muscles attach to bone and are responsible for body movement. Cardiac (striated involuntary) muscles are responsible for pumping blood through the circulatory system. Smooth (nonstriated involuntary) muscles form the walls of hollow organs, the pupil of the eye, and other structures.

**Nervous** tissue is characterized by the ability to conduct electrical signals. It consists of neurons, or nerve cells, which are responsible for conductive ability, and support cells (neuroglia). Neuroglia (nerve glue) is the support cells of the brain, spinal cord, and peripheral nerves.

**Ex. 12. Translate the following words and word-combinations into English:**

Прикріплювати, зв'язувати; визначати, давати визначення; епітелій; поверхня; тканина; нагнітати; спинний мозок; проводити; різноманітний, різнотиповий (різний); залоза; дерма; зв'язка; жорсткий, твердий; сполучна тканина; покривати; слизова оболонка.

**Ex. 13. Translate the text "Tissues" into Ukrainian.**

**Ex. 14. Answer the following questions:**

1. What is the tissue?
2. What types of tissue do you know?
3. What is the epithelium composed of?
4. What does the connective tissue consist of?
5. What groups is connective tissue subdivided into?
6. What types of muscular tissue are there?
7. What is the nervous tissue characterized by?

**Ex. 15. Crossword:**

1.				<b>t</b>							
2.				<b>i</b>							
		3.		<b>s</b>							
			4.	<b>s</b>							
	5.			<b>u</b>							
		6.		<b>e</b>							

1. One of the types of tissue, which can be simple, stratified, pseudostratified, and transitional.
2. Noncellular substance surrounding the cells of connective tissue.
3. Bone-forming cell.
4. One of the types of muscular tissue.
5. Cells in the nervous system other than neurons.
6. The fundamental unit of every living organism.

**Ex. 16. Write out key words of the text "Tissues".**

**Ex. 17. Compose the plan to the text "Tissues".**

**Ex. 18. Speak on:**

- Epithelial tissue;
- Connective tissue;
- Muscular tissue;
- Nervous tissue.

**Ex. 19. Memorize the following terms:**

**Classification of Epithelium**

Types of epithelium	Shape of cells
Simple (single layer of cells) простий епітелій; тип епітелію, що складається з одного шару клітин	Squamous [ˈskweɪmqs] Cuboidal [ˈkjuːbɔɪdɪq] Columnar [kɒlˈʌnɪnq]
Stratified [ˈstræɪtʃfaɪd] (more than one layer of cells) багатошаровий епітелій; епітелій, в якому клітини розміщені кількома шарами	Squamous Cuboidal (very rare) Columnar (very rare)
Pseudostratified (modification of simple epithelium) псевдобагатошаровий епітелій	Columnar
Transitional (modification of stratified epithelium) перехідний епітелій, багатошаровий епітелій, кількість шарів у якому змінюється в залежності від функціонального стану органа	Roughly cuboidal or many surfaced

**NOTES:**

**stratified** багатошаровий

**stratified squamous** лускатий

**squamous** плоский

**cuboidal** кубічний

**columnar** стовпчастий

**transitional** перехідний; проміжний

**Ex. 20. Read and translate the following sentences:**

1. The major types of epithelia are simple and stratified squamous epithelia, simple and stratified cuboidal epithelia, simple, pseudostratified and stratified columnar epithelia, and transitional epithelium. 2. Simple epithelium generally is involved in diffusion, filtration, secretion, or absorption. 3. Squamous cells function in diffusion and filtration. 4. Cuboidal or columnar cells secrete or absorb. 5. Connective tissue cells are blast cells (form the matrix), cyte cells (maintain it), and clast cells (break it down for remodeling). 6. The cells' names end with suffixes according to the cells' functions as blasts [bla:sts], cytes [saɪts], or clasts [kla:sts]. For example, fibroblasts are cells that form fibrous connective tissue, and chondrocytes are cells that maintain cartilage (chondro- means cartilage). Osteoblasts form bone (osteo- means bone), osteocytes maintain it, and osteoclasts break it down.

**Ex. 21. Translate the following sentences into English:**

1. Тканини – це спільність клітин і позаклітинної речовини. 2. В організмі людини виділяють чотири типи тканин: епітеліальну, сполучну, м'язову і нервову. 3. Епітеліальні клітини можуть бути плоскими, кубічними і стовпчастими, або циліндричними. 4. Простий стовпчастий епітелій вистилає внутрішню поверхню тонкої та товстої кишок та жовчного міхура. 5. Лускатий епітелій вистилає поверхню очеревини, плеври, осердя. 6. Простий плоский епітелій покриває зсередини кровеносні та лімфатичні судини. 7. Простий кубічний епітелій вистилає каналці (tubule) нирок та деякі бронхи.

**Ex. 22. Read and memorize the following words:**

**hinder** [ˈhɪndə] перешкоджати, заважати

**damage** [ˈdæmɪʃ] пошкоджувати

**maintain** [meɪnˈteɪn] підтримувати, утримувати, зберігати

**capillary** [kəˈpɪləri] капіляр

**alveolus** (pl. alveoli) [ˈælvəˈjuːli] альвеола,

**decrease** [dɪˈkriːs] зменшувати(ся), скорочувати(ся)

**urinary** [ˈjʊrɪnəri] сечовий

**process** [ˈprɒsɪs] відросток, виріст

**integrate** [ˈɪntɪɡreɪt] об'єднувати(ся)

**evaluate** [ɪˈvæljueɪt] оцінювати

ячейка  
**tubule** [ˈtjuːbʊl] судина, каналець  
**cartilage** [ˈkɑːtɪʃɪl] хрящ  
**nutrient** [ˈnjuːtrɪjənt] поживна речовина  
**contract** [kənˈtrækt] скорочуватися

**data** [ˈdeɪtə] дані, відомості; інформація  
**support** [səˈpɔːt] підтримувати  
**permeable** [ˈpɜːmjəbəl] проникний, прохідний, негерметичний

**Ex. 23. Read the following text and get ready to narrate it:**

### TISSUES AND ORGANS

Epithelial tissue is necessary for protection, diffusion, filtration, secretion, absorption and others. Simple epithelium with its single layer of cells is found in organs in which the principal functions are diffusion (lungs), filtration (kidneys), secretion (glands), or absorption (intestines). The selective movement of materials through epithelium would be hindered by a stratified epithelium, which is found in areas where protection is a major function. The multiple layers of cells in stratified epithelium are well adapted for a protective role. Damaged cells are replaced by cells from deeper layers and a continuous barrier of epithelial cells is maintained in the tissue. Stratified squamous epithelium is found in areas of the body where abrasion can occur such as the skin, mouth, throat, esophagus, and anus. Cells involved in diffusion and filtration are normally flat and thin. For example, simple squamous epithelium forms blood and lymph capillaries, the alveoli of the lungs, and parts of the kidney tubules.

Connective tissue is found in tendons, ligaments, cartilages, bones, dermis of skin, arteries, spleen and others. This tissue produces new blood cells, allows growth of long bones, connects different structures, provides great strength and support for bones, transports oxygen, carbon dioxide, hormones, nutrients, waste products and has some other functions.

Muscular tissue has the ability to contract. Muscles contract to move the entire body, to pump blood through the heart and blood vessels, and to decrease the size of hollow organs such as the stomach. Skeletal muscles represent a large portion of the human body's total weight. Skeletal muscle attaches to the skeleton and by contracting causes the major body movements. Cardiac muscle is the muscle of the heart. The contraction of the cardiac muscle is responsible for pumping blood. Smooth muscles are widespread throughout the body and are responsible for a wide range of functions such as movements in the digestive, urinary, and reproductive systems.

Nervous tissue conducts impulses all over the body. Nerve cells, or neurons, located in the brain, spinal cord, and cell processes, conduct not only impulses and store "information", and in some ways integrate and evaluate data. Neuroglia support neurons and form a selectively permeable barrier between neurons and other cell types.

**Ex. 24. Answer the following questions:**

1. What is the function of epithelial tissue?
2. Where is connective tissue located?
3. What is the function of connective tissue?
4. What is cardiac muscle?
5. Where are nervous cells located?
6. What is the function of nervous tissue?

**Ex. 25. Read the data of the following table and speak on the location and functions of different tissues:**

**Functions and Location of Tissues.**

Tissue	Location
<b>Epithelial tissue</b>	
Simple squamous epithelium	Blood and lymph capillaries, alveoli of lungs, the inner part of the eardrum, smallest ducts of glands
Simple cuboidal epithelium	Part of kidney tubule, many glands, pancreatic duct, inside lining of eye, ducts of glands
Simple columnar epithelium	Stomach, small intestine, large intestine, uterus, bronchioles of lungs, auditory tubes, bile duct, gallbladder, ducts of glands
Stratified squamous epithelium	Skin, mouth and throat, epiglottis, larynx, esophagus, anus,

	vagina
Stratified cuboidal epithelium	Sweat gland ducts
Stratified columnar epithelium	Mammary gland ducts
Pseudostratified columnar epithelium	Larynx, nasal cavity, paranasal sinus, nasopharynx, trachea, salivary gland ducts
Transitional epithelium	Urinary bladder
<b>Connective tissue</b>	
Loose (alveolar) connective tissue	Muscles, nerves
Dense regular connective tissue	Tendons, ligaments between the vertebrae
Dense irregular connective tissue	Dermis of the skin, elastic arteries
Adipose tissue	Subcutaneous areas, renal pelvis, around kidneys
Bone marrow	Within marrow cavities of bone; yellow marrow in the shafts of long bones and red marrow in the ends of long bones and in short, flat, and irregularly shaped bones.
<b>Muscular tissue</b>	
Skeletal muscle	Attached to bones
Cardiac muscle	Heart
Smooth muscle	Walls of hollow organs, blood vessels, eyes, glands, skin
<b>Nervous tissue</b>	
Neuron	In the brain, spinal cord. Cell processes are located in all parts of the body.
Neuroglia	In the brain, spinal cord, ganglia, nerves

## OVERVIEW

Cells are grouped into tissues. The four basic tissue types are epithelial, connective, muscular, and nervous tissue. Epithelium consists of cells that have very little extracellular material between them. Epithelium covers surfaces, e.g., the outside of the body and the lining of the digestive tract, the vessels and many body cavities. Connective tissue consists of cells separated from each other by nonliving extracellular matrix. Connective tissue is classified according to the type of protein and proportions of protein and fluid in the matrix. Connective tissue is subdivided into adipose tissue, fibrous connective tissue, bone, and blood. Connective tissue forms the dermis of the skin, inner portion of the skin, bones, tendons, ligaments, the walls of large arteries, bone marrow, liver and others. Muscular tissue has the ability to contract. The three types of muscular tissue – skeletal, cardiac, and smooth muscle – are classified according to both structure and function. Nervous tissue is characterized by the ability to conduct electrical signals. It consists of neurons, or nerve cells, which are responsible for conductive ability, and support cells (neuroglia).

## LESSON 25

### SYSTEMS OF THE HUMAN BODY

#### VOCABULARY

**integumentary** [ɪnːtɪdʒju'mentqrɪ] покривний

**cardiovascular** [ˈkɑːdɪvʌsɪvʌlqrɪ] серцево-судинний

**respiratory** [rɪsˈpɑːsqrɪt(q)rɪ] дихальний

**digestive** [dɪˈdʒestɪv] травний

**urinary** [ˈjuːnrɪnrɪ] сечовий

**sweat** [swet] потовий

**posture** [ˈpɒstʃr] постава

**heat** [hi:t] теплота

**participate** [pɑːtɪsɪpeɪt] брати участь

**nutrient** [ˈnjuːtrɪnt] поживна речовина

**hormone** [ˈhɔːmɒn] гормон

**combat** [ˈkɒmbæt] боротися

**oxygen** [ˈɒksɪdʒn] кисень

**carbon dioxide** [ˈkɑːbɒn daɪˈɒksaɪd] вуглекислий газ

**elimination** [ɪˈlɪmɪneɪʃn] видалення, виведення

**wastes products** [weɪstz] продукти відходів

**ion** [aɪɒn] іон

**nervous** /'nɜ:vəs/ нервовий  
**receptor** /rɪ'septə/ рецептор  
**major** /'meɪdʒə/ головний  
**intellectual** /'ɪntelɪktʃuəl/ розумовий  
**endocrine** /'endəkraɪn/ ендокринний

**balance** /'bæləns/ рівновага  
**gonad** /'gɒnəd/ статеві залози  
**genitals** /'dʒenɪtəlz/ статеві органи  
**accessory** /ək'sesɔrɪ/ додатковий, допоміжний  
**passage** /'pæsɪdʒ/ прохід, протока

## READING AND DEVELOPING SPEAKING

### Ex. 1. Insert the missing letters:

Elim\_nation; horm\_ne; ox\_gen; n\_trient; carbon dio\_ide; parti\_ipate; endo\_rine; ne\_vous; swe\_t;  
di\_estive, hea\_t; l\_ng; bl\_od.

### Ex. 2. Match the medical terms and their translation:

- |                   |                      |
|-------------------|----------------------|
| 1. integumentary  | 1. дихальний         |
| 2. skeletal       | 2. сечовий           |
| 3. muscular       | 3. покривний         |
| 4. nervous        | 4. статевий          |
| 5. endocrine      | 5. м'язовий          |
| 6. cardiovascular | 6. скелетний         |
| 7. lymphatic      | 7. ендокринний       |
| 8. respiratory    | 8. лімфатичний       |
| 9. digestive      | 9. нервовий          |
| 10. urinary       | 10. травний          |
| 11. reproductive  | 11. серцево-судинний |

### Ex. 3. Translate the following words and word-combinations into Ukrainian:

Combine; subdivide; peripheral nervous system; major organ systems; respiratory; digestive; integumentary; sweat gland; protect; gonad; circulatory system; kidney; urinary bladder; urine; remove; esophagus; stomach; small and large intestines; digestion; nutrient; foreign substances; sensory receptors; allow body movements.

### Ex. 4. Read the following words and word-combinations:

Regulate temperature; prevent; cartilage; muscle; maintain posture; body heat; spinal cord; receive; metabolism; reproduction; pump; blood; throughout; remove; balance; respiratory passage; carbon dioxide; stomach; chemical process.

### Ex. 5. Read the following text:

#### ORGAN SYSTEMS

An organ system is a group of organs classified as a unit because of a common function or set of functions. The classification of organ systems is somewhat arbitrary. For example, the muscular and skeletal systems can be combined as the musculoskeletal system, or the nervous system can be subdivided into the peripheral and central nervous systems.

The human organism is divided into the following major organ systems: the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

The integumentary system consists of skin, hair, nails, and sweat glands. This system protects, regulates temperature, and prevents water loss.

The skeletal system includes bones, ligaments, cartilages, and joints. It protects internal organs, supports, and allows body movement, produces blood cells, and stores minerals.

The muscular system consists of muscles attached to the skeleton. This system allows body movement, maintains posture, and produces body heat.

The nervous system includes brain, spinal cord, nerves, and sensory receptors. It is a complex information system. It receives, processes and communicates information.

The endocrine system consists of endocrine glands. This system participates in the regulation of metabolism, reproduction, and controlling a large number of activities.

The cardiovascular system includes heart, blood vessels, and blood, which is pumped through the blood vessels by the heart. It transports nutrients, waste products, gases, and hormones throughout the body; plays a role in the regulation of body temperature.

The lymphatic system consists of lymph vessels, lymph nodes, and other lymph organs. This system removes foreign substances from the blood and lymph, maintains tissue fluid balance, and absorbs fats.

The respiratory system includes lungs and respiratory passages. It exchanges gases (oxygen and carbon dioxide) between the blood and the air and regulates blood pH.

The digestive system consists of mouth, esophagus, stomach, intestines, and accessory structures. This system performs the mechanical and chemical processes of digestion, absorption of nutrients, and elimination of wastes.

The urinary system includes kidneys, urinary bladder, and ducts that carry urine. It removes waste products from the circulatory system; regulates blood pH, ion balance, and water balance.

The reproductive system consists of gonads, accessory structures, and genitals of males and females. This system performs the processes of reproduction and controls sexual functions.

**Ex. 6. Translate the following words and word-combinations into English:**

Додатковий, допоміжний; покривний; нервовий; серцево-судинний; дихальний; травний; м'язовий; скелетний; сечовий; потовий; шкіра; запобігати втраті води; головний; кістка; суглоб; хрящ; зв'язка; розумовий; ендокринний; підтримувати поставу; мозок; чутливий рецептор; спинний мозок; брати участь; поживна речовина; серце; кров'яні судини; нагнітати; гормон; боротися; стороння речовина; нирки; сечовий міхур; протока; кисень; вуглекислий газ; видалення.


**Ex. 7. Translate text "Organ Systems" into Ukrainian.**

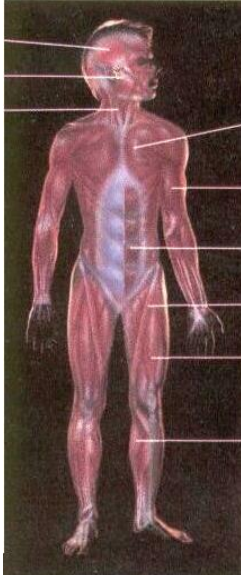
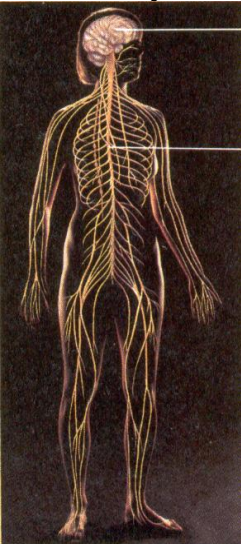

**Ex. 8. Describe the systems of the body using the data of the following table:**

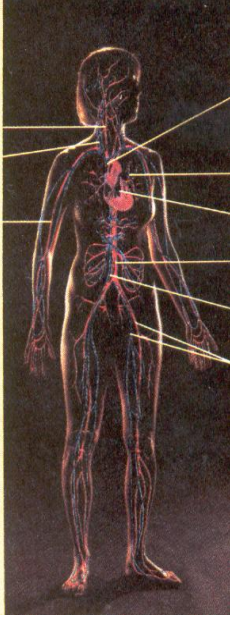
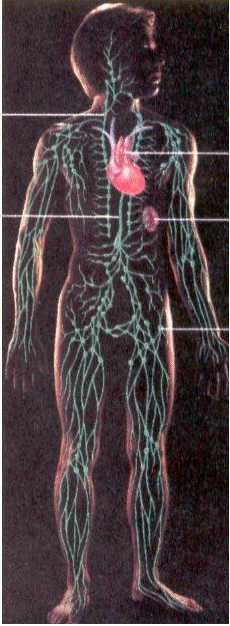
**MODEL:**

The \_system consists of / includes \_ (major components).

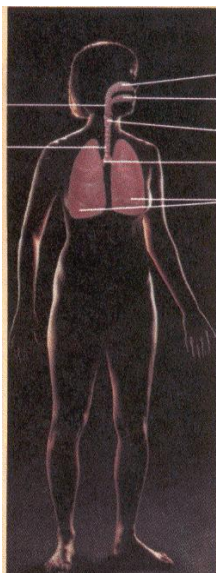
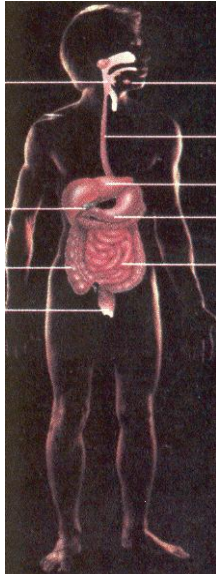
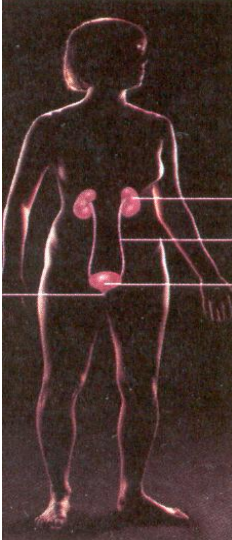
This system \_ (functions).


SYSTEM		MAJOR COMPONENTS	FUNCTIONS
Integumentary system		Skin, hair, nails, and sweat glands	Protects, regulates temperature, prevents water loss
Skeletal system		Bones, associated cartilages, and joints	Protects, supports, and allows body movement, produces blood cells, and stores minerals
	skull clavicle sternum humerus vertebral column radius ulna femur		

<p><b>Muscular system</b></p> <p>temporalis masseter</p> <p>sternocleidomastoid</p>		<p>pectoralis major</p> <p>biceps</p> <p>rectus abdominus</p> <p>sartorius</p> <p>quadriceps</p> <p>gastrocnemus</p>	<p>Muscles attached to the skeleton</p>	<p>Allows body movement, maintains posture, and produces body heat</p>
	<p><b>Nervous system</b></p> 	<p>brain</p> <p>spinal cord</p>	<p>Brain, spinal cord, nerves, and sensory receptors</p>	<p>Detects sensation, controls movements, controls physiological and intellectual functions</p>
<p>parathyroids (behind thyroid)</p>	<p><b>Endocrine system</b></p> 	<p>pituitary</p> <p>thyroid</p> <p>thymus</p> <p>adrenals</p> <p>pancreas</p> <p>ovaries (in females)</p> <p>testis (in males)</p>	<p>Endocrine glands such as the pituitary, thyroid, and adrenal glands</p>	<p>Participates in the regulation of metabolism, reproduction, and many other functions</p>
<p><b>Cardiovascular system</b></p>				

<p>carotid artery jugular vein  brachial artery</p>		<p>superior vena cava pulmonary artery  heart aorta inferior vena cava  femoral artery and vein</p>	<p>Heart, blood vessels, and blood</p>	<p>Transports nutrients, waste products, gases, and hormones throughout the body; plays a role in the immune response and the regulation of body temperature</p>
<p>right lymphatic duct  thoracic duct</p>	<p><b>Lymphatic system</b></p> 	<p>thymus gland  spleen  lymph node</p>	<p>Lymph vessels, lymph nodes, and other lymph organs</p>	<p>Removes foreign substances from the blood and lymph, combats disease, maintains tissue fluid balance, and absorbs fats</p>
<p><b>Respiratory system</b></p>				



<p>pharynx trachea</p>		<p>nasal cavity oral cavity larynx bronchus lungs</p>	<p>Lungs and respiratory passages</p>	<p>Exchanges gases (oxygen and carbon dioxide) between the blood and the air and regulates blood pH</p>
<b>Digestive system</b>				
<p>pharynx  gallbladder large intestine rectum</p>		<p>salivary gland  esophagus  liver stomach small intestine</p>	<p>Mouth, esophagus, stomach, intestines, and accessory structures</p>	<p>Performs the mechanical and chemical processes of digestion, absorption of nutrients, and elimination of wastes</p>
<b>Urinary system</b>				
<p>urethra</p>		<p>kidney ureter  bladder</p>	<p>Kidneys, urinary bladder, and ducts that carry urine</p>	<p>Removes waste products from the circulatory system; regulates blood pH, ion balance, and water balance</p>
<b>Reproductive system</b>				

<p>ductus deferens epididymis</p>		<p>seminal vesicle prostate gland testis penis</p>	<p>Gonads, accessory structures, and genitals of males and females</p>	<p>Performs the processes of reproduction and controls sexual functions and behaviors</p>
		<p>uterine tube ovary uterus vagina</p>		

**Ex. 9. Answer the following questions:**

1. What systems does the human body consist of? 2. What are the major components of the integumentary system? 3. What are the major components of the skeletal system? 4. What does the muscular system consist of? 5. What are the major components of the nervous system? 6. What does the endocrine system consist of? 7. What are the major components of the cardiovascular system? 8. What does the lymphatic system consist of? 9. What are the major components of the respiratory system? 10. What are the major components of the digestive system? 11. What are the major components of the urinary system? 12. What does the reproductive system consist of? 13. What is the function of the integumentary system? 14. What is the function of the skeletal-muscular system? 15. What is the function of the cardiovascular system? 16. What is the function of the reproductive system? 17. What is the function of the digestive system? 18. What is the function of the endocrine system? 19. What is the function of the urinary system? 20. What is the function of the reproductive system?

**Ex. 10. Insert the missing words:**

1. The body is divided into 11 major organ systems: integumentary, \_\_, muscular, nervous, endocrine, \_\_, lymphatic, respiratory, \_\_, urinary, and reproductive systems. 2. The skeletal system includes bones, associated \_\_, and joints. 3. It protects, \_\_, and allows body movement. 4. The muscular system consists of \_\_. 5. This system allows body \_\_. 6. The cardiovascular system includes heart, blood \_\_, and blood. 7. It transports \_\_.

**Ex. 11. Make up the sentences using the following words and word-combinations:**

1. The nervous system / brain / and / includes / spinal cord / nerves. 2. It / physiological / intellectual functions / controls / and. 3. Includes / respiratory passages / the respiratory system / lungs / and.

4. Between / it / exchanges / the blood / gases / and / the air. 5. Intestines / the digestive / mouth / system / consists of / esophagus / and / stomach. 6. Chemical / this / system / digestion / the mechanical / and / performs / processes / of.

**Ex. 12. Write out key sentences of the text "Organ Systems".**

**Ex. 13. Compose the plan to the text "Organ Systems".**

**Ex. 14. Speak on the systems of the human body.**

**Ex. 15. Make up a dialogue on the systems of the human body.**

**Ex. 16. Translate the following sentences into English:**

1. Покровна система складається зі шкіри, волосся, нігтів та потових залоз. 2. Ця система регулює температуру тіла та запобігає зневоднюванню. 3. Скелетна система складається з кісток, хрящів та суглобів. 4. М'язова система складається із м'язів, дозволяючи людині пересуватися. 5. Серцево-судинна система складається з серця, кров'яних судин та крові, що переносить поживні речовини до всіх частин організму. 6. Дихальна система сформована легеньми. 7. Травна система виконує хімічні та механічні процеси травлення.

## OVERVIEW

The body is divided into 11 major organ systems: integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. The skeletal system includes bones, associated cartilages, and joints. It protects, supports, and allows body movement. The muscular system consists of muscles. This system allows body movement. The nervous system includes brain, spinal cord, and nerves. It controls physiological and intellectual functions. The cardiovascular system includes heart, blood vessels, and blood. It transports nutrients. The respiratory system includes lungs and respiratory passages. It exchanges gases between the blood and the air and regulates blood pH. The digestive system consists of mouth, esophagus, stomach, and intestines. This system performs the mechanical and chemical processes of digestion.

## LESSON 26 SKELETON

### VOCABULARY

**vary** [*v'fqrʃ*] відрізнятися  
**ulna** [*'ʌlnq*] ліктьова кістка  
**fuse** [*ffju:z*] об'єднуватися, з'єднуватися  
**radius** [*'reɪdʒqs*] променева кістка (передпліччя)  
**vertebral column** [*'vq:tʃbrq'kʌlqm*] хребетний стовп  
**carpal** [*'kɑ:pqʃ*] зап'ястковий  
**vertebra** (pl. *vertebrae*) [*'vq:tʃbrq*] хребець  
**metacarpal** [*'metq'kɑ:pqʃ*] п'ястковий  
**thoracic cage** [*'θɔ:'rɔsɪk'keɪʒ*] грудна клітка  
**digit** [*dʒɪt*] палець  
**cranial vault** [*'kreɪnɪʃl'vɔ:lt*] склепіння черепа  
**phalange** [*'fælæŋ*] фаланга  
**auditory ossicle** [*'ɔ:dɪtqrɪ'ɔsɪkl*] слухова кісточка  
**pectoral girdle** [*'pektqrʃ'gɪ:dl*] плечовий пояс

**protect** [*prq'tekt*] захищати; оберігати; підтримувати  
**coxa** (pl. *coxae*) [*'kɔksq*] кульша; кульшовий суглоб  
**ilium** [*'ɪlɪqm*] клубова кістка  
**ischium** [*'ɪskɪqm*] сіднична кістка  
**associated** [*q'sou ʒetʃd*] супутній; взаємодіючий  
**pubis** [*'pju:bɪs*] лобкова кістка  
**costal** [*'kɔstl*] реберний  
**femur** [*'fɛ:mq*] стегнова кістка  
**sternum** [*'stɜ:nqm*] грудина  
**prominent** [*'prɔmɪnqnt*] виступаючий, такий, що видається над рівнем чогось  
**floating rib** [*'flaɪtɪŋ'ri:b*] коливне ребро  
**tibia** [*'tɪbɪq*] великогомілкова кістка  
**manubrium** [*'mɪnju:'brɪqm*] ручка, структура або частина, що нагадує держак

**cervical** [ˈsɜːvɪkəl] шийний  
**scapula** [ˈskæpjʊlə] лопатка  
**lumbar** [ˈlʌmbə] поперековий  
**shoulder blade** [ˈʃəʊldə ˈbleɪd] лопатка  
**sacral** [ˈseɪkrəl] крижовий  
**clavicle** [ˈklævɪkəl] ключиця  
**coccygeal** [ˈkɒkəˈsɪdʒiəl] куприковий  
**collar bone** [ˈkɒlə] ключиця  
**spinal cord** [ˈspaɪnəl ˈkɔːd] спинний мозок  
**pelvic girdle** [ˈpeɪvɪk ˈɡɪːdl] пояс нижньої кінцівки, тазовий пояс  
**permit** [pəˈmɪt] дозволяти, давати можливість  
**sacrum** [ˈseɪkrəm] крижі, крижова кістка

**patella** [pəˈteɪlə] наколінок  
**xiphoid process** [ˈzɪfɪˈɔɪd ˈprɒses] мечоподібний відросток грудини, ксифістернум  
**fibula** [ˈfɪbjʊlə] малогомілкова кістка  
**capable** [ˈkeɪpəbəl] здатний до ч-н.  
**articulate** [ˈɑːtɪˈkjʊlət] з'єднувати; шарнірно сполучати  
**grasp** [grɑːsp] схоплювання; міцне стиснення  
**tarsal bone** [ˈtɑːsəl] зап'яскова кістка  
**humerus** [ˈhjuːməɪs] плечова кістка  
**metatarsal bones** [ˈmetəˈtɑːsəl] плеснові кістки  
**cubital joint** [ˈkjʊːbɪtəl] ліктьовий суглоб

### RULES OF READING MUTE LETTERS (“НІМІ” ЛІТЕРИ)

g	у сполученні <b>gn</b>	foreign [ˈfɔːrɪn]
gh	на початку слова; у сполученнях <b>igh, tigh, ough, augh</b>	ghost [ɡəʊst] sigh [saɪ]
h	у сполученні <b>rh</b> ; у сполученні <b>wh</b> , якщо наступна літера не є <b>o</b>	rhesus [ˈrɪːsəs] when [wen]
k	на початку слова у сполучення <b>kn</b>	know [nəʊ]
l	у сполученнях <b>alf, alk, alm, olk</b>	half [hɑːf] talk [tɔːk]
n	у сполученні <b>mn</b>	column [ˈkɒləm]

**Ex. 1. Read the following words:**

Foreign; sign; sigh; eight; rheumatoid; hemorrhage; diarrhea; rhythm; when; where; knife; half; talk; calm; autumn; design.

### WORD-BUILDING

**Ex. 2. Familiarize yourself with the following material:**

**Suffix of Adjectives:**

**-ary (-ory, -ery)**

auditory *слуховий*

**Ex. 3. Read and translate the following words:**

Necessary; sanitary; ordinary; auxiliary; urinary; axillary; alimentary; salivary; temporary; secretory; watery.

### GRAMMAR:

**Ex. 4. Familiarize yourself with the following grammar material:**

#### Participle I (V<sub>4</sub>)

#### V+ing

Infinitive	Participle I
to define	defining
to see	seeing
to stay	staying
to begin	beginning

to open	opening
to control	controlling
to die	dying

**Ex. 5. Form Participles I from the following infinitives and translate them:**

To attach; to cover; to penetrate; to pump; to conduct; to maintain; to adapt; to protect; to classify; to consist; to contain; to break; to divide; to branch.

**Ex. 6. Read and translate the following sentences into Ukrainian:**

**Note:**

The nurse <b>working</b> here is my mother.	Медсестра, котра працює тут – моя мати.
<b>Reading</b> this paper, I made notes.	Читаючи цю статтю, я робив нотатки.
She came up to physician <b>crying</b> loudly.	Вона підійшла до лікаря с гучним плачем.

1. Traveling about Ukraine, he saw a lot of newly built clinics. 2. The doctor examining these patients is a skilled specialist. 3. The lecturer answering the students' questions works at the regional hospital. 4. Being unwell, he cannot do this work. 5. M.D. Strazhesko was the author of many classical works describing the heart and abdominal diseases. 6. The epiphysis consisting of spongy bone has many small cavities. 7. The outer fibrous layer is dense, fibrous, irregular collagenous connective tissue containing blood vessels and nerves. 8. Osteoblasts are bone producing cells, and osteoclasts are cells breaking down bone.

**Ex. 7. Familiarize yourself with the data of the following table:**

**CONTINUOUS TENSES**  
(Active Voice, Affirmative Form)  
**to be + Participle I (Ving)**

Present	Past	Future
I <b>am</b> He } <b>is</b> She } It } You } <b>are</b> We } They }	I He } <b>was</b> She } It } You } <b>were</b> We } They }	I <b>shall be</b> He } <b>will be</b> She } It } You } They } We <b>shall be</b>
} + Ving	} + Ving	} + Ving

**MODEL:**

I **am examining** a patient. – Я оглядаю хворого. My fellow-student **is preparing** for credit test in Anatomy at present. – Зараз мій однокурсник готується до заліку з анатомії. He **was reading** an article at 7 o'clock yesterday. – Він читав статтю вчора о 7 годині. They **were carrying** out very important experiment from 2 till 5 o'clock. – Вони проводили дуже важливий експеримент з 2 до 5. The surgeon **will be operating** on this patient at 11 o'clock tomorrow. – Хірург буде оперувати цього пацієнта завтра об 11 годині.

**Ex. 8. Read and translate the following sentences:**

1. Now some prominent scientists of Ukraine are working at the medical faculty of Kyiv University. 2. When Teresa was reading the abstract, William was preparing his lessons. 3. WHO is protecting mother and child health. 4. Knowledge of illness and the ability to treat it were growing rapidly. 5. The bone' structure will be changing rapidly. 6. The student will be learning the functions of the skeletal system from 5 till 6 o'clock tomorrow. 7. The red marrow in the limbs is replacing with yellow marrow.

**Ex. 9. Turn the following sentences into Past and Future Continuous Tenses:**

1. The physician is listening to the patient's heart and lungs. 2. The scientist is carrying out his experiment on bone growth. 3. The blood calcium is decreasing and the secretion of parathyroid

hormone is increasing. 4. The surgeon is saving the patient's life. 5. The lecturer is demonstrating new film "The major functions of the vertebral column".

**Ex. 10. Find the sentences containing Continuous Tenses. Read and translate them:**

1. A strain is a stretching and tearing of muscle or tendon fibers. 2. He is splinting a victim. 3. Dislocations are caused by falls, sports injuries, motor-vehicle accidents, and underlying diseases. 4. They are applying a cold pack to a closed fracture. 5. At present the doctor is checking radial pulse on fractured extremity. 6. Strains are often caused by lifting something too heavy.

**Ex. 11. Translate the following sentences into English:**

1. Зараз хірург проводить серйозну операцію на променевій кістці. 2. Медсестра ставила гірчичники цьому пацієнту вчора о 5 годині вечора. 3. Завтра з 11 до 12 травматолог буде оглядати вашу ногу. 4. У цей час він закінчує свій дослід. 5. Наші студенти зараз допомагають терапевту оглядати пацієнтів. 6. Подивіться, студенти нашої групи зараз читають додаткову літературу з цього предмету (on this subject).

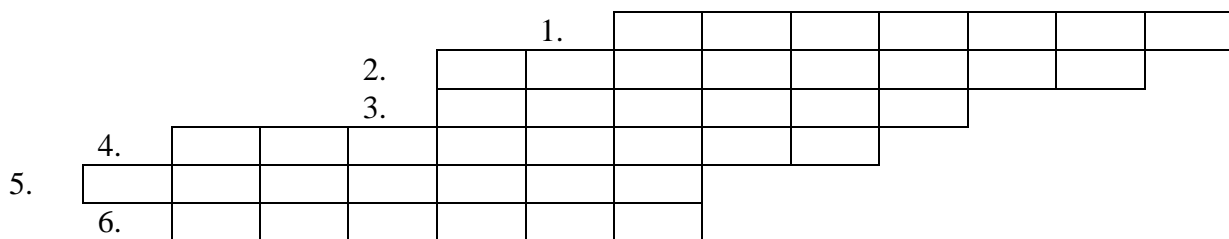
**READING AND DEVELOPING SKILLS**

**Ex. 12. Read VOCABULARY and memorize new words.**

**Ex. 13. Insert the missing letters:**

Vert\_bra, pe\_mit, pr\_tect, colum\_, va\_lt; \_oracic, supp\_rt, stern\_m; ti\_ia, man\_brium, sca\_ula, tou\_h, c\_bital joint, xiph\_id process, \_lna, ra\_ius, hu\_erus, carp\_l bone, clavi\_le, sa\_rum, cox\_, f\_mur, fibu\_a, arti\_ulate.

**Ex. 14. CROSSWORD (find key word "coccyx"):**



1. черепний
2. грудний
3. крижі
4. шийний
5. здатність, уміння
6. грудна клітка

**Ex. 15. Translate the following words and word-combinations into Ukrainian:**

Cranial vault; carpal; sacral; cervical; lumbar; vertebral column; thoracic cage; pectoral girdle; pelvic girdle; spinal cord; shoulder blade; collar bone; metatarsal bone; tarsal bone; ulna; radius; xiphoid process; fuse; coccygeal; vertebra; protect; sacrum; ilium; sternum.

**Ex. 16. Read the following words and word-combinations:**

Average; decrease; fuse; skull; vertebra; column; vault; auditory ossicle; thoracic; lumbar; support; major; muscle; sternum; xiphoid process; limb; touch; humerus; cubital joint; ulna; radius; carpal bone; girdle; scapula; clavicle; sacrum; coxa; femur; tibia; patella; fibula; articulate; tarsal bones.

**Ex. 17. Read the following text:**

**SKELETON**

At present we are preparing for our classes in Anatomy. As medical students we must have deep knowledge on this subject. I am reading the chapter considering the structure and functions of skeletal system. My fellow-student is making notes of the material on the bone shape and bone ossification. The following material must help us to prepare for our classes in Anatomy.

There are 206 bones in the average adult skeleton, although the actual number varies from person to person and decreases with the age as some bones become fused.

The skeleton is divided into the skull, vertebral (spinal) column, thoracic cage, upper and lower limbs and the girdles that attach the limbs to the body.

The skull is composed of 28 bones. These bones are organized into cranial vault, facial bones, and auditory ossicles.

The vertebral column usually consists of 33-34 bones. They are divided into five regions. There are 7 cervical vertebrae, 12 thoracic vertebrae, 5 lumbar vertebrae, 5 sacral vertebrae, and 4-5 coccygeal vertebrae. The vertebral column performs some major functions: it supports the weight of the head and trunk, it protects the spinal cord, it provides a site for muscle attachment, and it permits movement of the head and trunk.

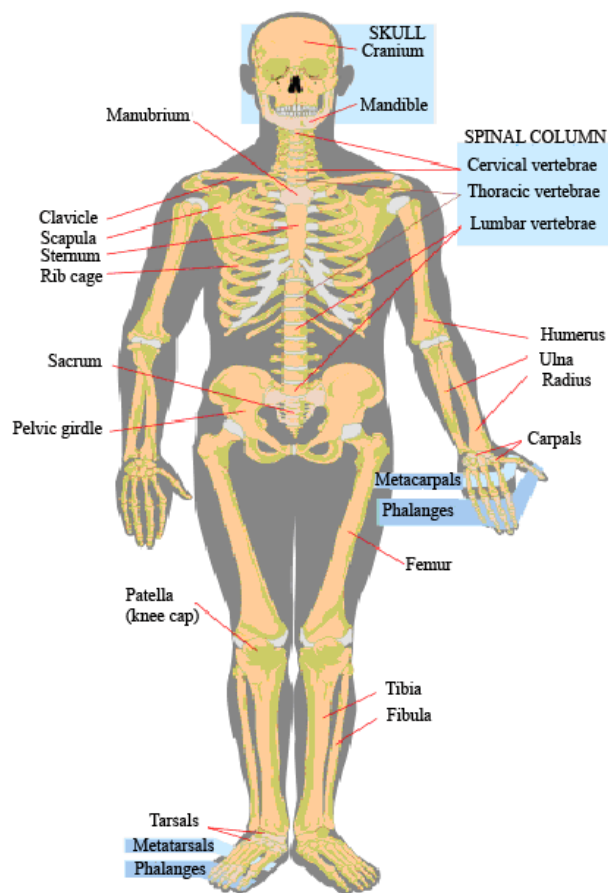
The thoracic cage, or rib cage, protects the internal organs within the thorax. It consists of the thoracic vertebrae, the ribs with their associated costal (rib) cartilages, and the sternum (breastbone). Each rib consists of the head, the neck, and the body. Twelve pairs of ribs attach to the thoracic vertebrae. The sternum, or breastbone, is composed of the manubrium, the body, and the xiphoid process.

The human upper limb is capable of a wide range of movements, including lifting, grasping, and touching. The arm (the portion of the upper limb from the shoulder to the elbow) contains only one bone, the humerus. Between the arm and forearm there is a cubital (elbow) joint. The forearm has 2 bones, the ulna on the medial side of the forearm and the radius on the lateral side of the forearm. The wrist is a relatively short region between the forearm and hand and is composed of 8 carpal bones. The hand consists of five metacarpal bones. The pectoral, or shoulder, girdle attaches the upper limb to the body. It consists of two bones: the scapula, or shoulder blade, and the clavicle, or collar bone.

The lower limb is very similar to that of the upper limb, except the pelvic girdle. It is attached much more firmly the body than is the pectoral girdle. The bones in general are thicker, heavier, and longer than those of the upper limb. The pelvic girdle supports the weight of the body and protects internal organs. The male pelvis usually is more massive than the female pelvis as a result of the greater weight and size of the male. Pelvic girdle is formed by the sacrum and paired bones, called the coxae, or hip bones. The thigh contains a single bone, the femur, which has a prominent rounded head. The femur articulates with the coxa, the tibia, and the patella. The knee joint is a joint located between the femur and the tibia. The leg (the portion of the lower limb between the knee and the ankle) consists of the two bones, the tibia and the fibula. The tibia supports most of the weight of the leg. The fibula doesn't articulate with the femur but has a small proximal head where it articulates with the tibia. The ankle consists of seven tarsal bones. The ankle is relatively much larger than the wrist. The foot consists of five metatarsal bones.

**Ex. 18. Translate the following words and word-combinations into English:**

З'єднувати; сполучати, шарнірно; палець; фаланга; плечова кістка; відрізнятися; ключиця; дозволяти, давати можливість; реберний; великогомілкова кістка; наколінок; сіднична кістка; малогомілкова кістка; кульша; хребець; шийний; грудина; ребро.



*Human Skeleton*

**Ex. 19. Translate the text "Skeleton" into Ukrainian.**

**Ex. 20. Complete the following sentences:**

1. Approximately 206 bones \_ in the adult skeleton. 2. The \_ is divided into the skull, vertebral (spinal) column, thoracic cage, upper and lower limbs and the girdles. 3. The skull \_ of 28 bones. 4. They are divided into \_, facial bones and auditory ossicles. 5. The bones of vertebral column are cervical vertebrae, thoracic vertebrae, \_ vertebrae, sacral bone, and coccygeal bone. 6. The vertebral column \_ the weight of the head and trunk, protects the spinal cord, and \_ movement of the head and trunk. 7. The thoracic cage protects the \_ organs. 8. It consists of the thoracic vertebrae, the ribs, and the \_. 9. The upper limb consists of the humerus, \_ joint, the ulna, and the radius. 10. The five \_ of each hand include one thumb and four fingers. 11. Each digit consists of small long bones called \_. 12. Each finger has 3 phalanges, and the thumb \_ two ones. 13. The pelvic \_ supports the weight of the body. 14. The thigh contains the \_. 15. The knee is the \_ located between the femur and the tibia. 16. The leg consists of the \_ and the fibula. 17. The ankle consists of \_ bones. 18. Each \_ is formed by the fusion of the ilium, the ischium, and the pubis. 19. The toes of lower limb have three phalanges each except for the big \_, which has two phalanges.

**Ex. 21. Answer the following questions:**

1. What parts is the skeleton divided into? 2. What portions does the skull consist of? 3. What is the vertebral column composed of? 4. What are the functions of the vertebral column? 5. What is the major function of the thoracic cage? 6. What does the thoracic cage consist of? 7. What is the upper limb capable of? 8. What bones are in the upper limb? 9. What are the bones of the lower limb?

**Ex. 22. Using the data of the table speak on the anatomy of the skeleton:**

Vertebral column	cervical vertebrae; thoracic vertebrae; lumbar vertebrae; sacral bone; coccygeal bone
Thoracic cage	thoracic vertebrae; costal cartilages; sternum (breastbone); manubrium; xiphoid



	process; ribs
Upper limb	pectoral girdle; humerus; cubital joint; ulna; radius; carpal bones; metacarpal bones
Lower limb	pelvic girdle; femur; tibia; patella; fibula; tarsal bones; metatarsal bones

**Ex. 23. Read the following abstract and retell it:**

The skeleton consists of the skull, the spine, the ribs, the sternum (breastbone), two limb girdles (the shoulders and pelvis) and their attached limb bones. There are only minor differences between the skeletons of the male and the female: the men's bones tend to be larger and heavier than corresponding women's bones and the women's pelvic cavity is wider to accommodate childbirth. The skeleton plays an important part in movement. It also supports and protects the internal body organs. The skeleton is not just a movable frame, however; it is an efficient factory, which produces red blood cells from the bone marrow of certain bones and white cells from the marrow of other bones to destroy harmful bacteria. The bones are also a storehouse for minerals – calcium, for example – which can be supplied to other parts of the body. Babies are born with 270 soft bones – about 64 more than an adult; and many of these will fuse together by the age of twenty or twenty-five into the 206 hard, permanent bones.

**Ex. 24. Translate the following sentences into English:**

1. Скелет дорослої людини складається приблизно з 206 кісток. 2. Скелет складається з черепа, хребетного стовпа, грудної клітки та верхніх і нижніх кінцівок. 3. Скеліття черепа, лицьові кістки та слухові кісточки є кістками черепа. 4. Хребет складається з шийних, грудних, поперекових, крижових хребців та крижової кістки. 5. Хребетний стовп захищає спинний мозок. 6. Грудна клітка підтримує та захищає внутрішні органи. 7. Грудна клітка складається з грудних хребців, ребер, реберних хрящів та грудини. 8. Основна частина грудної клітки складається з ребер. 9. Кожне ребро має голівку, шийку та тіло. 10. Грудина – це довга кістка всередині грудної клітини. 11. Як правило, хребець складається з тіла, дуги та відростка. 12. Верхня кінцівка складається з плечової кістки, ліктьового суглоба, ліктьової кістки та променевої кістки. 13. Зап'ясток складається з зап'ясткових кісток. 14. Кисть складається з п'яти п'ясткових кісток. 15. Тазовий пояс підтримує вагу тіла та захищає внутрішні органи від пошкоджень. 16. Коліно – це суглоб, розташований між стегном та великою гомілковою кісткою. 17. Гомілка складається з великої гомілкової кістки та малогомілкової кістки.

**Ex. 25. Speak on:**

The vertebral column;

The thoracic cage;

The bones of upper limb;

The bones of lower limb.

**Ex. 26. Read the following words and try to memorize them:**

**Epiphysis** [e'pɪfɪsɪs] епіфізіз; **epiphyseal line** [epɪfɪzɪəl] епіфізарна лінія; **cartilage** ['kɑ:tɪlɪdʒ] хрящ; **compact bone** ['kɒmpækt 'boʊn] компактна кісткова тканина; **cancellous bone** ['kænsəlqs] сітчаста кістка, губчаста кісткова речовина; **spongy bone** ['spɒndʒɪ] губчаста кісткова речовина; **matrix** ['meɪtrɪks] матрикс, основа, міжклітинний матеріал; **cavity** ['kævɪtɪ] порожнина; **rigid** ['rɪdʒɪd] жорсткий, негнучкий, твердий; **medullary** [me'dʊləri] медулярний, мозковий; **sericeous** [se'ri:əs] шерстяний; **maintain** [meɪn'teɪn] підтримувати, утримувати, зберігати; **support** [sə'pɔ:t] підтримка; **sinus** ['sɪnəs] пазуха; **fill with** [fɪl] наповнювати(ся); **band** [bænd] зв'язка; **approximately** [ə'prɒksɪmətɪ] близько, приблизно; **marrow** ['mæru] кістковий мозок; **broad** [brɔ:d] широкий; **periosteum** [ˌperɪ'ɒstɪəm] окістя, надкісниця; **fit** [fɪt] підходити, відповідати; **dense** [dens] щільний, густий; **diaphysis** [daɪ'ɒfɪsɪs] діафіз, середня частина трубчастої кістки.

**Ex. 27. Read the following text:**

**BONE'S STRUCTURE**

The skeletal system consists of bones, cartilages, tendons, and ligaments. Because bone is very rigid, it is well adapted to help maintain the shape of the body and protect internal organs. Cartilages, which are somewhat rigid but more flexible than bones, also provide support. Tendons and ligaments are strong bands of fibrous connective tissue. Tendons attach muscles to the bones, and ligaments attach bones to bones.

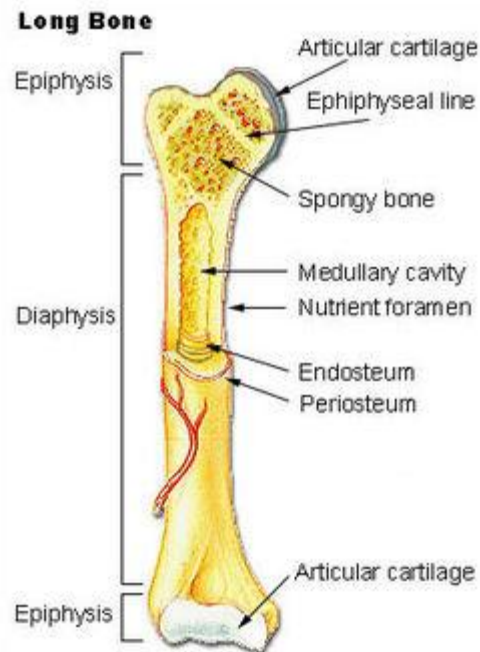
Individual bones can be classified according to their shape as long, short, flat, or irregular. Most of the bones of the upper and lower limbs are long bones. These bones are very strong. They are broad at the ends where they join with other bones, and have large surface areas for muscle attachment. Short bones are approximately as broad as they long. They are nearly cube shaped or round. They are in the wrist and ankle. Flat bones have a relatively thin, flattened shape. The examples of flat bones are some skull bones, ribs, pelvic bones, and the breastbone (sternum). Irregular bones are ones such as the vertebrae and facial bones with shapes that do not fit into three categories.

Each long bone consists of three major components: the diaphysis; an epiphysis; and the epiphyseal line (or epiphyseal plate in each growing long bone). The diaphysis is long middle region of a long bone composed of compact bone, which is bone matrix. Each end of a long bone is called an epiphysis. The epiphyses consisting of cancellous bone (sometimes called spongy bone), has many small spaces or cavities within the bone matrix. The outer surface of the epiphyses consists of a layer of compact bone. In addition to the small spaces within cancellous bone and compact bone, some bones contain large cavities. The diaphyses of long bones have a large medullary cavity (some of the skull bones have spaces called sinuses). The medullary cavity and the cavities of the cancellous bone are filled with marrow. Medullary cavity contains yellow bone marrow and spaces in cancellous bone contain red bone marrow. Yellow bone marrow is mostly composed of adipose tissue. Red bone marrow is the site of blood formation. In general, yellow marrow is associated with the long bones of the limbs, and red marrow is associated with the rest of the skeleton. The outer surface of bones consists of a periosteum. The periosteum is a strong, fibrous, vascular membrane that covers the surface of a long bone, except at the ends of the epiphyses. The inner layer consists mostly of a single layer of osteoblasts with a few osteoclasts. Osteoblasts are bone producing cells, and osteoclasts are cells breaking down bone.

Flat bones usually have no diaphyses or epiphyses. They contain an interior framework of cancellous bone sandwiched between two layers of compact bone. Short and irregular bones have a composition similar to the epiphyses of long bones. They have compact bone surfaces surrounding a cancellous bone center with small spaces that usually filled with marrow. Short and irregular bones have no diaphyses. However, certain regions of these bones (e.g., the processes of irregular bones) have epiphyseal growth plates and therefore have small epiphyses.

**Ex. 28. Answer the following questions:**

1. What does the skeletal system consist of? 2. What is the major function of the bone? 3. What does the cartilage provide? 4. What are ligaments and tendons? 5. What are their functions? 6. What types of bones do you know? 7. What components does every long bone consist of? 8. What is diaphysis composed of? 9. What does the epiphysis consist of? 10. What is compact bone? 11. What is osteoblast? 12. What is osteoclast? 13. What do the flat bones contain? 14. What are short and irregular bones composed of?



*Structure of Bone*

**Ex. 29. Match the following terms with their definitions:**

1. Cartilage	1. noncellular substance surrounding the cells of connective tissue.
2. Ligament	2. dense plate of bone in a bone that is no longer growing, indicating the former site of the epiphyseal plate.
3. Tendon	3. similar molecules binding to the same carrier molecule or receptor site.
4. Compact bone	4. band of dense connective tissue connecting a muscle to a bone or other structure.
5. Epiphyseal line	5. portion of a bone developed from a secondary ossification center and separated from the remainder of the bone by the epiphyseal plate.
6. Epiphysis	6. band of dense connective tissue connecting two or more bones, cartilages, or other structures.
7. Matrix	7. firm, smooth, nonvascular connective tissue.

**OVERVIEW**

The skeletal system consists of bones, cartilages, tendons, and ligaments. Bones are very rigid. They support and protect internal organs, and assist in body movement. There are 206 bones in the average adult skeleton. It is divided into the skull, spinal column, thoracic cage, upper and lower limbs and the girdles. The bones of the skull are organized into cranial vault, facial bones, and auditory ossicles. The vertebral column consists of cervical vertebrae, thoracic vertebrae, lumbar vertebrae, sacral bone, and coccygeal bone (coccyx). The vertebral column supports the weight of the head and trunk, protects the spinal cord, and provides a site for muscle attachment. The thoracic cage protects the internal organs. It consists of the thoracic vertebrae, the ribs with their associated costal (rib) cartilages, and the sternum. The basic part of the thoracic cage is formed by the ribs. Each rib consists of the head, the neck, and the body. The sternum is a long bone in the middle of the thorax. A typical vertebra consists of a body, an arch, and various processes. The upper limb consists of the humerus, a cubital (elbow) joint, the ulna, and the radius. The wrist is composed of carpal bones. The hand consists of five metacarpal bones. The pelvic girdle supports the weight of the body and protects internal organs. The thigh contains the femur. The knee is the joint located between the femur and the tibia. The leg consists of the tibia and the fibula.

The ankle consists of tarsal bones. The foot consists of metatarsal bones.

## LESSON 27

### TRAUMAS OF SKELETAL SYSTEM

#### VOCABULARY

<b>fracture</b> [ <i>fɹæktʃə</i> ]/перелом	<b>accompany</b> [ <i>ə'kʌmpəni</i> ]/ супроводжувати
<b>dislocation</b> [ <i>dɪs'lou'keɪʃ(ə)n</i> ]/вивих, зміщення	<b>damage</b> [ <i>dæmɪʃ</i> ]/пошкодження; ураження; порушення
<b>sprain</b> [ <i>spraɪn</i> ]/розтягнення, ушкодження зв'язок	<b>severe</b> [ <i>sɪ'veə</i> ]/сильний, тяжкий
<b>strain</b> [ <i>streɪn</i> ]/розтягнення, деформація	<b>bleeding</b> [ <i>'bi:diŋ</i> ]/кровотеча
<b>injury</b> [ <i>'ɪnʃəri</i> ]/ушкодження, рана, забиття	<b>victim</b> [ <i>'vɪktɪm</i> ]/жертва, потерпілий
<b>tearing</b> [ <i>'ti:ʃəriŋ</i> ]/розрив, порушення цілості структури	<b>lower back</b> [ <i>'ləʊə'bæk</i> ]/поперек
<b>stretch</b> [ <i>streʃ</i> ]/розтягування, розтягнення	<b>involve</b> [ <i>'ɪnvɒl</i> ]/втягувати; торкатися
<b>break</b> [ <i>breɪk</i> ]/ушкодження, перелом	<b>torn</b> [ <i>tɔ:n</i> ]/розірваний
<b>crack</b> [ <i>kɹæk</i> ]/тріщина, щілина	<b>pull</b> [ <i>pʊl</i> ]/розтягнення
<b>splint</b> [ <i>splɪnt</i> ]/накладати шини; шина	<b>swelling</b> [ <i>'swelɪŋ</i> ]/опухання, припухлість
	<b>bruising</b> [ <i>'bru:siŋ</i> ]/ушкодження, забиття
	<b>vehicle</b> [ <i>'vi:kl</i> ]/транспортний засіб

#### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 1. Compose 3-4 sentences using the words of VOCABULARY.**

**Ex. 2. Insert the missing letters:**

To\_n, swell\_ing, dam\_ge, inv\_lve, cra\_k, in\_ury, fra\_ture, spra\_n, str\_in, d\_slocation.

**Ex. 3. Translate the following words and word-combinations into Ukrainian:**

Swelling; tendon; severe; stretch; strain; internal; fracture; dislocation; bleeding; ligament; pull; painful; injury; cause; accompany; bruising; involve; sprain; tearing; lower back; separate; damage; closed fracture; displace.

**Ex. 4. Read the following words:**

Fracture; occur; injury; accident; ligament; musculoskeletal; motor-vehicle; call; define; involve; severe; break; damage; victim; sign; lower; either; wound; accompany; fall; position; bruising; accompanied; injury; partial.

**Ex. 5. Read the following text:**

#### FRACTURES, DISLOCATIONS, SPRAINS, AND STRAINS

The musculoskeletal system consists of the bones, muscles, ligaments, and tendons. Fractures, dislocations, sprains, and strains are injuries that occur to the musculoskeletal system.

#### Fractures

Fractures are breaks or cracks in bones. They are defined as either closed or open. Closed fractures leave the skin unbroken. They are more common than open fractures. An open fracture involves an open wound. Open fractures are more serious than closed fractures because of the risks of infection and severe bleeding. Fracture of a large bone can cause severe shock because bones and soft tissue may bleed heavily.

Fractures can be accompanied by internal injuries. For example, victims with fractured ribs can also have injuries to the lungs, kidneys, or liver.

Fractures can be caused by motor-vehicle accidents, falls, blows, sports injuries, or bone diseases.

#### Dislocations

A dislocation is an injury in which a bone is displaced from its normal position at a joint.

A dislocation may involve damage to the ligaments around the joints.

Dislocations can be caused by falls, sports injuries, motor-vehicle accidents, underlying disease (such as rheumatoid arthritis) and others.

### **Sprains**

A sprain is the partial or complete tearing of ligaments and other tissues at a joint. The more ligaments are torn, the more severe the injury. Sprain most commonly occurs in joints of the ankles and knees.

Like dislocations, sprains can be caused by falls, sports injuries, and motor-vehicle accidents.

### **Strains**

A strain is a stretching and tearing of muscle or tendon fibers. It is sometimes called a "muscle pull" or "tear".

Strains are often caused by lifting something too heavy. They often occur in the neck or back. Strains of the neck or lower back can be very painful.

### **The signs of fractures, dislocations, sprains, and strains**

The signs of these injuries are very similar. Five common signs of musculoskeletal injuries are pain, swelling, deformity, bruising of the skin, and inability to use the affected part normally.

### **Ex. 6. Translate the following words and word-combinations into English:**

Поперек; розірваний; розрив, порушення цілісності структури; зв'язка; припухлість; розтягнення; пошкодження, забиття; внутрішній; тріщина, щілина; супроводжувати; спричиняти; кровотеча; перелом; сухожилля.

### **Ex. 7. Translate the text "Fractures, Dislocations, Sprains, and Strains" into Ukrainian.**

### **Ex. 8. Answer the questions:**

1. What does the musculoskeletal system consist of? 2. What are fractures, dislocations, sprains and strains? 3. Give the definition to the medical term "fracture". 4. What kinds of fractures do you know? 5. What are the causes of fractures? 6. What is a dislocation? 7. What are the common causes of dislocations? 8. What do you know about sprains? 9. Define the term "strain". 10. What are the causes of strains? 11. What are the common signs of fractures and dislocations?

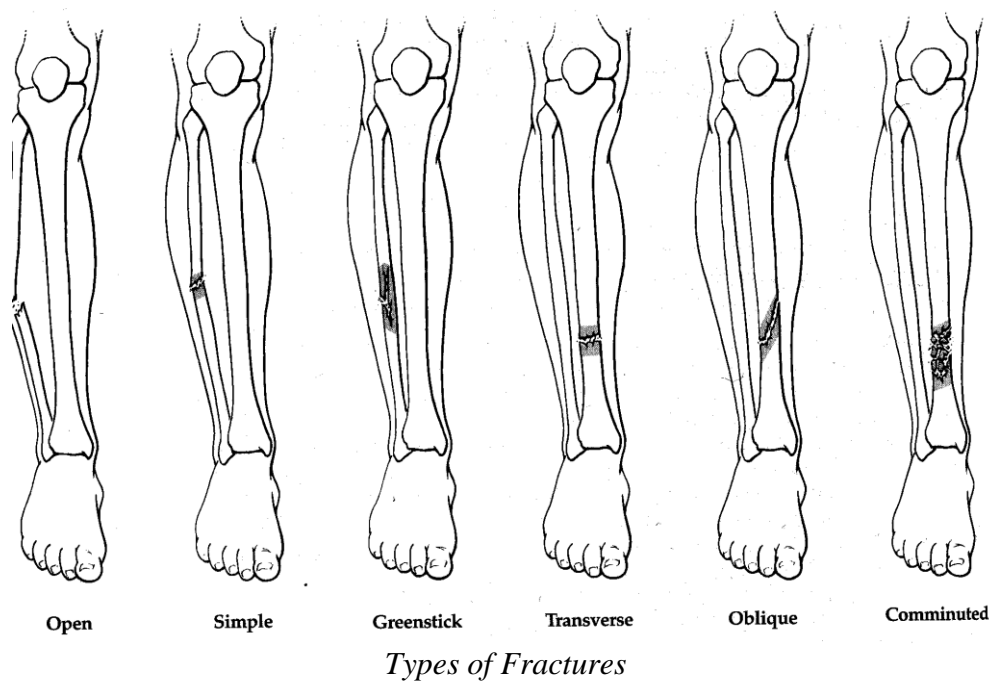
### **Ex. 9. Organize the information of the text "Fractures, Dislocations, Sprains, and Strains" in the table:**

	Definition	Causes	Signs
Fracture			
Dislocation			
Sprain			
Strain			

### **Ex. 10. Characterize the following:**

- a) fracture;
- b) dislocation;
- c) sprain;
- d) strain.

### **Ex. 11. What types of dislocations and fractures do you know? Can you explain the meaning of the following terms:**



**Ex. 12. Open fractures break through the skin. Simple fractures do not. Simple fractures are classified according to the way the bone breaks. Several varieties of the simple fractures are included in the illustration above. Speak on them.**

**Ex. 13. Read and retell the text:**

### TYPES OF FRACTURES

In identifying types of fractures, your physician may use some of the terms explained or illustrated below.

**Open fracture:** The broken bone protrudes from the skin. This may allow entry of bacteria from the environment, which increases the risk of infection.

**Simple fracture:** A fracture in which the broken bone does not protrude through the skin.

**Complete fracture:** Fracture in which the bone snaps into two or more parts.

**Incomplete fracture:** The break is limited to a crack (the bone is not separated into two parts).

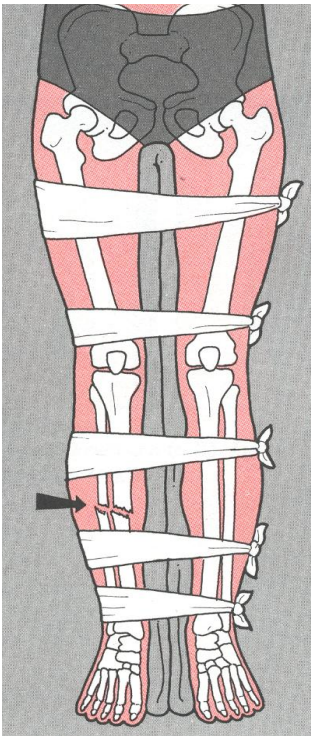
**Impacted fracture:** One fragment of bone is embedded into another fragment of bone.

**Pathological fracture:** A bone breaks in a person with bones weakened by disease. Bone cancer or bone disorder such as osteoporosis can result in weakened bones that fractures spontaneously or when only minor stresses are exerted on them. Such breaks are termed pathologic fractures because a principal cause is an underlying disease.

**Ex. 14. Read the following text and speak on the purposes of splinting and the basic principles of splinting:**

### FIRST AID

Sometimes it is difficult to tell whether an injury is a fracture, dislocation, sprain, or strain. Since you cannot be sure which of these a victim might have, always care for it as a fracture. If ambulance car is on the way, do not move the victim. Control any bleeding first. Care for shock, and monitor Airway Breathing Circulation (ABCs). If you are going to transport the victim to a medical facility, follow this general rule: "When in doubt, splint."



*Splinting*

Splinting is a process of immobilizing a suspected fracture. Materials that can immobilize a fractured bone and the joints above and below it can be used to splint. (Examples are rolled-up newspapers, magazines, and pieces of wood.) Commercial splints are also available.

The purposes of splinting are –

- To immobilize a possibly fractured part of the body.
- To lessen pain.
- To prevent further damage to soft tissues.
- To reduce the risk of serious bleeding.
- To reduce the possibility of loss of circulation in the injured part.
- To prevent closed fractures from becoming open fractures.

The basic principles of splinting are –

- Splint only if you can do it without causing more pain and discomfort to the victim.
- Splint an injury in the position you find it.
- Apply the splint so that it immobilizes the fractured bone and the joints above and below the fracture.
- Check circulation before and after splinting.

If there are no splinting supplies available, splint the broken part of the body to another part. For example, a broken arm can be splinted to the chest. A fractured leg can be splinted to the other, uninjured leg.

If the injury is a closed fracture, dislocation, sprain, or strain, apply a cold pack. Do not apply a cold pack to an open fracture. This would require you to put pressure on the wound and may cause discomfort to the victim.

Next, elevate the injured area. Do not attempt to elevate a part you suspect is fractured until it has been splinted.

For any of these injuries, care for shock and monitor ABCs.

**Ex. 15. Translate the following sentences into English:**

Перелом – це пошкодження кістки або хряща кістки. Переломи поділяються на відкриті та закриті. Перелом кістки може викликати сильну кровотечу або шок. При переломі ребер можуть бути пошкоджені внутрішні органи людини, наприклад, легені, нирки, селезінка або печінка. Кажуть, що вивих менш небезпечний у порівнянні з переломом. Я з цим не погоджуюсь. При багатьох вивихах виникають серйозні ускладнення. Основні причини переломів та вивихів – це травми, отримані в результаті дорожньо-транспортних пригод.

**Ex. 16. Speak on the fractures and dislocations.**

**Ex. 17. Read the dialogue:**

**AT THE TRAUMATOLOGIST'S**

**Traumatologist:** What is wrong with you?

**Patient:** I have a severe pain in my leg.

**T.:** Let's me examine your leg. How did the injury occur?

**P.:** I have fallen down.

**T.:** How long is it since the injury occurred?

**P.:** Two days.

**T.:** Does it hurt when I touch here?

**P.:** Yes, it does.

**T.:** Where is the pain more acute, here or there?

**P.:** Here it is.  
**T.:** Bend your leg.  
**P.:** It is very painful.  
**T.:** Could you stand on your injured leg immediately following injury?  
**P.:** No, I couldn't.  
**T.:** I suppose you have a fracture. Do you agree to be hospitalized?  
**P.:** No, I don't.  
**T.:** You will be treated in the out-patient department. It is necessary to X-ray your leg. I'll put a plaster of Paris. I'll give an injection with antitetanic serum. Do massage your leg, train your toes with a little exercise.  
**P.:** When will you remove a plaster of Paris?  
**T.:** I think it will be in a month. You must not engage in hard physical labour for 3 months.  
**P.:** What medicines must I take?  
**T.:** I'll prescribe you some drugs and vitamins for the improvement of your general health condition.

## OVERVIEW

Fractures, dislocations, sprains, and strains are injuries that occur to the musculoskeletal system. Fractures are breaks or cracks in bones. They are defined as either closed or open. Fracture of a large bone can cause severe shock because bones and soft tissue may bleed heavily. Fractures can be accompanied by internal injuries. A dislocation is an injury in which a bone is displaced from its normal position at a joint. A dislocation may involve damage to the ligaments around the joints. A sprain is the partial or complete tearing of ligaments and other tissues at a joint. Sprains most commonly occur in joints of the ankles and knees. A strain is a stretching and tearing of muscle or tendon fibers. They often occur in the neck or back. Five common signs of musculoskeletal injuries are pain, swelling, deformity, bruising of the skin, and inability to use the affected part normally.

## LESSON 28 MUSCULAR SYSTEM

### VOCABULARY

<b>fiber</b> [ <i>'faɪbə</i> ] волокно	<b>triangular</b> [ <i>traɪ'æŋɡjʊlə</i> ] трикутний
<b>contractile</b> [ <i>kɒn'træktəɪl</i> ] який стискає, стискувальний; скорочувати(ся)	<b>propel</b> [ <i>prə'pel</i> ] рухати
<b>across</b> [ <i>k'rɔs</i> ] через; по той бік	<b>orientation</b> [ <i>'ɔ:riən'teɪʃən</i> ] спрямування
<b>pectoral muscle</b> [ <i>'pektər(q)l</i> ] грудний м'яз	<b>dilate</b> [ <i>daɪ'l'eɪt</i> ] розширяти(ся)
<b>unlike</b> [ <i>'ʌn'laɪk</i> ] на відміну від	<b>oblique</b> [ <i>'ɒblɪk</i> ] косий
<b>brachial</b> [ <i>'bræʃiəl</i> ] брахіальний, плечовий	<b>constrict</b> [ <i>kɒn'strɪkt</i> ] скорочувати
<b>smooth</b> [ <i>smu:ð</i> ] гладкий, непосмугований	<b>pupil</b> [ <i>'pjʊpəl</i> ] зіниця
<b>refer</b> [ <i>rɪ'fɜ:</i> ] мати відношення, стосуватися	<b>longitudinal</b> [ <i>'lɒŋɡɪ'tju:dʒnəl</i> ] поздовжній
<b>comprise</b> [ <i>kəm'praɪz</i> ] складати	<b>biceps</b> [ <i>'bɪsɪps</i> ] біцепс, двоголовий м'яз
<b>locomotion</b> [ <i>'lɒkə'məʃən</i> ] рух	<b>force</b> [ <i>fɔ:s</i> ] сила, зусилля; нагнітати
<b>gluteal</b> [ <i>glu:'teɪl</i> ] глутеальний, сідничний	<b>abductor</b> [ <i>'æbdʌktər</i> ] відвідний м'яз
<b>deltoid muscle</b> [ <i>'deltɔɪd</i> ] дельтоподібний м'яз	<b>extend</b> [ <i>ɪks'tend</i> ] простягати(ся), тягнути(ся)
<b>expression</b> [ <i>ɪks'preʃən</i> ] вираз	<b>buttock</b> [ <i>'bʌtək</i> ] сідниця
<b>posture</b> [ <i>'pɔs'tʃər</i> ] статура, постава	<b>cross</b> [ <i>k'rɔs</i> ] пересікати(ся), перехрещуватися
	<b>move away</b> [ <i>mu:v</i> ] відводити

### RULES OF READING

#### MUTE LETTERS (“НІМІ” ЛІТЕРИ)

p	у сполученнях <i>pn, ps, pt</i>	pneumonia [ <i>nju:'mɒniə</i> ]
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		psychology [saɪ'kɒlədʒi] receipt [rɪ'si:t]
t	у сполученнях <i>stle, sten</i>	castle ['kɑ:sl] listen [lɪsn]
w	у сполученні <i>wr</i> , а також у слові <i>answer</i> [ˈɑ:nsɚ]; у сполученні <i>wh</i> , якщо наступна літера є <i>o</i>	write [raɪt] who [hu:]
u	у сполученні <i>gu</i> + голосна	tongue [tʌŋ]

**Ex. 1. Read the following words:**

Psychology, pneumonia; receipt; wrong; wrist; whom; guess; plague.

**WORD-BUILDING**

**Ex. 2. Familiarize yourself with the following material:**

**Suffix of Adjectives:**

**-ful** (full of; characterized by; tending to; able to)

use *користь* – useful *корисний*

pain *біль* – painful *болючий*

**Ex. 3. Read and translate the following words:**

Careful; powerful; harmful; helpful; painful; useful; awful.

**GRAMMAR:**

**Ex. 4. Familiarize yourself with the data of the following table:**

**CONTINUOUS TENSES**  
(Active Voice, Interrogative Form)

Tense	(1) Questioning word	(2) Auxiliary verb	(3) Subject	(4) Predicate	Example
<b>Present Continuous Tense</b>	What	<b>am</b>	I	<b>V<sub>ing</sub></b> (studying, writing)	What <b>is</b> he <b>writing</b> now? What <b>are</b> you <b>doing</b> ?
	Where	<b>is</b>	he, she, it		
	Why	<b>are</b>	you, we, they		
<b>Past Continuous Tense</b>	How	<b>was</b>	I, he, she, it	<b>V<sub>ing</sub></b> (studying, writing)	Where <b>was</b> a doctor <b>performing</b> on the operation?
	How many	<b>were</b>	you, we they		
<b>Future Continuous Tense</b>	How much	<b>shall</b>  <b>will</b>	I, we  he, she, it, you, they	<b>be + V<sub>ing</sub></b> (be studying, be writing)	What <b>will</b> you <b>be</b> <b>doing</b> at 3 p.m.?

**Ex. 5. Read and translate the following interrogative sentences:**

1. Is he examining a patient? 2. What groups of muscles are they investigating? 3. Where was he filling in a patient's card from 10 till 11 a.m. yesterday? 4. Is this muscle contracting spontaneously? 5. Is he translating a scientific article on the muscles?

**Ex. 6. Turn the following sentences into interrogative:**

1. Cardiac muscle is pumping blood through the circulatory system with some intervals. 2. At present this system is producing body heat. 3. These cells are interacting with the external environment. 4. During definite period myoblasts were producing skeletal muscle fibers. 5. The total number of muscle fibers is establishing. 6. He is controlling the bleeding. 7. Look! The skin is pulling beyond the limits of its elasticity. 8. He is cleaning the area of wound. 9. The wound is healing by a primary union. 10. Now the clots are replacing by a connective tissue. 11. Little blood is flowing. 12. Some of the blood cells are ingesting bacteria.

### **READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 7. Compose 3-4 sentences using the words of VOCABULARY.**

**Ex. 8. Insert the missing letters:**

Cro\_s; abd\_ctor; fo\_ce; b\_iceps; \_xtend; longitu\_inal; d\_late; obli\_ue; pro\_el; triang\_lar; pos\_ure; f\_ber; pector\_l; contra\_tile; sm\_oth; compr\_se; expre\_sion; refe\_; del\_oid; mus\_le; brac\_ial; locomot\_on.

**Ex. 9. Translate the following words and word-combinations into Ukrainian:**

Contractile; smooth; associated; to be divided into; comprise; weight; locomotion; posture; propel blood through vessels; dilate; trunk; constrict; provide; force; spontaneously; cross; at least; cause; pectoral muscle; to be attached; extend; brachial; refer; buttock; gluteal; triangular; oblique; longitudinal; biceps; abductor.

**Ex. 10. Read the following words and word-combinations:**

Fiber; muscle; muscular; characterize; contractile; mass; major; associated; comprise; weight; locomotion; posture; propelling; through; stomach; dilate; constrict; provide; force; spontaneously; at least; cause; pectoral muscle; brachial; refer; buttock; gluteal; triangular; oblique; longitudinal; biceps; abductor; structure; variety; however.

**Ex. 11. Read the following text:**

#### **MUSCLES**

There are 650 muscles in the human body. The muscles are fibers, characterized by their contractile abilities. The muscle consists of the muscular fibers connected together by connective tissue. Blood vessels and nerves are in the muscle. Muscles contraction and relaxation causes most body movements. The muscles are subdivided into three groups. These groups are the muscles of the trunk, head, and limbs.

As for the structure the muscles are divided into three major parts: skeletal, cardiac, and smooth. Skeletal muscle with its associated connective tissue comprises approximately 40% of the body's weight and is responsible for facial expressions, posture, and many body movements. Its function is controlled by our consciousness. Smooth muscles are in the walls of hollow organs and tubes, in the internal portions of the eyes, in walls of blood vessels, and in other areas. Smooth muscles perform a variety of functions, including propelling urine through the urinary tract, mixing food in the stomach and intestine, dilating and constricting the pupil, and the regulation of blood flow through blood vessels. Cardiac muscles are found only in the heart, and their contractions provide the major force for propelling blood through the circulatory system. Unlike skeletal muscles, smooth and cardiac muscles contract spontaneously.

As for the form of the muscles they can be long, short, and wide. The long muscles form the limbs, the short ones compose the facial part, and the wide muscles form the walls of the body cavities.

Muscles are attached to bones, internal organs, and blood vessels. Most skeletal muscles extend from one bone to another and cross at least one joint. Some muscles of the face, however, are not attached to bone at both ends but they are attached to the skin, which moves when the muscles contract.

Muscles are named according to their location, size, number of heads, or function.

**Location.** Some muscles are named according to their location. For example, a pectoral (chest) muscle is located in the chest, and a brachial (arm) muscle is located in the arm.

**Size.** Muscle names may also refer to the size of the muscle. For example, the *gluteus maximus* (large) is the largest muscle of the buttock, and the *gluteus minimus* (small) is the smallest muscle of the gluteal group.

**Shape.** Some muscles are named according to their shape: the deltoid (triangular) muscle is triangular.

**Orientation.** Muscles are also named according to the structure of their fibers: an oblique muscle lie oblique to the longitudinal axis of the body.

**Number of heads.** The number of heads, which a muscle has, may also be used in naming the muscle. A biceps muscle has two heads.

**Function.** Muscles are also named according to their function. An abductor moves a structure away from the midline.

**Ex. 12. Translate the following words and word-combinations into English:**

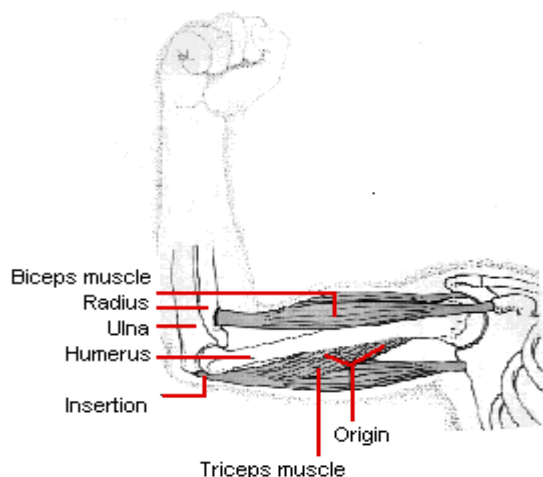
Скорочуватись; скорочувальна здатність; м'язові волокна з'єднуються разом; гладкий м'яз; супутня з'єднувальна тканина; рух; вираз обличчя; розширюватися; спонтанно скорочуватись; на відміну від скелетних м'язів; простягатися, тягнутися; називатися у відповідності з; грудний м'яз; плечовий м'яз; глутеальний м'яз; дельтоподібний м'яз; біцепс; косий м'яз; поздовжня вісь; у відповідності з напрямком; лежати (знаходитися) під нахилом до; відвідний м'яз.

**Ex. 13. Translate the text "Muscles" into Ukrainian.**

**Ex. 14. Answer the following questions:**

1. What does a muscle consist of? 2. What major muscle groups do you know? 3. What are skeletal muscles responsible for? 4. Where are smooth muscles located? 5. What are the functions of smooth muscles? 6. Where is a cardiac muscle? 7. What is its function? 8. Where are long and short muscles? 9. Where are wide muscles located? 11. What muscles' names do you know?

**Ex. 15. Complete the following sentences:**



*Muscles of the Upper Limb*

deltoid muscle has \_ shape. 11. An oblique muscle lie oblique to the \_. 12. The long muscles compose \_. 13. The short muscles form the \_ part. 14. Muscles are attached to bones, \_ , and blood vessels.

1. The muscles of the human body are characterized by \_. 2. The muscles consist of the muscular fibers and contain \_. 3. Skeletal muscles with their associated connective tissue are responsible for \_. 4. Smooth muscles are located in the walls of blood vessels and hollow organs, \_ and other body regions. 5. Smooth muscles propel urine through the urinary tract, mix food in the intestine and stomach, \_ and perform many other functions. 6. The contractions of cardiac muscles provide the major force for \_. 7. Some facial muscles are not attached to bone \_. 8. The most muscles are named according to their \_. 9. The largest muscle of the buttock is \_. 10. The

**Ex. 16. Compose the sentences using the following words and word-combinations:**

1. divided / are / smooth / into / and / cardiac / the muscles / skeletal / muscles. 2. of / the skeletal / muscles / functions / are / by / controlled / the nervous system. 3. is / cardiac muscle / in / the heart. 4. contract / and / cardiac / smooth / muscles / spontaneously. 5. skeletal muscles / from / extend / bone / one / to another. 6. cause / muscle contractions / body movements / most . 7. of / some muscles / the face / are attached / to / the skin. 8. a pectoral muscle / located / is / the chest / in . 9. the arm / muscle / is / a brachial / found / in . 10. muscles / various / have / of / number / heads. 11. a biceps / muscle / two / has / heads. 12. skeletal / the trunk / move / the head / and / muscles / the limbs. 13. propel / through / the cardiac muscles / blood / vessels. 14. through / smooth / force / food / muscles / the digestive system.

**Ex. 17. Speak on the muscles location, size, shape, orientation, and functions. The following expressions may be helpful:**

Muscles consist of... .

Muscles are divided into... .

Their function is to ... .

These muscles are/are found in ... .

Some muscles are named/are called according to ... .

**Ex. 18. Insert the missing words given below:**

1. Muscle is attached to bone by \_ and other tissues. 2. Muscles are made up of millions of tiny protein filaments, which work together \_ motion in the body. 3. Each of more than 600 muscles is served by nerves, which link the muscle to the brain and \_. 4. We \_ with three types of muscles. 5. Cardiac muscles, found only in the heart, power the action that pumps blood \_ the body. 6. Smooth muscles surround or are part of the\_. 7. Both cardiac and \_ muscles are called involuntary muscles, because they cannot be consciously controlled. 8. The third type of muscles \_ skeletal muscles. 9. The \_ muscles carry out voluntary movements. 10. Skeletal muscles are the body's most abundant tissue, comprising about 23% of a woman's body \_ and about 40% of a man's body \_.

to produce; are equipped; is called; spinal cord; tendons; internal organs; throughout; smooth; skeletal; weight.

**Ex. 19. Insert the missing prepositions (on, to, in, for, of, over):**

1. The muscles form approximately 40% \_ the body weight. 2. The long muscles compose the free limbs, and the wide ones lie \_ the trunk and form the walls of the body cavities. 3. Muscles are attached \_ the bones, internal organs, and blood vessels. 4. They allow us to make internal or external movements due \_ their contraction and relaxation. 5. As \_ the structure of the muscles there are three types of them: striated (skeletal) muscles, smooth (visceral) muscles, and a cardiac muscle. 6. The striated muscles move all the bones, face, and eyes \_ the human body. 7. The smooth muscles move the internal organs such as the organs \_ the digestive tract, blood vessels, and secretory ducts. 8. We have no control \_ visceral muscles and a cardiac muscle. 9. There are many nerves and blood vessels \_ the muscles.

**Ex. 20. Read the following abstract and translate it:**

The muscles of the thorax are involved almost entirely in the process of breathing. Four major groups of muscles are associated with the rib cage. The scalene muscles elevate the first two ribs during inspiration. The external intercostals also elevate the ribs during inspiration. The internal intercostals and transverse thoracic muscles contract during forced expiration. The major movement produced during quiet breathing, however, is accomplished by the diaphragm. It is dome shaped when relaxed; when it contracts, the dome is flattened, causing the volume of the thoracic cavity to increase and resulting in inspiration. If this wall of skeletal muscle or the phrenic nerve supplying it is severely damaged, the amount of air exchanged in the lungs may be so small that the individual is likely to die unless connected to an artificial respirator.

**Ex. 21. Compose the text from the following sentences:**

1. This key characteristic allows the muscles to shorten and lengthen and thus produce movements at the joints. 2. The muscles are fibers with elasticity that sets them apart from other body parts.

3. In the arm, for example, the contraction of biceps muscle will cause the arm to flex, whereas a contraction of the opposing triceps muscle causes the arm to extend. 4. Virtually all muscles are paired. 5. Tendons connect muscles to the bones.

6. Physicians call them involuntary muscles, because they are not under conscious control. 7. Not all muscles produce movement of the skeleton. 8. You can find these muscles in such internal organs as the stomach, uterus, and bladder and in the walls of blood vessels. 9. They usually are arranged in sheets. 10. In addition to the skeletal muscles, there are smooth muscles.

11. Heart muscle is another type of muscle. 12. Smooth muscles and heart muscles are not considered part of the musculoskeletal system. 13. This is also beyond the mechanism of voluntary control.

**Ex. 22. Translate the following sentences into English:**

1. У тілі людини знаходиться близько 650 м'язів. 2. М'яз складається з м'язових клітин. 3. Кожен м'яз містить кров'яні судини та нерви. 4. М'язи поділяються на три групи: скелетні, гладкі та серцеві м'язи. 5. Скелетні м'язи призводять до руху тулуб, голову та кінцівки. 6. Серцевий м'яз сприяє руху крові по судинам. 7. Гладкі м'язи просувають їжу по травній системі. 8. Серцеві та гладкі м'язи скорочуються спонтанно. 9. М'язи прикріплюються до кісток за допомогою сухожилків. 10. Більшість скелетних м'язів простягаються від однієї кістки до іншої. 11. Деякі м'язи обличчя прикріплюються до шкіри, яка приходить у рух тоді, коли скорочуються м'язи. 12. Довгі м'язи знаходяться у кінцівках, короткі м'язи утворюють лицьову частину, а широкі м'язи формують стінки порожнин тіла.

**Ex. 23. Make up a detailed plan of the text "Muscles".**

**Ex. 24. Speak on the structure, functions, and names of muscles.**

**Ex. 25. Make up a dialogue on muscles.**

**Ex. 26. Read the following text and answer the question: Is the body-building useful for modern people?**

**BODY-BUILDING**

Body-building is a growing sport worldwide. Once considered only for men, it currently is enjoyed by thousands of women as well. Participants in this sport combine diet and specific weight training to develop maximum muscle mass and minimum body fat. Thus all skeletal muscles must be developed to their maximum. It is relatively simple for the uniformed, untrained muscle builder to build some muscles and ignore others; the result is a disproportioned body. Skill, training, and concentration are required to build all the muscles, to know which exercises build a large number of muscles and which are specialized to build certain parts of the body.

Body-building has its own language in which it is improper to refer to a muscle by its full name. Body-builders refer to the "lats", "traps", and "delts" rather than the *lattissimus dorsi*, *trapezus*, and *deltoids*.

Body-builders concentrate on increasing skeletal muscle mass. Endurance tests conducted several years ago demonstrated that the cardiovascular and respiratory abilities of body-builders were similar to those abilities in normal, healthy persons untrained in a sport. However, more recent studies of American scientists indicate that the cardio-respiratory fitness of body-builders is similar to that of other well-trained athletes. The difference between the new studies and the older studies is attributed to modern body-building techniques that include aerobic exercise.

Photographs of body-builders are very useful in the study of anatomy to identify easily the surface anatomy of muscles that cannot be seen easily in untrained people.

## OVERVIEW

There are 650 muscles in the human body. The muscle consists of muscle cells, muscular fibers, connective tissue, blood vessels, and nerves. The muscles are divided into three major parts: skeletal, cardiac, and smooth. Skeletal muscles move the trunk, the head, and the limbs; the cardiac muscles propel blood through vessels; and smooth muscles propel food through the digestive system. The skeletal muscles are controlled by our consciousness. Smooth and cardiac muscles contract spontaneously. As for the form of the muscles they can be long, short, and wide. The long muscles form the limbs, the short ones compose the facial part, and wide muscles are on the trunk and form the walls of the body cavities. Muscles are attached to bones, internal organs, and blood vessels. Most skeletal muscles extend from one bone to another. Some muscles of the face are attached to the skin. Muscles are named according to their location, size, number of heads, or function.

## LESSON 29

### TRAUMAS OF SOFT TISSUES

#### VOCABULARY

<b>tear</b> [tɪr] рвана рана	<b>seal</b> [si:l] скріплювати
<b>cut</b> [kʌt] різана рана	<b>debris</b> [deɪbrɪ:] залишки
<b>stab</b> [stæb] колота рана	<b>granulation tissue</b> [ˈgrænjuːleɪʃən] грануляційна тканина
<b>contused wound</b> [kɒnˈtjuːzd ˈwu:nd] забійна рана	<b>persist</b> [pɜːsɪst] зберігатися
<b>gunshot wound</b> [ˈɡʌn ʃɒt] вогнепальна рана	<b>scar</b> [skɑː] рубець, шрам
<b>pull</b> [pʊl] рвати, розривати	<b>gap</b> [ɡæp] розрив, розходження
<b>pointed</b> [pɔɪntɪd] загострений, гострий	<b>much more</b> значно більше, набагато більше
<b>penetrate</b> [penɪtreɪt] проникати всередину, проходити крізь, пронизувати, пробивати	<b>healing</b> [ˈhi:lɪŋ] загоювання (рани, виразки), гоєння
<b>stick</b> [stɪk] триматися, притримуватися	<b>reasonable</b> [ˈri:znəbəl] доцільний
<b>gape</b> [geɪp] розходитися	<b>suture</b> [ˈsju:ʃər] накладати шов, зашивати; шов
<b>blunt</b> [blʌnt] тупий	<b>bind</b> [baɪnd] зв'язувати, стягувати
<b>underneath</b> [ˈʌndəˈni:θ] нижче	<b>pus</b> [pʊs] гній
<b>union</b> [juːnjən] зрощення, зрощування (тканин, кісток та т.п.)	<b>ingest</b> [ɪnˈdʒest] ковтати, проковтнути; поглинати
<b>clot</b> [klɒt] згусток крові	<b>repair</b> [rɪˈpeɪr] загоєння
<b>scab</b> [skæb] струп (на рані)	

#### READING AND DEVELOPING SPEAKING SKILLS

##### Ex. 1. Insert the missing letters:

W\_und; sut\_re; \_lot; se\_l; he\_ling; sca\_; persi\_t; debri\_; unde\_neath; contu\_ed wound; g\_nshot wound; p\_s; pen\_trate; pu\_l.

##### Ex. 2. Translate the following words and word-combinations into Ukrainian:

Tear; cut; stab; contused wound; gunshot wound; pull; sharp object; pointed object; penetrate; the edges don't gape; a blunt force acts on the soft parts; the soft parts are held between the force and the bone; primary union; the edges are not close together; the wound fills with blood; clot; bind; scab; seal; blood cells ingest bacteria; tissue debris; pus; granulation tissue; persist; scar; the wound edges are far apart; close the gap completely; to cover the wound; to speed healing; to suture; the degree of scarring.

##### Ex. 3. Read the following words and word-combinations:

Occur; edge; cause; essential; vertically; diagonally; blunt; underneath; heal; primary union; fibrin; bind; dry; seal; isolate; microorganism; foreign; phagocyte; neutrophil; ingest; thus; mixture; pus; epithelial cell; remove; dead; gap; completely; cover; reduce; lead; disfiguring; reasonable; suture; faster; lowered; severe; called.

**Ex. 4. Read the following text:**

**WOUNDS**

There are some types of wounds. They are tears, cuts, stabs, contused wounds, and gunshot wounds.

Tears occur when the skin is pulled beyond the limits of its elasticity. The edges of the wound are irregular. Tears are usually caused by sharp-edged objects such as broken glass. Deep tears can damage nerves and blood vessels. Cuts are caused by action of sharp object. Stabs are caused by pointed objects, which penetrate into the tissue. External bleeding is usually not severe, but there might be severe internal bleeding. The wound edges are generally stuck together and do not gape. Contused wounds occur when a blunt force acts on the soft parts, with bones a short distance underneath, so that the soft parts are held between the force and the bones.

If the edges of the wound are close together, the wound heals by a process called primary union. If the edges are not close together or if there has been extensive loss of tissue, the process is called secondary union.

In the primary union the wound fills with blood, and clots form. The clot contains a fibrin, which binds the edges of the wound together. The surface of the clot dries to form a scab, which seals the wound and helps prevent infection. Fibrin and blood cells move into the wounded tissues. The fibrin acts to isolate microorganisms and other foreign substances. Some of the white blood cells (phagocytic cells called neutrophils) ingest bacteria, thus helping to fight infection. They also ingest tissue debris, clearing the area for repair. Neutrophils are killed in this process and may accumulate a mixture of dead cells and fluid called pus. After a few days the epithelial cells from the edges meet, forming a single layer of cells over the wound. As the new epithelium forms, a second type of phagocytic cell removes the dead neutrophils and cellular debris. Then the clots are replaced by a connective tissue (granulation tissue). A large amount of granulation tissue sometimes persists as a scar.

Repair by secondary union is similar to healing by primary union, but there are some differences. Because the wound edges are far apart, the clot may not close the gap completely. Much more granulation tissue forms and wound contraction reduces the size of the wound and speeds healing. Wound contraction can lead to disfiguring scars. Thus it is reasonable to suture a large wound so that it can heal by primary rather than secondary union. Healing will be faster, the risk of infection will be lowered, and the degree of scarring will be reduced.

**Ex. 5. Translate the words into English:**

Гній; накладати шов; зберігатися; шрам, рубець; загоєння; розрив, розходження; пробивати, пронизувати, проникати всередину; згусток крові; зрощення рани; накладати шов; рвати, розривати; рвана рана; різана рана; колота рана; вогнепальна рана.

**Ex. 6. Translate the text "Wounds" into Ukrainian.**

**Ex. 7. Insert the missing words given below. Put the verbs into correct tense form:**

1. There are some \_ of wounds. 2. They are tears, cuts, \_ , \_ wounds, and gunshot wounds. 3. Tears occur when the covering skin is\_. 4. The \_ of the wound are irregular. 5. \_ are caused by action of sharp object. 6. Stabs are \_ by a pointed object. 7. The wound edges are generally stuck together and do not\_. 8. Contused wounds occur when a \_ force acts on the soft parts, with bones a short distance\_ .

stabs; to pull; types; edges; underneath; to cause; contused; to cut; to gape; blunt.

**Ex. 8. Make up sentences using the following words and word-combinations:**

1. is / occur / tears / the covering skin / pulled / when. 2. sharp / caused / cuts / are / action / object / by / of. 3. are / by / a pointed / caused / object / stabs. 4. contused wounds / underneath / on / when / a blunt force / acts / bones / the soft parts/ occur / with / a short distance.

**Ex. 9. Answer the following questions:**

1. What types of wound are there? 2. When do tears occur? 3. Can you characterize the edges of wound in tears? 3. In what cases do cuts occur? 4. What are the causes of stabs? 5. Describe the edges of the wound in stabs. 6. What are the causes of contused wounds?

**Ex. 10. Translate the following sentences into English:**

1. Існує кілька видів ран. Це – рвані, різані, колоті, забійні та вогнепальні рани. 2. Вогнепальні рани одні з самих серйозних видів ран. 3. Рвані рани виникають у тих випадках, коли розривається шкіра. 4. Края цих ран – нерівні. 5. Різані рани викликаються дією гострого предмету. 6. Загострений предмет може призвести до колотої рани. 7. Забійні рани виникають під дією тупого предмету.

**Ex. 11. Speak on the types of wounds and the causes of their occurring.**

**Ex. 12. Insert the missing words:**

1. In the primary union the wound fills with blood, and \_ form. 2. The surface of the clot dries to form a \_, which seals the wound and helps prevent infection. 3. After a few days the epithelial cells from the edges meet, forming a single layer of cells over the \_. 4. Then the clots are replaced by a \_ tissue.

**Ex. 13. Answer the questions:**

1. What is primary union? 2. What does the wound fill with in the primary union? 3. Why does the surface of the clot dry? 4. What is the function of fibrin? 5. What is the function of a second type of phagocytic cells?

**Ex. 14. Speak on the primary union.**

**Ex. 15. Answer the questions:**

1. What is the secondary union? 2. What is the difference between primary and secondary unions? 3. What can wound contraction lead to?

**Ex. 16. Speak on the secondary union.**

**Ex. 17. Read the following text and get ready to narrate it:**

**EMERGENCY CARE OF WOUNDS**

**Cuts.** If you sustain a small cut that bleeds only slightly, wash the cut thoroughly with mild soap and water. Apply a bandage to keep it clean. If the cut is more serious you must stop bleeding by applying pressure directly to the injury, using a sterilized gauze pad or clean cloth. Maintain pressure on the wound until the bleeding stops.

**Stabs.** A stab doesn't usually result in excessive bleeding. Often little blood will flow and the wound will seem to close almost instantly. These features, however, do not mean that treatment is unnecessary. Stabs are dangerous because of the risk of infection. The object that caused the wound may carry spores of the tetanus or other bacteria. These can result in serious infections. If you sustain a stab, stop the bleeding, if necessary, by applying pressure with a sterilized gauze pad or clean cloth. Then seek emergency care for appropriate treatment to prevent tetanus or other infection.



**Soft tissue injuries.** These injuries may involve considerable bleeding. The skin is damaged, as are underlying tissues such as muscle, supporting structures, and blood vessels. Such injuries can occur when an area is struck and badly cut, when the skin is separated from the underlying tissues, or when areas of the skin are forcefully torn away. Soft tissue injuries require special treatment at the hospital or polyclinic.

## OVERVIEW

There are some types of wounds. They are tears, cuts, stabs, contused wounds, and gunshot wounds. Tears occur when the covering skin is pulled. The edges of the wound are irregular. Cuts are caused by action of sharp object. Stabs are caused by pointed objects. The wound edges are generally stuck together and do not gape. Contused wounds occur when a blunt force acts on the soft parts, with bones a short distance underneath. If the edges of the wound are close together, the wound heals by a process called primary union. If the edges are not close together or if there has been extensive loss of tissue, the process is called secondary union. In the primary union the wound fills with blood, and clots form. The surface of the clot dries to form a scab. It seals the wound and helps prevent infection. After a few days the epithelial cells from the edges meet, forming a single layer of cells over the wound. Then the clots are replaced by a connective tissue. Repair by secondary union is similar to healing by primary union, but there are some differences.

## LESSON 30 BLOOD

### VOCABULARY

<b>volume</b> [ˈvɒljʊm] обсяг, об'єм	<b>pale</b> [peɪl] блідий
<b>matrix</b> [ˈmeɪtrɪks] матрикс, міжклітинний матеріал	<b>protein</b> [ˈprəʊtɪn] білок
<b>average</b> [ˈævərɪʒ] середній; звичайний	<b>albumin</b> [ˈælbjʊmɪn] альбумін
<b>approximately</b> [ˌæprɒksɪmətli] приблизно	<b>globulin</b> [ˈɡlɒbjʊlɪn] глобулін
<b>fluid</b> [ˈfluɪd] рідина	<b>fibrinogen</b> [ˈfaɪbrɪnoʊdʒən] фібриноген
<b>plasma</b> [ˈplæzmq] плазма	<b>clot</b> [klɒt] згусток крові, тромб
<b>erythrocyte</b> [ˈɪrɪθrəsaɪt] еритроцит	<b>suspend</b> [ˈsqsˈpend] підвішувати; висіти
<b>corpuscle</b> [ˈkɔ:pʌsl] часточка, корпускула, тільце, елемент крові	<b>remove</b> [rɪˈmu:v] видаляти
<b>thrombocyte</b> [ˈθrɒmbəʊsaɪt] тромбоцит	<b>serum</b> [ˈsɪqrqm] сироватка
<b>platelet</b> [ˈpleɪtlet] тромбоцит, кров'яна пластинка	<b>nutrient</b> [ˈnju:trɪqnt] поживна речовина
<b>leukocyte (leucocyte)</b> [ˈlju:kəsaɪt] лейкоцит	<b>waste</b> [weɪst] непотрібний, непридатний, некорисний
	<b>enzyme</b> [ˈenzəɪm] фермент
	<b>maintenance</b> [ˈmeɪntənəns] підтримка, збереження

### WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Suffix of Adverbs:**

**-ly**

quick *швидкий* – quickly *швидко*

slow *повільний* – slowly *повільно*

**Ex. 2. Read and translate the following words:**

Greatly; normally; partly; daily; really; weekly; primarily; usually; approximately; mainly; principally; structurally.

### GRAMMAR:

**Ex. 3. Familiarize yourself with the data of the following table:**

**PERFECT TENSES**  
**(Passive Voice, Affirmative Form)**  
**to have + been + Participle II (V<sub>3</sub>)**

TENSE		SUBJECT	PREDICATE	
PERFECT	Present	I, they, you, we he, she, it	have been has been	V <sub>3</sub>
	Past	I, he, she, it, they, you, we	had been	V <sub>3</sub>
	Future	I, we he, she, it, you, they	shall have been will have been	V <sub>3</sub>

**MODEL:**

The cause of the peptic ulcer **has been determined**.

The article **had been published** by 2006.

The exact amount of gastric juice **will have been estimated** before the surgeon comes.

**Ex. 4. Read and translate the following sentences into Ukrainian:**

1. A healing process has been noted by roentgenologists. 2. High acidity had been found in patient without X-ray. 3. Uncomplicated duodenal ulcer has been treated largely by medical means. 4. Surgical treatment of peptic ulcer has been reserved for the complications of the disease. 5. The high mortality has been steadily reduced within the past decade. 6. Duodenal ulcer has been associated with severe pain. 7. The pyloric sphincter allows food to leave the stomach when food has been sufficiently digested.

**Ex. 5. Read the following phrases which are used in SUMMARY:**

It has been indicated (that) ...	Було вказано, що ...
It has been noted (that) ...	Зазначено, що ...
It has been determined (that) ...	Виявлено, що ...
It has been estimated (that) ...	Встановлено, що ...
Basic principles of ... have been formulated.	Були сформульовані основні принципи...
The research results of ... have been submitted.	Представлені результати дослідження ...

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 6. Read VOCABULARY and memorize new words.**

**Ex. 7. Insert the missing letters:**

Mainten\_nce; leu\_ocyte; er\_throcyte; enz\_me; s\_rum; plasm\_; \_lot; ma\_or; fibr\_nogen; mi\_roorganism; infec\_ion.

**Ex. 8. Translate the following words and word-combinations into Ukrainian:**

Connective tissue; corpuscle; pale yellow fluid; clot-producing; platelet; fluid matrix; remaining fluid; average adult; however; waste products; maintenance; suspended molecules; to protect against; remove; site of infection; slightly; more than half; body's total weight.

**Ex. 9. Read the following words enunciating them clearly:**

Total blood volume; approximately; to be classified; corpuscles; platelet; hormone; enzyme; leukocyte; thrombocyte; erythrocyte; plasma; dissolved component; nutrient; maintenance; formed elements; major category.

**Ex. 10. Read the following text:**

## BLOOD

Blood is classified as a connective tissue, consisting of cells and cell fragments surrounded by a liquid matrix. The total blood volume in the average adult is approximately 4 to 5 L in females and 5 to 6 L in males. Blood makes up approximately 8% of the body's total weight.

The cells and cell fragments are the formed elements, and the fluid matrix is the plasma. The formed elements of the blood include several types of highly specialized cells and cell fragments. They are grouped into three major categories. Approximately 95% of the volume of the formed elements consists of erythrocytes (red blood cells or corpuscles). The remaining 5% consists of leukocytes (white blood cells or corpuscles) and platelets (cell fragments), which are also called thrombocytes.

Plasma is a pale yellow fluid accounting for slightly more than half the total blood volume and consisting of approximately 92% water and 8% dissolved or suspended molecules. Plasma contains proteins such as albumin, globulin, and fibrinogen. When the proteins that produce clots are removed from the plasma, the remaining fluid is called serum. In addition to the suspended molecules, plasma also contains a number of dissolved components such as salts, nutrients, gases, waste products, hormones, and enzymes. Water enters the plasma from the digestive tract, from interstitial fluids, and as a by-product of metabolism. Excess water is removed from the plasma through the kidneys, lungs, intestinal tract, and skin. Solutes in the plasma come from several sources such as the liver, kidneys, intestines, endocrine glands, and immune tissues such as the spleen.

The functions of the blood can be placed into the categories of transportation, maintenance, and protection. Blood transports gases, nutrients, waste products, and hormones. It is involved in the regulation of homeostasis and the maintenance of pH, body temperature, fluid balance, and electrolyte level. Blood protects against diseases and blood loss.

### Ex. 11. Translate the following words and word-combinations into English:

Розчинені компоненти; вага тіла людини; загальний об'єм крові; утворювати згустки; міжклітинний матеріал; ферменти; сироватка; складатися з; включати кілька типів; поділятися на; червоні кров'яні тільця; кров'яні пластинки; білі кров'яні тільця; поживні речовини; транспортувальна функція; захисна функція; білки; видаляти.

### Ex. 12. Translate the text "Blood" into Ukrainian.

### Ex. 13. Complete the following sentences:

1. Blood is a type of \_ tissue whose cells are suspended in a liquid intracellular material. 2. Blood consists of a liquid portion called \_ and a solid portion. 3. This portion also named as the cellular fraction includes \_, \_, \_. 4. \_ are essential for the clotting of blood. 5. \_ are the most numerous blood cells. 6. The blood plays an important role in \_ homeostasis.

### Ex. 14. Answer the following questions:

1. What type of tissue is the blood? 2. What is the total blood volume in an average adult? 3. What does the blood consist of? 4. What is the plasma? 5. What does the plasma contain? 6. What is blood serum? 7. What major categories are the formed elements grouped into? 8. What blood cells are the most numerous? 9. What are the major functions of the blood?

### Ex. 15. Read the following terms and try to match them with the Ukrainian equivalents. Memorize the meaning of the term-element "h(a)emo-" from Greek "blood".

Hemoglobin, hemoconcentration, hemorrhage, hemocyte, hemocytometer, hemodiagnosis, hemogram, hemology, hemomediastinum, hemopathy, hemophobia, hemodynamics.

Крововилив, кровотеча; гематологія; гемодинаміка; гемофобія (патологічна боязнь кровотечі чи виду крові); гемопатія; гемоглобін; гемоцитометр; гемодіагностика (діагноз, що ґрунтується на вивченні крові); гемограма (формула крові); витікання крові у середостіння;

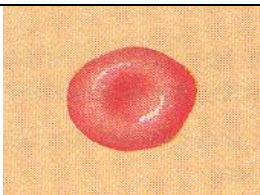
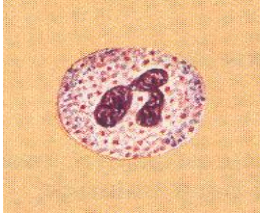
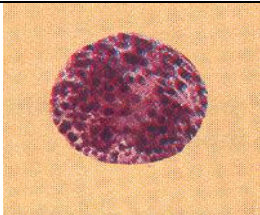

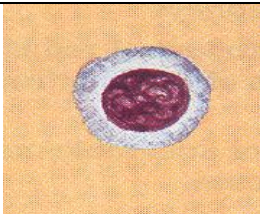
гемоконцентрація (згущення крові); клітина крові.


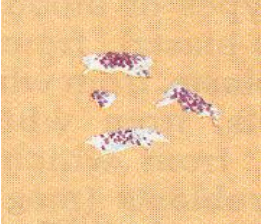
**Ex. 16. Pronounce and memorize the words to the theme studied:**

**Biconcave** подвійноввігнутий; **spherical** кулястий, сферичний; **stain** забарвлення; **release** вивільняти; **histamine** гістамін; **promote** сприяти, допомагати, підтримувати; **inflammation** запалення; **heparin** гепарин; **prevent** попереджувати, запобігати; **worm** черв'як; **parasite** паразит; **debris** [*ˈdeɪbrɪʃ*] залишки органічних речовин; **plug** пробка.

**Ex. 17. Read the information the table represents. Having familiarized yourself with the table, compose the information on the blood, types of blood cells and their functions, using the given data. Draw up the plan and key words to each its item.**

**FORMED ELEMENTS OF THE BLOOD**

CELL TYPE		DESCRIPTION	FUNCTION
Erythrocytes		Biconcave disk; no nucleus; 7-8 $\mu\text{m}$ in diameter	Transports oxygen and carbon dioxide
Leukocyte Neutrophil		Spherical cell; nucleus with two to four lobes connected by thin filaments; cytoplasmic granules stain a light pink or reddish-purple; 12-15 $\mu\text{m}$ in diameter	Phagocytizes microorganisms
Basophil		Spherical cell; nucleus with two indistinct lobes; cytoplasmic granules stain blue-purple; 10-12 $\mu\text{m}$ in diameter	Releases histamine, which promotes inflammation, and heparin, which prevents clot formation
Eosinophil		Spherical cell; nucleus often with two lobes; cytoplasmic granules stain orange-red or bright red; 10-12 $\mu\text{m}$ in diameter	Releases chemicals that reduce inflammation; attacks certain worm parasites
Lymphocyte		Spherical cell with round nucleus; cytoplasm forms a thin ring around the nucleus; 6-8 $\mu\text{m}$ in diameter	Produces antibodies and other chemicals responsible for destroying microorganisms; responsible for allergic reactions, graft rejection, tumor control, and regulation of the immune system

Monocyte		Spherical cell; nucleus round, kidney, or horse-shoe shaped; contains more cytoplasm than does lymphocyte; 10-15 $\mu\text{m}$ in diameter	Phagocytic cell in the blood; leaves the blood and becomes a macrophage, which phagocytizes bacteria, dead cells, cell fragments, and debris within tissues
Platelet		Cell fragments surrounded by a cell membrane and containing granules; 2-5 $\mu\text{m}$ in diameter	Forms platelet plugs; releases chemicals necessary for blood clotting

**Ex. 18. Choose the proper terms from the box for the definitions:**

1. Liquid portion of blood containing water, proteins, salts, nutrients, hormones, vitamins. 2. Tiny cells, which are necessary for blood clotting. 3. These cells are biconcave disks made in the bone marrow, they transport oxygen. 4. Plasma minus the clotting proteins and clotting cells. 5. “Little body” refers to blood cells. 6. This substance is necessary for the synthesis of hemoglobin, is absorbed from small intestines; insufficiency of this substance may result in anemia.

thrombocytes, serum, corpuscles, erythrocytes, lymphocytes, plasma, iron, protein.

**Ex. 19. Translate the following sentences without using a dictionary:**

1. Red blood cells are tiny, biconcave disks that are thin near their centers and thicker around their rims. 2. This special shape is related to the red cell’s function of transporting gases. 3. Each red blood cell is about one-third hemoglobin by volume, and this substance is responsible for the color of the blood. 4. The number of red blood cells varies from time to time even in healthy individuals, the normal range for adult males is 4.2 to 5.8 million cells per  $\text{mm}^3$ , and that for adult females is 3.6 to 5.2 million cells per  $\text{mm}^3$ . 5. The number of red blood cells generally increases following exercises, a large meal, a rise in temperature, or an increase in altitude (висота над рівнем моря). 6. After an infant is born, the red blood cells are produced almost exclusively by the tissue that lines the spaces within the red bone marrow. 7. White blood cells function primarily to control various disease conditions. 8. Normally, five types of white cells can be found in the circulating blood. 9. They are distinguished by their size, the nature of their cytoplasm, the shape of their nucleus, and their staining characteristics. 10. The procedure used to count white blood cells is similar to that used for counting red cells. Normally, there are from 5.000 to 10.000 white cells per  $\text{mm}^3$  of human blood. 11. Since the total number of white blood cells may change in response to abnormal conditions, white blood cells count is of clinical interest.

**Ex. 20. Try to choose which of the following sentences are incorrect (true or false choice):**

1. Blood can be separated into solid and liquid portions. 2. The solid cellular portion is mostly white blood cells. 3. Red blood cells function to control disease conditions. 4. The plasma proteins are classified into three major groups: albumins, globulins, and fibrinogens. 5. Total blood volume does not vary by the sex (male or female).

**Ex. 21. Compose the dialogue on the composition and functions of the blood.**

**Ex. 22. Read and translate the following text:**

**PLATELETS**

Platelets, or thrombocytes, are minute fragments of cells consisting of a small amount of cytoplasm surrounded by a cell membrane. They are roughly disk shaped and average approximately 3  $\mu\text{m}$  in diameter.

The life expectancy of platelets is approximately 5 to 9 days. Platelets are produced within the marrow and are derived from megakaryocytes, which are extremely large cells with diameters up to 100  $\mu\text{m}$ . Small fragments of these cells break off and enter the circulation as platelets.

Platelets play an important role in preventing blood loss. This prevention is accomplished in two ways: the formation of platelet plugs, which seal holes in small vessels; and the formation of clots, which help seal off larger wounds in the vessels.

If the number of platelets is too low, excessive bleeding can occur. However, if the number of platelets is too high, blood clots can form (thrombosis), which may obstruct blood vessels and result in such events as stroke, heart attack, pulmonary embolism or blockage of blood vessels to other parts of the body, such as the extremities of the arms or legs.

**Ex. 23. Answer the following questions:**

1. What is platelet? 2. What is the shape of platelet? 3. What is the life expectancy of platelets? 4. Where are the platelets produced? 5. What is the major function of platelets?

**Ex. 24. Read and retell the following text:**

**LEUKOCYTES**

Leukocytes, or white blood cells, are nucleated blood cells that lack hemoglobin. They are clear or whitish in color and are larger than erythrocytes, ranging from 8 to 19  $\mu\text{m}$  in diameter. In stained preparations leukocytes attract stain, whereas erythrocytes remain relatively unstained.

Leukocytes protect the body against invading microorganisms and remove dead cells and debris from the body. Leukocytes leave the circulation by the process of diapedesis (movement through vessel walls) and move through the tissues in which they ingest foreign material or dead cells. At the site of an infection leukocytes accumulate and phagocytize bacteria, dirt, and dead cells; then they die. This accumulation of dead leukocytes, along with fluid and cell debris, is called pus.

Leukocytes are named according to their appearance in stained preparations. Leukocytes containing large cytoplasmic granules are granulocytes, and those with very small granules that cannot be seen easily with the light microscope are agranulocytes. The three types of granulocytes are named according to the staining characteristics of their cytoplasm: neutrophils, eosinophils, and basophils. There are two types of agranulocytes: monocytes and lymphocytes.

**Ex. 25. Translate the following sentences into English.**

1. Основними життєво важливими функціями крові є транспортувальна та захисна функції, а також функція підтримання стабільного клітинного середовища. 2. Кров переносить поживні речовини з шлунково-кишкового тракту та кисень з дихальних органів до усіх клітин організму. 3. Продукти розпаду транспортуються кров'ю до дихальних та видільних органів. 4. Загальний обсяг крові поділяється на циркулюючий (circulating) обсяг крові та резервний (reserve) обсяг крові. 5. Резервна кров зберігається в певних органах, наприклад, в печінці. 6. Плазма крові містить амінокислоти, прості цукри, різноманітні ліпіди. 7. Функції плазми полягають у перенесенні газів, поживних речовин та вітамінів, у регулюванні рідинного та електролітичного (electrolyte) балансу, у підтриманні відповідного рН.

**OVERVIEW**

Blood is a type of connective tissue. Blood transports gases, nutrients, waste products, and hormones. It is involved in the regulation of homeostasis and the maintenance of pH, body temperature, fluid balance, and electrolyte level. Blood protects against diseases and blood loss. Blood is composed of plasma and erythrocytes, leucocytes and blood platelets. The plasma is composed of water, amino acid, proteins, carbohydrates, lipids, vitamins, and hormones. The erythrocytes are the most numerous cellular elements of blood. Platelets are minute fragments of

cells consisting of a small amount of cytoplasm surrounded by a cell membrane. The main function of red blood cells is to transport gases. White blood cells function primarily to control various disease conditions. Blood platelets help close breaks in blood vessels.

**LESSON 31**  
**BLOOD GROUPS**  
**BLOOD TRANSFUSION**

**VOCABULARY**

<b>transfusion</b> [trɒns'fju:z(ə)n] переливання	<b>severe</b> [sɪ'veɪ] тяжкий, серйозний
<b>compatible</b> [kəm'pætəbəl] сумісний	<b>lesion</b> ['lɪ:zən] ураження
<b>antibody</b> [ˌæntɪ'bɒdɪ] антитіло	<b>contraindication</b> [ˌkɒn'trɪ'kəʃ(ə)n] протипоказання
<b>antigen</b> [ˌæntɪ'ɡɛn] антиген	<b>disposable</b> [dɪ'spəzəbəl] одноразовий
<b>lack</b> [læk] потребувати; відчувати нестачу	<b>syringe</b> ['sɪrɪndʒ] шприц
<b>accident</b> [ˌæksɪd(ə)nt] нещасний випадок, аварія	<b>replace</b> [rɪ'pleɪs] заміщати
<b>surgery</b> ['sɜ:ʒəri] хірургічне втручання	<b>malaria</b> [mə'lɪəriə] малярія

**WORD-BUILDING**

**Ex. 1. Familiarize yourself with the following material:**

**Suffixes of Verbs:**

**-ate**

prognosticate *прогнозувати, передбачати ймовірне завершення хвороби*

**-ize (-ise)**

special *спеціальний* – to specialize *спеціалізувати*

neutral *нейтральний* – to neutralize *нейтралізувати*

**-fy**

classify *класифікувати*

**Ex. 2. Read and translate the following words:**

**A.** Translate; penetrate; integrate; narrate; participate; regulate; eliminate; articulate; separate; dilate; isolate; evacuate.

**B.** Characterize; memorize; organize; mobilize; synthesize; comprise.

**C.** Identify; modify; amplify.

**GRAMMAR**

**Ex. 3. Familiarize yourself with the data of the following table:**

**PERFECT TENSES**

(Passive Voice, Interrogative Form)

Tense	Questioning word	Auxiliary verb	Subject	Predicate (Form of the Verb)	Example
<b>Present Perfect Tense, Passive Voice</b>	What	<b>have</b>	I, you, we they	<b>been + V<sub>3</sub></b> (been studied, been written)	<b>Has the text been translated</b> today?
	Why	<b>has</b>	he, she, it		
<b>Past Perfect Tense, Passive Voice</b>	Where	<b>had</b>	I, he, she, it, you, we, they	<b>been + V<sub>3</sub></b> (been studied, been written)	Where <b>had</b> the patient <b>been examined</b> ?
<b>Future Perfect Tense, Passive Voice</b>	How many	<b>shall</b>	I, we	<b>have + been + V<sub>3</sub></b> (have been studied, have been written)	When <b>will</b> the hospital <b>have been</b>
	How much	<b>will</b>	he, she, it, you, they		<b>been modernized</b> ?

**Ex. 4. Read and translate the following interrogative sentences:**

1. Have the proteins that produce clots been removed from the plasma?
2. Will the structure of leukocytes have been described in your article?
3. Had the number of erythrocytes been counted by 3 o'clock?
4. How has the amount of radiation used for routine X-ray examinations been reduced?
5. Why has the bronchodilator drug been administered to the patient?

**Ex. 5. Make the following sentences interrogative:**

1. Cell fragments have been grouped into three major categories. 2. The blood has been distributed to the different organs of the body. 3. Large amounts of blood have been needed for kidneys and brain. 4. Food materials will have been absorbed by the small intestine. 5. The nourishment had been received by the duodenal glands by the end of operation. 6. Platelets have been produced within the marrow.

### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 6. Read VOCABULARY and memorize new words.**

**Ex. 7. Insert the missing letters:**

M\_rrow; s\_ringe; c\_toplasm; v\_ssel; er\_throcyte; ant\_body; platel\_t; lac\_; leu\_ocyte; gro\_p; t\_pe; ca\_ry; rec\_pient.

**Ex. 8. Read the following words:**

Erythrocyte; molecule; agglutination; agglutinin; group; neither; rhesus; plasma; certain; designate.

**Ex. 9. Read the following text:**

#### BLOOD GROUPS

The blood groups were discovered around 1900, when it was observed that blood collected for transfusions was compatible in some recipients but not in others. It has been found that each person spontaneously forms antibodies against antigens that his/her own red blood cells lack.

The surface of erythrocytes has molecules called antigens, and in the plasma there are molecules called antibodies. An antibody is very specific, meaning it can combine only with certain antigen. When the antibodies in the plasma bind to the antigens on the surface of the erythrocytes, they form molecular bridges that connect the erythrocytes together. As a result, agglutination of the cells occurs. The combination of the antibodies with the antigens can also initiate reactions that cause hemolysis or rupture of the erythrocytes. Because the antigen-antibody combination can cause agglutination, the antigens are often called agglutinogens, and antibodies are called agglutinins.

All humans and many other primates can be typed for the ABO blood group. Everyone in the world can be classified into four categories: A, B, AB and O. Definition of each category depends on the 'antigens' present on red blood cells, and the 'antibodies' present in the blood plasma. In the ABO blood group type A blood has type A antigens, type B blood has type B antigens, type AB blood has both types of antigens. Type O blood has neither A nor B antigens. In addition, type A blood has plasma with type B antibodies. Type B blood has plasma with type A antibodies. Type AB blood has no plasma antibodies. Type O blood has both A and B plasma antibodies.

Another important blood group is the Rh blood group, so named because it was first studied in the rhesus monkey. People are Rh positive if they have a certain Rh antigen (the D antigen) on the surface of their erythrocytes, and they are Rh negative if they do not have this Rh antigen.

The ABO blood type and the Rh blood type usually designated together. For example, a person designated as A positive is type A in the ABO blood group and Rh positive. In parts of Europe the "O" in ABO blood type is substituted with "0" (zero), signifying the lack of A or B antigen. In Ukraine and some other countries blood types are referenced using numbers and Roman numerals instead of letters. This is Janský's original classification of blood types.



It designates the blood types of humans as I, II, III, and IV, which are elsewhere designated, respectively, as O, A, B, and AB.

**Ex. 10. Translate the following words and word-combinations into English:**

Утворювати антитіла; поверхня еритроцитів; переливання крові; донор; реципієнт; резус-позитивний; містити антитіла; виявляти; поверхня.

**Ex. 11. Answer the following questions:**

1. When were the blood groups discovered? 2. How many main blood types are distinguished? 3. What is ABO blood grouping based on? 4. What does the typing of Rh-factor depend on? 5. What blood is said to be Rh-positive?

**Ex. 12. Write out key words of the text “Blood Groups”.**

**Ex. 13. Make up a plan of the text “Blood Groups”.**

**Ex. 14. Give a summary of the text “Blood Groups”.**

**Ex. 15. Speak on the blood groups.**

	Type A	Type B	Type AB	Type O
<b>Red Blood Cells</b>	Antigen A	Antigen B	Antigens A and B	Neither antigen A or B
<b>Plasma</b>	Antibody B	Antibody A	Neither antibody A or B	Antibodies A and B

**Ex. 16. Make up a dialogue on blood groups.**

**Ex. 17. Find the corresponding Ukrainian equivalents for the English terms:**

- |                          |  |
|--------------------------|--|
| 1. clotting of blood     | A. об'єм циркулюючої крові                 |
| 2. blood transfusion     | B. несумісність крові                      |
| 3. blood composition     | C. брати кров                              |
| 4. adverse reaction      | D. згорання крові                          |
| 5. to take blood         | E. переливання крові                       |
| 6. blood incompatibility | F. склад крові                             |
| 7. blood volume          | G. негативна відповідь (реакція) організму |

**Ex. 18. Pronounce and memorize the words to the theme studied:**

**Hemophilia** гемофілія; **suitable** підхожий, придатний, відповідний; **donor** донор; **recipient** реципієнт; **sample** зразок, проба.

**Ex. 19. Read the following text:**

**BLOOD TRANSFUSION**

Blood transfusions are often necessary to save the life of a person who has a blood disorder, some other diseases, an accident, or surgery. For example, one of the major aids in acute and chronic anemia as well as in shock, hemophilia and so on is transfusion of blood. Blood transfusion produces good results in patients with purulent and septic processes, anaerobic infection, diatheses and others. Disorders of the cardiac function, severe lesion of the kidneys and liver, acute forms of TB and hypertension are the contraindications for blood transfusion.

If the persons older than 17 and weighs at least 110 pounds, they may be suitable blood donors. However, the person must not donate if he/she has had certain disease, such as hepatitis, or if he/she is a member of a risk group for AIDS.

A donor is a person who gives blood, and a recipient is a person who receives blood. Usually a donor can give blood to a recipient if they both have the same blood type. People with type O blood have been called universal donors because they usually can give blood to the other ABO blood types without causing an ABO transfusion reaction.

To give blood, the person goes to a blood donation center or a hospital. There, trained staff members will take a small sample of the blood to check whether a donor has enough hemoglobin. We must remember that blood transfusion can spread diseases such as hepatitis, syphilis, malaria, and AIDS. Various tests are performed on donated blood to minimize the risk of infection. Giving blood is quick and painless. It is also completely safe, because a new, sterile, disposable syringe is used for each donor. Therefore, there is no risk of getting any disease by donating blood. The average volume of blood in the body is 10 to 12 pints in men and 8-9 pints in women. The usual amount of blood taken during donation is 1 pint. Within a few hours, the person's body will have replaced the fluid the person has lost.

**1 pint** (measure of capacity, liquid) = 0.568 l in the UK and 0,473 l in the USA.

**1 pound** (weights in English-spoken countries) = 453.6 g.

**Ex. 20. Read and translate into Ukrainian:**

To save the life; acute anemia; to produce good results; severe lesion; risk group; to give blood; to spread diseases; disposable syringe; to get a disease; an average volume; to cause ABO transfusion reaction; Rh-incompatibility; adverse transfusion reaction; to take blood.

**Ex. 21. Translate the text "Blood Transfusion" into Ukrainian.**

**Ex. 22. Answer the following questions:**

1. In what conditions is blood transfusion helpful? 2. What conditions are contraindications for blood transfusion? 3. What person may give blood for transfusion? 4. How can ABO transfusion reaction be avoided? 5. Why should the donor blood be tested before using? 6. Is giving blood a painful procedure? 7. What is the usual amount of blood taken during donation?

**Ex. 23. Skim through the text "Blood Transfusion". Make up a plan of it supplying each item with key words and then narrate the information on blood transfusion according to your plan.**

**Ex. 24. Combine corresponding parts into the sentences, paying attention to the meaning of the sentences:**

1. The blood transfusion institutes and centers are doing major work on evolving methods \_.  
2. \_ quite often only some of its components are used. 3. The preparation of fibrinogen is already being used successfully \_.  
4. \_ influenza with various gamma globulins.  
A. in the case of many diseases, it is not needed in blood transfusion entirely; B. in clinics to check heavy hemorrhages in obstetrics and gynecological practice; C. of producing highly effective preparations made from blood plasma; D. certain experience has now been accumulated in the clinical treatment of whooping cough, smallpox, tetanus and.

**Ex. 25. Translate the following sentences into English:**

1. Відомо, що безпечне переливання крові залежить від відповідно підібраних груп крові донора та реципієнта. 2. Визначення групи крові полягає у виявленні (identifying) аглютиногенів (agglutinogens), наявних в оболонці еритроцитів. 3. Раніше для переливання крові застосовували лише цільну (whole) кров. 4. Сьогодні кров часто розкладають на її компоненти – червоні кров'яні тілця, білі кров'яні тілця, кров'яні пластинки та плазму. 5. Наприклад, пацієнтам з анемією або гострою крововтратою слід переливати концентровані червоні клітини крові. 6. Плазму крові використовують для відновлення втраченого об'єму

крові. 7. Щоб зменшити ризик інфікування різними хворобами, кров ретельно перевіряють.  
8. Усі компоненти крові повинні зберігатися відповідним чином.

**Ex. 26. Read and memorize some expressions and their equivalents:**

What is your blood group, Rhesus factor?	Яка у Вас група крові, який резус-фактор?
Determine group compatibility.	Визначите групову сумісність.
Take blood for cross-matching.	Візьміть кров для визначення групи крові перехресним способом.
Agglutination is absent in the drop.	В краплі аглютинація відсутня.
Start transfusion of two units (250 ml) of whole blood.	Почніть переливання двох одиниць (250 мл) цілісної крові.
Get the system for blood transfusion ready.	Підготуйте систему для переливання крові.
Check the blood transfusion system for absence of air.	Перевірте, чи немає повітря в системі для переливання крові.
Take blood from donor N.	Візьміть кров у донора Н.
There are clots in the blood. The plasma is turbid (with flakes, films).	Кров має згустки. Плазма каламутна (з пластівцями, плівками).
The blood is not fit for transfusion.	Кров непридатна для переливання.
What is the patient's reaction to blood transfusion?	Яка реакція хворого(ой) на переливання крові?
After blood transfusion the patient developed pruritus, urticaria, and high temperature.	Після переливання крові у хворого (ой) з'явилося свербіння, кропив'янка, піднялася температура.
The patient needs blood transfusion.	Хворий(а) потребує переливання крові.
Blood transfusion is contraindicated.	Переливання крові протипоказане.

**Ex. 27. Work in pairs. Compose the dialogues on the following situation using the expressions of ex. 26. Student A should start.**

A 32-year old man was admitted to the emergency room after an automobile accident. He is suspected to have severe hemorrhage.

A: Play the part of a trainee doctor. Ask about the necessity of blood transfusion for the patient and the preparations preceding the procedure of blood transfusion.

B: Play the part of an experienced doctor who manages the patient. Supply any information on the condition of the patient, his blood group, etc.

**Ex. 28. Read the following material:**

**SUMMARY**

Резюме – це стислий виклад наукової праці, статті, тощо. В резюме висвітлюються найголовніші аспекти первинної наукової праці – статті, чи навіть книги:

1. зазначення проблеми;
2. її практичне вирішення;
3. отримані результати;

4. рекомендації щодо подальшого застосування.

Запропоновані фрагменти речень є найтипівішими при складанні резюме.

### I. Головна тема чи проблема:

The present paper	describes ...	Ця стаття описує ...
This work	considers ...	Ця робота розглядає ...
This article	discusses ...	В статті обговорюється ...
The present article	analyzes ...	В статті аналізується ...
	deals with ...	розглядається...
	is devoted to the problems	Стаття присвячена проблемам ...
	...	
This work	gives a review of ...	Ця робота пропонує огляд ...

### II. Мета вивчення:

The object of	this study is the investigation of ...	Метою	вивчення є дослідження ...
	investigations is the improvement of treating ...		досліджень є покращення лікування ...
	experiment is the investigation of ...		експеримента є дослідження ...
	this work is the study ...		цієї роботи є вивчення...

### III. Значення основних положень:

It has been indicated (that) ...	Було вказано, що ...
This article has clearly shown (that) ...	Ця стаття ясно продемонструвала, що ...
It has been noted (that) ...	Відзначено, що ...
Much attention is paid to ...	Багато уваги приділяється ...
Great attention is paid to ...	Велика увага приділяється ...
Special attention is paid to ...	Особлива увага приділяється ...
It has been stressed (that) ...	Підкреслено, що ...
It has been determined (that) ...	Встановлено, що ...
It should be noted (that) ...	Необхідно відзначити ...
The different points of view concerning ... are considered.	Представлені різні погляди щодо ...
Thereby ...	Таким чином,
Therefore ...	Тому, отже,
Further ...	Крім того, більш того
Furthermore ...	До того ж , окрім того
Thus ...	Так, отже, таким чином; тому
It was suggested ...	Було запропоновано ...
The current views of ... are considered.	Вивчаються сучасні погляди на ...
Up-to-date information about ... was studied.	Розглянута сучасна інформація щодо ...
Basic principles of ... have been formulated.	Були сформульовані загальні принципи ...

### IV. Применение на практике

New method	is used ...	Новий метод	використовують ...
	is experimented ...		апробують ...
This treatment	is proposed ...	Данне лікування	пропонується...
	is suggested ...		пропонується...

This problem	is investigated ... is discussed ...	Цю проблему	досліджують ... обговорюють ...
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### V. Висновки та результати:

It can be concluded from this study (that) ...	На основі представленого дослідження можна зробити висновок, що ...
On the basis of the results of this study it was proved ...	На основі результатів цього дослідження було доведено ...
On the basis of these observations, an attempt is made to ..	На основі результатів наукових спостережень зроблена спроба ...
The given results showed (that) ...	Отримані результатів виявили, що ...
The achieved data indicated ...	Отримані результати виявили ...
It has been adequately demonstrated that ...	Було продемонстровано, що ...

### Ex. 29. Give a summary of the text “Blood Groups”.

#### OVERVIEW

The blood groups are based on which antigens are carried on the red blood cells. There are four blood groups: A, B, AB, and O. In the ABO blood group type A blood has type A antigens, type B blood has type B antigens, type AB blood has both types of antigens. Type O blood has neither A nor B antigens. Another important blood group is the Rh blood group. People are Rh positive if they have a certain Rh antigen (the D antigen) on the surface of their erythrocytes, and they are Rh negative if they do not have this Rh antigen. Avoiding the mixture of certain kinds of antigens prevents adverse transfusion reaction. Blood transfusion produces good results in patients with acute and chronic anemia as well as in shock, hemophilia, purulent and septic processes, anaerobic infection, hemorrhagic diatheses and others. While disorders of the cardiac function, severe lesion of the kidneys and liver, acute forms of TB and hypertension are stated to be contraindications for blood transfusion.

#### LESSON 32 HEART

#### VOCABULARY

**thoracic** [ˈθɔːrəsɪk] грудний  
**circulation** [ˌsɜːkjʊleɪʃən] кровообіг; циркуляція  
**beat** [bi:t] поштовх, скорочення, систола  
**chamber** [ˈtʃeɪmbə] камера  
**contraction** [kənˈtrækʃən] скорочення  
**ventricle** [ˈventrɪkl] шлуночок  
**pump** [pʌmp] качати, накачувати; насос  
**atrium** (pl. atria) [ˈætrɪəm] передсердя; порожнина  
**separate** [ˈseprɪt] окремих; ізольований; [ˈsepəreɪt] відділяти(ся), розділяти(ся); роз'єднувати; розкладати  
**valve** [vælv] клапан  
**tricuspid** [traɪˈkʌspɪd] тристулковий  
**mitral** [ˈmaɪtrəl] двостулковий, мітральний  
**bicuspid** [baɪˈkʌspɪd] двостулковий, мітральний  
**interventricular** [ˌɪntəˈvenˌtrɪkjʊlə] міжшлуночковий

**superior** [ˌsjuː(ə)ˈpɪərɪəl] такий, що міститься вгорі або спрямований угору, верхній  
**inferior** [ɪnˈfɪərɪəl] нижній  
**vena** [ˈveɪnə] вена  
**vein** [veɪn] вена  
**cava** [ˈkeɪvə] порожнина  
**pulmonary** [ˌpʌlmənɪəri] легеневий  
**via** [ˈviːə] через, крізь; за допомогою чогось  
**aortic** [eɪˈɔːtɪk] аортальний, такий, що стосується аорти  
**aorta** [eɪˈɔːtə] аорта  
**delivery** [dɪˈlɪv(ə)rɪ] постачання; живлення, забезпечення  
**exterior** [ˌeksˈtɪərɪəl] зовнішній  
**epicardium** [ˌepɪˈkɑːdɪəm] епікард, зовнішня оболонка серця  
**myocardium** [maɪˈkɑːdɪəm] міокард, шар стінки серця  
**lining** [ˈlaɪnɪŋ] слизова оболонка  
**endocardium** [ˌendəˈkɑːdɪəm] ендокард,

**septum** [ˈseptəm] перегородка  
**flow** [fləʊ] рух, потік, течія; швидкість;  
текти, протікати; циркулювати (про кров)  
**through** [θruː] через, крізь

внутрішня оболонка серця  
**smooth** [smuːð] гладкий  
**pericardium** [ˌperɪˈkɑːdɪəm] перикард, осердя  
**fibrous** [ˈfaɪbrəs] волокнистий, фіброзний

### WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Prefixes and term-elements:**

**a-, an-** (no, without)

**anti-** (against)

**ab-** (away from)

**Ex. 2. Read and translate the following words:**

**A.** Apnea; anoxia; anabiotic; anabolic; anacidity.

**B.** Antigen, antibiotic, antihistamine; antibody; antitetanic; anti-inflammatory; antiviral; antidiuretic; antithyroid.

**C.** Abnormal; abductor; absorption.

### GRAMMAR: SIMPLE TENSES (Passive Voice) (REVISION)

**Ex. 3. Enter the Past Participle of the following verbs:**

Locate; pump; consist; separate; call; enter; weight; know; flow; feel; bring; take; give.

**Ex. 4. Find and translate sentences with predicates in Simple Tenses, Passive Voice:**

1. The heart is located in the mediastinum within the pericardial sac. 2. The two upper cavities of the heart are known as atria. 3. Each pump consists of a pair of chambers formed by muscles. 4. The sinus node produced electrical impulses. 5. Its lower border rests upon the diaphragm by which it is separated from the liver and stomach. 6. In the lungs the blood is supplied with oxygen. 7. From the left chamber the well-oxygenated blood is pumped into the aorta. 8. The pericardium is a double-layered closed sac.

**Ex. 5. Make up the following sentences interrogative:**

1. The heart is divided into four chambers. 2. The blood is returned to the heart by means of the veins. 3. The two atria are separated from each other by the internal septum. 4. These muscles are attached by thin, strong connective tissue strings (сухожилля). 5. In the lungs carbon dioxide is released and oxygen is picked up. 6. Blood flowing through the aorta is distributed throughout all parts of the body. 7. The heart wall is composed of three layers of tissue.

**Ex. 6. Find in the text “Heart” and translate the sentences containing Passive Voice. Ask your questions to these sentences.**

**Ex. 7. Read the following grammar material:**

### ATTRIBUTIVE CLAUSES

The cardiovascular system includes heart, blood vessels, and blood, <b>which is pumped through the blood vessels by the heart.</b>	Серцево-судинна система складається з серця, кровоносних судин і крові, яка нагнітається серцем по кровоносних судинах.
There are many glands in the stomach <b>that produce pepsin and acid.</b>	У шлунку знаходиться багато залоз, які виробляють пепсин і кислоту.
He was the first <b>who described the kidney texture.</b>	Він був першим, хто описав структуру нирки.

**Ex. 8. Read and translate the following sentences into Ukrainian:**

1. The blood travels through the liver and kidneys, which remove waste products. 2. Blood is pumped from the ventricles of the heart into large elastic arteries that branch repeatedly to form many smaller arteries. 3. The DNA, which was dispersed as chromatin in interphase, condenses in mitosis to form chromosomes. 4. The skeleton is divided into the skull, vertebral column, thoracic cage, upper and lower limbs and the girdles that attach the limbs to the body. 5. Metabolism that occurs in the large mass of muscle tissue in the body produces heat. 6. An inner mucosa is folded into rugae (sing. ruga зморшка, складка, гребінь) that allow the gallbladder to expand. 7. The average pay is rather high, only advanced students who have high index in all the subjects may get grants. 8. The heart is a hollow muscle, which is located in the thoracic cavity.

**READING AND DEVELOPING SPEAKING SKILLS**

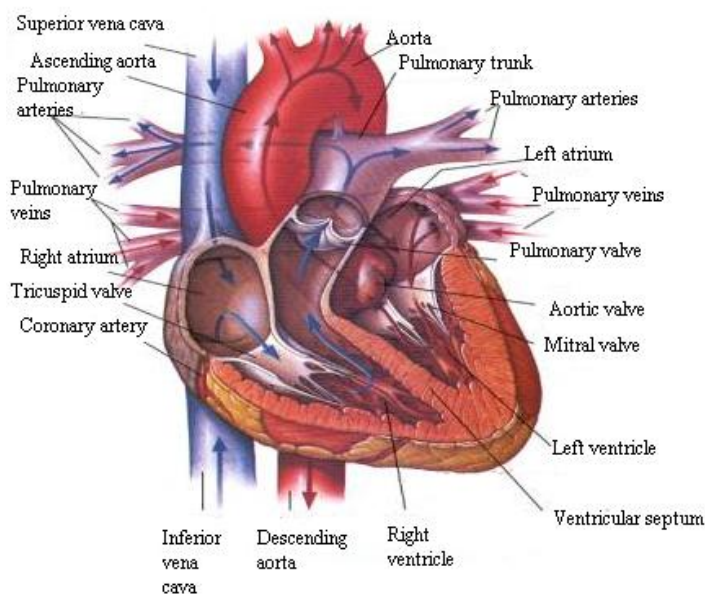
**Ex. 9. Read VOCABULARY and memorize new words.**

**Ex. 10. Insert the missing letters:**

M\_ocardium; pulm\_nary; m\_scle, blo\_d; ch\_mber; ve\_tricle; tr\_cuspid; separ\_te; flo\_; ox\_gen; tis\_ue.

**Ex. 11. Read and translate the following words and word-combinations:**

- chamber** [ˈtʃeɪmbə]: to consist of two chambers; the right atrium and the right ventricle are in the right chamber; the left atrium and the left ventricle are in the left chamber; each of the chambers has two connected parts; within the heart chambers.
- pump** [pʌmp]: the heart is a pump; the heart pumps the blood; to pump arterial blood into the aorta; to pump blood through vessels; to serve as the main pump.
- ventricle** [ˈventrɪkl̩]: at the entrance to the left ventricle; walls of the left ventricle; the right ventricle has thick walls; the role of ventricles; between ventricles; the interventricular septum; this septum is between the left and the right ventricles.
- atrium** [ˈætrɪjəm]: the valves of the atrium; the upper chamber is called an atrium; the walls of the left atrium.
- blood** [blʊd]: the circulation of blood; the flow of blood; to send the blood for analysis; to pump the blood.



*Human Heart*

**Ex. 12. Read and translate the following sentences:**

1. The cardiovascular system consists of the heart and the blood vessels. 2. Arteries carry blood away from the heart to all parts of the body. 3. The heart pumped oxygen very slowly. 4. Superior vena cava brings the blood back to the heart. 5. The atrioventricular valves separate the atria from ventricles. 6. The mitral valve separates the atrium from ventricle. 7. In this case the human heart will contract very fast (rapid). 8. The heart lies in the mediastinum. 9. The aorta carries blood from the left ventricle to the body. 10. The pulmonary trunk carries blood from the right ventricle to the lungs. 11. The right ventricle opens into the pulmonary trunk, and the left ventricle opens into the aorta. 12. The interventricular septum separates the two ventricles. 13. Atrioventricular valves allow blood to flow from the atria into the ventricles. 14. Atrioventricular valves prevent blood from flowing back into the atria. 15. Blood enters the right atrium from the systemic circulation.

**Ex. 13. Read the following words:**

Muscle, chamber, contraction, separate, atrium, tricuspid, mitral, thoracic, valve, ventricle, circulation, beat, bicuspid, lining, septum, interventricular, atrioventricular, superior, inferior, exterior, pulmonary, myocardium, oxygen, aorta, through, blood, fibrous.

**Ex. 14. Read the following text:**

**HEART**

The heart is a hollow muscle located in the thoracic cavity between the lungs. The heart is responsible for the circulation of the blood. It is known that the heart is a pump. But it is an extraordinary pump. It weighs only about a pound but the heart of a healthy 70-kg person pumps about 7200 L of blood each day at rate of 5 L per minute. If the heart loses its ability to pump blood for even a few minutes, the life of the individual is in danger.

The heart actually has two pumps. Each pump consists of a pair of chambers formed by muscles. The contraction of these muscles causes the blood to be pumped. The lower chamber is called a ventricle and the upper chamber is called an atrium. The four chambers of the heart are separated by valves. Between the right atrium and the right ventricle there is a one-way valve, called the tricuspid valve. The valve that separates the left atrium from the left ventricle is called the mitral (or bicuspid) valve. The left ventricle is separated from the right ventricle by the interventricular septum.

Venous blood from body flows through the superior vena cava and inferior one into the right atrium, then through the tricuspid valve into the right ventricle. The right ventricle pumps blood through the pulmonary valve, via the pulmonary arteries, into the lungs. From the lungs, blood enters the left atrium via the pulmonary veins and flows through the mitral valve into the left ventricle. The left ventricle pumps oxygen-enriched blood through the aortic valve into the aorta for delivery to the body's tissues.

The tissue of the heart consists of three layers. The exterior layer is the thin epicardium. The middle layer is the myocardium, the heart muscle itself (from the Greek *myo* for "muscle" and *kardia* for "heart"). The inner lining of the heart is the endocardium, a thin, smooth structure. The pericardium is a fibrous sac that surrounds the heart. In the space between the pericardium and the epicardium there is a small amount of fluid.

The heart rate varies depending on activity at any given moment. The control mechanism for the heart rate involves electrical impulses. One of the four chambers of the heart, the right atrium, contains a group of cells called the sinus node. The sinus node produces electrical impulses that signal the muscle of the heart to contract in the pumping cycle. When a person is at rest, the heart pumps more slowly and at a regular rate, about 60 to 80 beats per minute. When a person runs, climbs stairs, or otherwise exert yourself, the sinus node issues electrical "instructions" to increase the pace of the heart in order to provide the muscles and other tissues with the necessary additional blood and its supply of oxygen. The heart rate may increase up to 200 beats per minute if you exert yourself strenuously. The heart rate may be affected by various factors including tobacco use, caffeine-containing foods, alcohol, and a number of drugs.

In addition, the cardiac disorders may produce heart rate problems.



**Ex. 15. Find in the text and read the English equivalents for:**

Міжшлуночковий; клапан; тристулковий; камера; кровообіг; двостулковий; м'яз; поштовх; внутрішня оболонка серця; кровonosна судина; кисень; фіброзний; порожнистий м'яз; між легеньми; серце – це насос; нагнітати кров по судинах; скорочення серцевого м'яза; усередині серцевих камер; біля входу в лівий шлуночок; складатися з двох камер; клапани передсердя; відомо, що; серце здорової людини; серце втрачає свою здатність нагнітати кров; сформований м'язами; лівий шлуночок нагнітає насичену киснем кров в аорту; фіброзна сумка, яка оточує серце.

**Ex. 16. Translate the text "Heart".**

**Ex. 17. Answer the following questions:**

1. What is the heart? 2. Where is the heart located? 3. What is the heart responsible for? 4. How many beats does the heart make per minute? 5. What is the weight of it? 6. How many chambers does the heart have? 7. What is the lower chamber called? 8. What is the upper chamber called? 9. What are the four chambers of the heart separated by? 10. What is there between the right atrium and the right ventricle? 11. What is there between the left atrium and the left ventricle? 12. What septum separates the left ventricle from the right ventricle? 13. Where does venous blood flow? 14. What does the right ventricle pump blood through? 15. Where does the blood enter from the lungs? 16. What valve does the left ventricle pump oxygen-enriched blood through? 17. What layers does the heart consist of?

**Ex. 18. Insert the missing prepositions (from; per; of; in; to):**

1. During physical exercises the amount \_ blood pumped per minute increases several times. 2. The superior vena cava and inferior vena cava carry blood \_ the body to the right atrium. 3. The pericardium consists \_ fibrous connective tissue. 4. Seven large veins carry blood \_ the heart. 5. The heart makes from 60 to 72 beats \_ minute. 6. \_ some months the rate of your heartbeat will average about 83 beats per minute.

**Ex. 19. Make the following sentences negative. Then give the right information.**

**MODEL:**

The heart consists of *three (four)* chambers.

The heart doesn't consist of **three** chambers. It consists of **four** chambers.

1. The muscular structure of the heart consists of *atrioventricular (fibrous)* bands. 2. The vascular system has three groups of *arteries (vessels)*. 3. The vessels carrying blood to and from the tissues of the body compose the *endocrine (general)* system. 4. The heart contracts to pump blood through the vessels of the *head (body)*. 5. The heart of a healthy person pumps about 7200 L of blood each *month (day)*.

**Ex. 20. Insert the missing words:**

1. The heart is a hollow \_ . 2. It is \_ in the thoracic cavity. 3. The heart is responsible for the \_ of the blood. 4. The heart is an extraordinary \_ . 5. The heart makes 72 \_ per minute. 6. The heart \_ of four chambers. 7. Each chamber is formed by \_ . 8. The \_ chamber is called a ventricle and the upper \_ is called an atrium. 9. The cardiac chambers are \_ by valves. 10. Between the right \_ and the right ventricle there is a \_ valve. 11. The mitral (or bicuspid) valve \_ the left atrium from the left ventricle. 12. The left ventricle is separated from the right ventricle by the \_ septum. 13. The right ventricle pumps \_ into the lungs. 14. From the lungs, blood enters the left \_ and flows into the left \_ . 15. The left ventricle pumps \_ blood into the aorta for delivery to the body's \_ . 16. The heart is surrounded by \_ .

**Ex. 21. A. Try to organize the information of the text in table:**

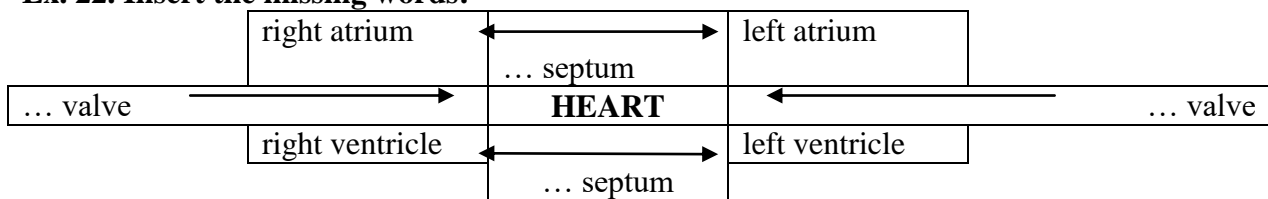
Part of the heart	Definition
atrium	the upper chamber of the heart
ventricle	
tricuspid valve	
mitral (bicuspid) valve	
interventricular septum	
epicardium	
myocardium	
endocardium	

**B. Make up sentences using the data of table and the following model:**

**MODEL:**

*Atrium is the upper chamber. or The upper chamber is called an atrium.*

**Ex. 22. Insert the missing words:**



**Ex. 23. Read the following definitions and choose the proper terms from the box:**

1. Cavities or chambers such as the upper chambers of the heart, which receive blood from veins and pass the blood to the ventricles.
2. One of two lower chambers of the heart.
3. Pertaining to the lungs.
4. Heart valve between the right atrium and the right ventricle.
5. Heart valve that allows oxygenated blood to move into the left ventricle from the left atrium and prevents the reverse flow.
6. Blood vessel that carries blood back to the heart.
7. Blood vessel that carries blood from the heart to other tissues of the body.

Pulmonary; artery; tricuspid valve; atria; ventricle; vein; mitral valve.

**Ex. 24. Do you agree, disagree or partially agree with the statements below?**

**Suggestions for useful phrases:**

When you agree	When you disagree	When you only partially agree
I totally agree	Of course not	To a certain extent
I quite agree	On the contrary	I am not certain
I suppose so	I don't really think so	Yes, in a way
Quite so	Nothing of the kind	I agree to some extent
There's no denying it	Nonsense	
That's true	Far from it	
No doubt	It is out the question	
	I hardly think so	

1. The heart is a hollow vertebra.
2. The heart is located in the upper extremity between the lungs.
3. The heart is responsible for the circulation of the blood.
4. The heart rate is 506 beats per minute.
5. Each chamber is formed by ribs.
6. The lower chamber is called a ventricle.
7. The upper chamber is called a trunk.
8. The four chambers of the heart are separated by valves.
9. The tissue of the heart consists of ten layers.
10. The inner linings of the heart are the endocardium and pericardium.

**Ex. 25. Speak on:**

1. The location and weight of heart;
2. The rate of heartbeat;

3. Heart chambers;
4. Layers of the heart.

**Ex. 26. Translate the following sentences into English:**

Серце знаходиться в грудній порожнині. Частота серцевих скорочень складає приблизно 72 ударів за хвилину.

Серце складається з чотирьох камер. Вони розділені клапанами. Нижня камера називається шлуночком, а верхня – передсердям. Між правим шлуночком і правим передсердям знаходиться тристулковий клапан. Між лівим шлуночком і лівим передсердям розташований двостулковий (мітральний) клапан. Перегородка, яка відокремлює лівий шлуночок від правого шлуночка, називається міжшлуночковою перегородкою.

Серце нагнітає кров по судинах до всіх частин тіла. Тканина серця складається з трьох шарів – епікарду, міокарду і ендокарду.

**Ex. 27. Translate the following interrogative sentences into English:**

1. Що таке серце?
2. Де розташоване серце?
3. З чого складається серце?
4. Що знаходиться між правим передсердям і правим шлуночком?
5. Який клапан знаходиться між лівим передсердям і лівим шлуночком?
6. Яка перегородка відокремлює лівий шлуночок від правого?
7. З яких шарів складається серце?

**Ex. 28. Complete the following dialogues:**

**A.**

- For generations, poets have endowed the human heart with a wide range of emotional abilities. But we (as medical students) must have deep knowledge of anatomy and physiology of human heart. That is why I would like to ask you some questions if you don't mind. What is a heart?
- \_ (muscle)
- Where is the heart located?
- \_ (thoracic cavity)
- What is the weight of the heart?
- \_ (male – ... grams, female – ... grams)
- How many litres of blood does the heart pump each day?
- \_ (7200 L)

**B.**

- I know that heart consists of some chambers. What are they?
- \_ (atrium, ventricle)
- What is between the right atrium and the right ventricle?
- \_ (tricuspid valve)
- What valve separates the left atrium from the left ventricle?
- \_ (bicuspid valve)
- What valve separates the left ventricle from the right ventricle?
- \_ (interventricular valve)

**Ex. 29. Reproduce the similar dialogue.**

**Ex. 30. Read and retell the following text:**

**HEART CHAMBERS**

The right atrium has three major openings through which veins enter the heart from various parts of the body: the superior vena cava, the inferior vena cava, and the coronary sinus. The left atrium has 4 relatively uniform openings that receive the 4 pulmonary veins.

The two atria are separated from each other by the interatrial septum. A slight oval depression on the right side of the septum marks the former location of the opening between the right and left atria in the embryo and the fetus.

The atria open into the ventricles through atrioventricular canals. Each ventricle has one large, superiorly placed outflow route near the midline of the heart. The right ventricle opens into the pulmonary trunk, and the left ventricle opens into the aorta. The two ventricles are separated from each other by the interventricular septum, which is thick toward the apex and very thin toward the atria.

**Ex. 31. Read the following text. Write down unknown medical terms and translate them into Ukrainian. Retell the text:**

### MYOCARDIAL INFARCTION

Myocardial infarction is a synonym for heart attack. Myo means “muscle”, kardia means “heart”, an infarct is an area of tissue that has died because of oxygen starvation.

Myocardial infarction results from a prolonged lack of blood flow to a portion of the cardiac muscle resulting in a lack of oxygen and cellular death. Myocardial infarctions vary with the amount of cardiac muscle affected and the part of the heart that is affected. If blood supply to cardiac muscle is reestablished within 20 minutes, no permanent damage occurs. If the lack of oxygen lasts longer, cell death results. However, within 30 to 60 seconds after blockage of a coronary blood vessel, functional changes are obvious. The electrical properties of the cardiac muscle are altered, and the ability of the cardiac muscle to function properly is lost.

The most common cause of myocardial infarction apparently is the formation of a thrombus that blocks a coronary artery. Coronary arteries narrowed by atherosclerotic lesions provide one of the conditions that increase the chances for myocardial infarctions.

The emergency signs and symptoms of myocardial infarction are the following: intense, prolonged chest pain, often described as a feeling of heavy pressure; pain may extend beyond the chest to the left shoulder and arm, back, and even teeth and jaw; prolonged pain in upper abdomen; shortness of breath, fainting episode; and nausea, vomiting, and intense sweating. Heart attacks are the leading cause of death for both men and women worldwide. Important risk factors are previous cardiovascular disease, older age, tobacco smoking, high blood levels of certain lipids (triglycerides, low-density lipoprotein) and low levels of high density lipoprotein (HDL), diabetes, high blood pressure, obesity, chronic kidney disease, heart failure, excessive alcohol consumption, the abuse of certain drugs, and chronic high stress levels.

### OVERVIEW

The heart is a hollow muscle. It is located in the thoracic cavity between the lungs. The heart is responsible for the circulation of the blood. The heart rate is 72 beats per minute. The heart actually has two pumps. Each pump consists of a pair of chambers formed of muscles. The lower chamber is called a ventricle and the upper chamber is called an atrium. The four chambers of the heart are separated by valves: tricuspid valve and mitral (or bicuspid) valve. The left ventricle is separated from the right ventricle by the interventricular septum. The tissue of the heart consists of three layers: epicardium, endocardium, and myocardium.

### LESSON 33 VESSELS

#### VOCABULARY

**vessel** [ˈvesl] судина  
**capillary** [kəˈpɪlɪəri] капіляр  
**artery** [ˈɑːtəri] артерія  
**vein** [veɪn] вена  
**farther** [ˈfɑːðə] віддалений  
**deliver** [dɪˈlɪvə] розносити, доставляти

**squamous** [ˈskweɪməs] сквамозний, покритий лусочками  
**basement** [ˈbeɪsmənt] базис, основа  
**tunica intima** [ˈtjuːnɪkə ˈɪntɪmə] внутрішня оболонка  
**lamina** [ˈlæmɪnə] тонка пластинка, тонкий шар

**branch off** [*ˈbrɑːnʊ*]/розгалужуватися  
**nourish** [*ˈnʊrɪʃ*]/живити  
**flexible** [*ˈfleksəbəl*]/гнучкий, еластичний  
**circulation** [*ˈsɜːkjʊleɪʃən*]/обіг, циркуляція

**tunica adventitia** [*ˈtjuːnɪkə ˈædvenˈtɪʃɪ*]/  
адвентиціальна оболонка  
**eventually** [*ɪˈvenʃʊəli*]/зрештою, нарешті, з часом

### WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Prefixes and term-elements:**

**bi-** (two)

bipolar *біполярний*

**contra-** (opposite)

contrafissure *контрафіссура, перелом кістки в ділянці, протилежній від місця удару*

**de-** (lack of)

to mobilize *мобілізувати* – to demobilize *демобілізувати*

**Ex. 2. Read and translate the following words:**

**A.** Bilateral; bicuspid; biarticulate; bipositive.

**B.** Contralateral; contraindication; contradistinguish; contraflow.

**C.** Demagnetize; depression; decomposition; decrease; deformity; degeneration; detoxification.

### GRAMMAR:

**Ex. 3. Read the data of the following table:**

#### ADVERBIAL CLAUSES

The right ventricle pumps the blood into the lungs, <b>where the blood gives up the carbon dioxide.</b>	Правий шлуночок нагнітає кров до легенів, де кров звільняється від вуглекислого газу.
<b>As soon as I get this article,</b> I shall read about the functions of pulmonic valve.	Як тільки я дістану цю статтю, я прочитаю про функції клапана легеневого стовбура.
I couldn't come <b>because I fell ill.</b>	Я не зміг прийти, тому що захворів.

**Ex. 4. Read and translate the following sentences into Ukrainian:**

1. My working day begins early because the classes start at half past nine. 2. Pronounce the word as the teacher did it. 3. As I work hard I do sleep well. 4. You must read clearly so that other students may understand you well. 5. Although my grandmother is seventy she is quite well. 6. When a person is at rest, the heart pumps more slowly. 7. Although much research has been done on this disease, the cause remains unknown. 8. When the person is hot, the sweat on the skin lowers the body's temperature. 9. Cancer can be treated before it spreads to other organs or tissues. 10. The doctor is the most familiar profession in the health field, because most people turn to a doctor for advice when they are sick. 11. The vessels become smaller as they extend farther from the heart. 12. When compared to arteries, the walls of the veins are thinner and contain less elastic tissue and fewer smooth-muscle cells.

### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 5. Read VOCABULARY and memorize new words.**

**Ex. 6. Insert the missing letters. Read and translate the following words:**

Mus\_ular; v\_ssel; capi\_lary; s\_pply; c\_rculation; r\_move; flex\_ble; bas\_ment; deli\_er; no\_rish.

**Ex. 7. Read and translate the following words and word-combinations into Ukrainian:**

To flow into; to pump blood; to increase in size; to remove waste products; composition of each layer; smooth muscle; medium-sized veins; elastic fibers; relative thickness; tunica media; tunica intima; gradual; circular; systemic vessels; delicate membrane; several times.

**Ex. 8. Read the following text:**

**BLOOD VESSELS**

The vascular system consists of blood vessels. They carry blood from the heart to all parts of the body. Blood vessels can be classified as capillaries, arteries and veins. Arteries normally are classified as elastic arteries, muscular arteries, and arterioles. The veins are classified as venules, small veins, and medium-sized and large veins.

The vessels become smaller as they extend farther from the heart. The aorta (large elastic artery) delivers blood to the large arteries. They, in turn, branch off several times and eventually blood flows into smaller vessels called arterioles. The arterioles supply the tiny capillaries (minute blood vessels) that nourish tissue. Oxygen is given up from capillaries to the tissues, and carbon dioxide from the tissue is taken up into the capillaries. The arteries have to be strong as well as flexible.

From the capillaries, the blood begins its trip back to the heart by way of the venous system. The veins increase in size closer to the heart. As part of circulation, the blood travels through the liver and kidneys, which remove waste products. The veins, under less pressure, are less muscular and less elastic than arteries.

The entire circulatory system is lined with simple squamous epithelium called endothelium. Capillaries consist only of endothelium. The capillary walls consist of endothelial cells, which rest on a basement. Venules are tubes composed of endothelium resting on a delicate basement membrane. Their structure is very similar to that of capillaries. The venules collect blood from the capillaries and transport it to the small veins, which in turn transport it to the medium-sized veins. Except for capillaries and venules, blood vessels have three layers: the inner tunica intima (consisting of endothelium, basement membrane, and internal elastic lamina), the tunica media (containing circular smooth muscle and elastic fibers), and the outer tunica adventitia (which is connective tissue). The relative thickness and composition of each layer varies with the diameter of the blood vessel and its type. The transition from one artery type or from one vein type to another is gradual, as are structural changes.

Vessels transporting blood through essentially all parts of the body from the left ventricle and back to the right atrium are called the systemic vessels. The pulmonary vessels transport blood from the right ventricle through the lungs and back to the left atrium.

**Ex. 9. Translate the following words and word-combinations into English:**

Сквамозний, покритий лусочками; адвентиціальна оболонка; гнучкий, еластичний; віддалений; капіляр; розгалужуватися; артерія; внутрішня оболонка; жити; тонка пластинка, тонкий шар; доставляти; базис, основа; зрештою, нарешті, з часом; качати.

**Ex. 10. Translate the text “Vessels” into Ukrainian.**

**Ex. 11. Complete the following sentences.**

1. The \_ circulation is composed of vessels that carry blood from the right ventricle to the lungs, pulmonary capillaries, and vessels that lead back to the left atrium. 2. The \_ circulation is composed of vessels that lead from the heart to the body cells and back to the heart. 3. The aorta is the main \_ of the systemic arteries. 4. The walls of vessels consist of three distinct layers, they are \_. 5. The peripheral circulatory system can be divided into sets of \_ vessels. 6. Blood flows from the \_ through arteries and arterioles to the capillaries. 7. Blood returns to the heart from the \_ through veins and venules. 8. Blood then flows through the capillary network and into the \_.

**Ex. 12. Fill in the blanks with the prepositions where necessary.**

1. The blood vessels are organs \_ the cardio-vascular system, and they form a close circuit \_ tubes that carries blood \_ the heart \_ the body cells and back again. 2. The vessels become smaller as they extend farther \_ the heart. 3. Arterioles are branches \_ arteries. 5. Veins carry blood \_ the cells.

6. The veins increase \_ size closer \_ the heart. 7. Venous walls are similar \_ arterial walls, but are thinner and contain less muscle and elastic tissues. 8. Capillaries form connections \_ arterioles and venules. 9. Oxygen is given up \_ capillaries \_ the tissues, and carbon dioxide \_ the tissue is taken up \_ the capillaries. 10. The entire circulatory system is lined \_ simple squamous epithelium. 11. The various tissue circulations are arranged \_ parallel circuits with certain morphological and functional differentiations.

**Ex. 13. Answer the following questions:**

1. What does the vascular system consist of? 2. What are the three main types of blood vessels? 3. What groups are arteries classified into? 4. What blood do vessels carry from some parts of the body toward the heart? 5. What blood do vessels carry from the heart throughout the body? 6. What types of veins can you distinguish? 7. What are the arterioles? 8. How many layers do capillary walls consist of? 11. What layers are the walls of the blood vessels composed of?

**Ex. 14. Read the following terms and try to match them with the Ukrainian equivalents:**

Vasoactive drug, vasoconstriction, vasodilation, vasodepression, vasography, vasospasm, vasorelaxant, angioarchitecture, angiodermatitis, angiodysplasia, angiogenesis, angiographic image, angiology, angiometer, angiopathy.

Розвиток кровоносних судин; розширення судин; захворювання судин; вазоактивні (такі, що впливають на судини) ліки; запалення шкірних судин; вазорелаксант; зниження судинного тону; звуження судин; ангіометр (інструмент для вимірювання діаметра судин); ангіодисплазія (дегенеративні зміни судин); ангіографічне зображення; рентгеноангіографія; ангіоархітектоніка (розділ анатомії, що вивчає порядок розгалуження артерій та формування вен); ангіологія (розділ анатомії, що вивчає кровоносні та лімфатичні судини); спазм судин.

**Ex. 15. Write out key words of the text “Blood Vessels”.**

**Ex. 16. Make up a plan of the text “Blood Vessels”.**

**Ex. 17. Give a summary of the text “Blood Vessels”.**

**Ex. 18. Make up a dialogue on vessels.**

**Ex. 19. Read and retell the following text:**

**GENERAL FEATURES OF BLOOD VESSEL STRUCTURE**

Blood is pumped from the ventricles of the heart into large elastic arteries that branch repeatedly to form many smaller arteries. As they became smaller, the arteries undergo a gradual transition from having walls that contain a large amount of elastic tissue and a smaller amount of smooth muscle to having walls with a smaller amount of elastic tissue and a relatively large amount of smooth muscle.

Blood flows from the arteries into the capillaries. Most of the exchanges that occur between the interstitial spaces and the blood occurs across the walls of the capillaries. Their walls are the thinnest of all blood vessels, blood flows through them slowly, and there is a greater number of them than any other blood vessel type.

From the capillaries blood flows into the venous system. When compared to arteries, the walls of the veins are thinner and contain less elastic tissue and fewer smooth-muscle cells. The veins increase in diameter and decrease in number, and their walls increase in thickness as they project towards the heart.

**Ex. 20. Speak on the vessels, their morphological and functional characteristics.**

**Ex. 21. Translate the following sentences into English:**

1. Артерії – судини, по яких кров тече від серця до органів. 2. Стінки артерії побудовані з трьох оболонок: внутрішньої, середньої (tunica media) та зовнішньої (external tunica). 3. Вени – судини, які несуть кров до серця. 4. Вони містять венозну кров. 5. Стінка вен тонша, ніж у відповідних артеріях та відсутня зовнішня еластична мембрана. 6. Капіляри – найтонші судини, діаметром від 4,5 до 30 мкм. 7. Стінка капіляра утворена лише одним шаром ендотелію.

**Ex. 22. Pronounce and memorize the words to the theme studied:**

**Ascending aorta** [eɪˈtɔːtə] висхідна частина аорти; **descending aorta** низхідна частина аорти; **carotid artery** сонна артерія; **brachiocephalic** плечо-головний; **subclavian artery** підключична артерія.

**Ex. 23. Read the following text. Compose the dialogue on the composition of aorta:**

### AORTA

All arteries of the systemic circulation are derived either directly or indirectly from the aorta, which usually is divided into three general portions: the ascending aorta, the aortic arch, and the descending aorta. The descending aorta is divided further into a thoracic aorta and an abdominal aorta.

At its origin from the left ventricle the aorta is approximately 2.8 cm in diameter. Because it passes superiorly from the heart, this portion is called the ascending aorta. It is approximately 5 cm long and has only two arteries branching from it, the right and left coronary arteries, which supply blood to the cardiac muscle.

The aorta then arches posteriorly and to the left as the aortic arch. Three major branches, which carry blood to the head and upper limbs, originate from the aortic arch: the brachiocephalic artery, the left common carotid artery, and the left subclavian artery.

The next portion of the aorta is the descending aorta. It is the longest portion of the aorta and extends through the thorax on the left side of the mediastinum and through the abdomen to the superior margin of the pelvis. The thoracic aorta is that portion of the descending aorta located in the thorax. It has several branches that supply various structures between the aortic arch and the diaphragm. The abdominal aorta is that portion of the descending aorta between the diaphragm and the point at which the aorta ends by dividing into the two common iliac arteries. The abdominal aorta has several branches that supply the abdominal wall and organs. Its terminal branches, the common iliac arteries, supply blood to the pelvis and the lower limbs.

### OVERVIEW

Blood vessels form a closed system of tubes, which transports the blood and allows exchange of gases, nutrients, and wastes between the blood and the body cells. The tubes include arteries, arterioles, capillaries, venules, and veins. Except for capillaries and venules, blood vessels have three layers: the inner tunica intima (consisting of endothelium, basement membrane, and internal elastic lamina), the tunica media (containing circular smooth muscle and elastic fibers), and the outer tunica adventitia (which is connective tissue). The arteries are adapted to carry relatively high pressure of blood away from the heart. Veins carry deoxygenated blood to the heart. Many veins contain valves that allow blood to move toward the heart, but prevent from moving away from the heart. Capillaries form connections between arterioles and venules.

### LESSON 34 CARDIAC CYCLE

### VOCABULARY

**enter** [ˈentə] ВХОДИТИ, ВСТУПАТИ  
**return** [rɪˈtʃuːn] ВЕРТАТИСЯ, ЙТИ НАЗАД

**systemic circulation** [sɪˈstɪmɪk ˈsɪkjʊleɪʃən] ВЕЛИКЕ КОЛО КРОВООБИГУ



**receive** [rɪˈsiːv] отримувати; знаходити; приймати, акумулювати, вміщувати, збирати  
**pulmonic valve** [pʌlˈmɒnɪkˈvælv] клапан легеневого стовбура  
**carbon dioxide** [kɑːbɒn daɪˈɒksaɪd] вуглекислий газ  
**absorb** [əbˈsɔːb] всмоктувати, вбирати; абсорбувати  
**artery** [ˈɑːtəri] артерія  
**repetitive** [rɪˈpetɪtɪv] той, що повторюється  
**atrial** [eɪˈtriəl] передсердний, такий, що стосується передсердя  
**ventricular** [venˈtrɪkjʊlə] шлуночковий, такий, що має відношення до шлуночку, венікулярний  
**systole** [sɪˈstəʊl] систола  
**pulmonary circulation** [pʌlˈmɒnɪkəriˈsjuːlɪˈseɪʃn] мале коло кровообігу

**diastole** [daɪˈɒstəʊl] діастола  
**dilate** [daɪˈleɪt] розширювати(ся)  
**simultaneously** [sɪm(ə)lˈteɪnjəsli] разом, одночасно, спільно  
**duration** [dʒuː(r)ˈreɪʃ(ə)n] тривалість, довгість  
**cardiac cycle** [kɑːdɪkˈsaɪkl] серцевий цикл  
**vary** [ˈvɛəri] відрізнятися, змінювати(ся)  
**newborn infant** [njuːˈbɔːn ˈɪnfənt] новонароджений, немовля  
**capability** [ˌkeɪpəˈbɪləti] здатність, можливість, потенціал  
**integrity** [ɪnˈtegrəti] цілісність; повнота  
**conducting system** [kɒnˈdʌktɪŋˈsɪstəm] провідна система  
**abnormality** [ˌæbˈnɔːlɪti] відхилення, аномалія, патологія  
**alter** [ˈɔːltə] змінювати(ся); видозмінювати, вносить зміни  
**compromise** [kəmˈprɒmaɪz] піддавати ризику, небезпеці

## WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Prefixes and term-elements:**

**dia-** (through)

diapedesis *діapedез*, проникнення клітинних елементів крові через інтактні судинні стінки назовні

**dis-** (**dys-**) (negative meaning)

to appear з'являтися – to disappear *зникати*

**extra-** (beyond)

extra-articular *позасуглобовий*

**Ex. 2. Read and translate the following words:**

**A.** Diameter; dialysis; diaphragm.

**B.** Dislike; discharging; disable; disagree; dismiss; discard; disintegrate; disruption; displace.

**C.** Extracellular; extracranial; extraordinary; extrabronchial; extracorporeal.

**Ex. 3. Familiarize yourself with the following material:**

**Prefixes and term-elements:**

**hyper-** (above; excessiveness)

hyperabsorption *гіперабсорбція*

**hypo-** (under; deficiency)

hypoactive *гіпоактивний*

**il-** (**im-**, **in-**, **ir-**) (lack of)

attentive *уважний* – inattentive *неуважний*

correct *правильний* – incorrect *неправильний*

**Ex. 4. Read and translate the following words:**

**A.** Hyperplasia; hypertrophy; hyperglycemia; hypertension; hyperactive; hypersecretion; hyperthyroidism; hypervitaminosis.

**B.** Hypodermic; hypoglycemia; hypothalamus; hyposecretion; hypothyroidism; hypoglycemic.

C. Inorganic; indefinite; illegal; ineffective; inattentive; incorrect; indirect; irregular; impossible; inelasticity.

### GRAMMAR: SUBORDINATE CLAUSES

**Ex. 5. Read and translate the following sentences into Ukrainian, paying attention to subordinate clauses:**

1. As plaque accumulates, blood circulation decreases. 2. Other research suggests that carbon monoxide also may have a direct, degenerative effect on the heart muscle itself, on the blood vessels, and on the clotting of the blood. 3. Because the process of atherosclerosis is accelerated with both high blood pressure and smoking, probably as a result of the harmful effects of nicotine and carbon monoxide on blood vessels, a smoker who has a high blood pressure is at much greater risk of atherosclerosis. 4. The lymph capillaries are delicate tubes whose wall consists of a single layer of endothelial cells. 5. One of the plasma proteins of particular interest is fibrinogen, which is essential in the clotting of the blood. 6. Blood platelets disintegrate when the blood is exposed to the air and function in the clotting of blood.

### READING AND DEVELOPING SPEAKING SKILLS

**Ex. 6. Read and memorize the words of VOCABULARY.**

**Ex. 7. Insert the missing letters:**

Press\_re; ventr\_cular; di\_stole; t\_ssue; cond\_cting; ret\_rn; c\_cle; rec\_ive; d\_late; \_bsorb; s\_stole.

**Ex. 8. Translate the following words and word-combinations into Ukrainian:**

Carbon dioxide; pressure; atrium; ventricle; abnormality; integrity; return; newborn infant; tissue; move; mitral valve; vary; capability; receive; compromise; duration; simultaneously; dilate; conducting system; alter.

**Ex. 9. Read and translate the following words and word-combinations:**

- tissue** [*tʃu: / tʃju:*]: soft tissue; the tissue has an outer layer; the tissue has an inner layer; a layer composed of tissue; fibrous tissue;
- pressure** [*preʃə:*]: high pressure, low pressure; low-pressure pump; blood pressure; to alter the pressure;
- pulmonic valve** [*pʌlmɒnɪk'vɔlv:*]: outer layer of pulmonic valve; the pulmonic valve consists of; through the pulmonic valve into the lungs; to pump oxygen-poor blood through the pulmonic valve;
- capability** [*kə'pəbəlɪ'ti:*]: to depend on the capability; capability of cardiac muscle; alter the capability; the capability of conducting system;
- atrial** [*ə'trɪəl:*]: the atrial myocardium; contraction of the atrial myocardium; the abnormality of the atrial myocardium; atrial diastole; to compromise the atrial myocardium.
- pulmonary** [*pʌlmənərɪ:*]: pulmonary system; to be included in the pulmonary system; the pulmonary circulation

**Ex. 10. Read the following words:**

Blood; delivery; low-pressure; move; stronger; oxygen-poor; pulmonic; carbon dioxide; oxygen; oxygen-enriched; receive; aorta; subdivide; tissue; include; repetitive; atrial; systole; diastole; similarly; thus; simultaneously; human; capability; muscle; functional; alter; effectiveness.

**Ex. 11. Read the following text:**

### THE CARDIAC CYCLE

The blood entering the right side of the heart returns from the tissues and has been delivered by the veins. The receiving chamber is the right atrium. This atrium also is a low-pressure pump, and it moves the blood into the right ventricle through the tricuspid valve.

The right ventricle has thicker, stronger walls than the right atrium. The right ventricle pumps the oxygen-poor blood through the pulmonic valve into the lungs, where the blood gives up the carbon dioxide, which it has carried from the tissues. At the same time, the blood is absorbing oxygen. The pumping action moves the blood from the lungs to the receiving chamber on the other side of the heart, the left atrium, which pumps the blood into the left ventricle through the mitral valve. The left ventricle sends the oxygen-enriched blood into the aorta, the principal artery that subdivides and delivers the blood to the body's tissues, including the brain, internal organs, and extremities.

The cardiac cycle is repetitive contraction and relaxation of the heart chambers. Contraction of the atrial myocardium is called atrial systole, and relaxation of the atrial myocardium is called atrial diastole. Similarly, ventricular systole is contraction of the ventricular myocardium, and ventricular diastole is relaxation of the ventricular myocardium. Thus the term systole means "to contract", and diastole means "to dilate". The right and left chambers contract and relax simultaneously.

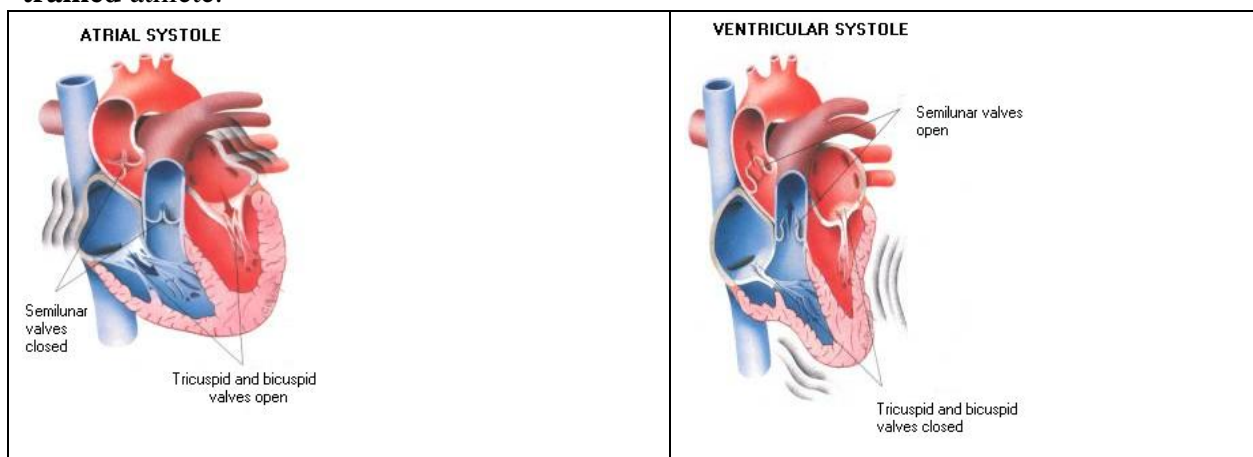
The duration of the cardiac cycle varies among humans and also varies during an individual's lifetime. It may be as short as 0.25 to 0.3 second in a newborn infant or as long as 1 or more seconds in a well-trained athlete. The normal cardiac cycle (0.7 to 0.8 second) depends on the capability of cardiac muscle to contract and on the functional integrity of the conducting system. Abnormalities of cardiac muscle, the valves, or conducting system of the heart may alter the cardiac cycle and thus compromise the pumping effectiveness of the heart.

**Ex. 12. Translate the following words and word-combinations into English:**

Повертатися, йти назад; передсердний, такий, що має відношення до передсердя; шлуночковий, такий, що має відношення до шлуночку; тиск; отримувати, акумулювати; клапан легеневого стовбура; здатність, можливість; тривалість; діастола; патологія; розширювати(ся); систола; нагнітати кров, погано збагачену киснем; віддавати вуглекислий газ; направляти збагачену киснем кров; протягом життя людини; залежати від функціональної цілісності провідної системи.

**Ex. 13. Translate the following sentences paying attention to words in bold type:**

1. The right ventricle pumps the **oxygen-poor** blood through the pulmonic valve into the lungs, where the blood gives up the carbon dioxide, which it has carried from the tissues. 2. The left ventricle sends the **oxygen-enriched** blood into the aorta. 3. The duration of the cardiac cycle varies among humans and also varies during an **individual's lifetime**. 4. The duration of the cardiac cycle may be as short as 0.25 to 0.3 second in a newborn infant or as long as 1 or more seconds in a **well-trained** athlete.



*Cardiac Systole*

**Ex. 14. Translate the text "Cardiac Cycle" into Ukrainian.**

**Ex. 15. Answer the following questions:**

1. What is the blood entering the right side of the heart returning from?
2. What is the right atrium?
3. What walls does the right ventricle have?
4. What does the blood give up in lungs?
5. Where does the pumping action of the heart move the blood from the lungs?
6. Where does the left ventricle send the oxygen-enriched blood?
7. What is the cardiac cycle?
8. What is the atrial systole?
9. What is the atrial diastole?
10. What is the ventricular systole?
11. What is the ventricular diastole?
12. What do the terms "systole" and "diastole" mean?
13. What is the duration of the cardiac cycle?
14. What does the normal cardiac cycle depend on?

**Ex. 16.**

**A. Try to organize the information of the text in table:**

Term	Definition
aorta	
cardiac cycle	
systole	
diastole	
atrial systole	
atrial diastole	
ventricular systole	
ventricular diastole	

**B. Make up sentences using the data of table and following model:**

**MODEL:**

Aorta is the principal artery of the body that delivers the blood to the body's tissues.

The principal artery of the body that delivers the blood to the body's tissues is called the aorta.

**Ex. 17. What is it:**

1. Complete round of cardiac systole and diastole.
2. Relaxation of the heart chambers during which they fill with blood.
3. Contraction of the heart chambers during which blood leaves the chambers.
4. Largest artery in the body; it carries blood from the heart's left ventricle and distributes it throughout the body.

**Ex. 18. Do you agree, disagree or partially agree with the statements below?**

1. The right atrium moves the blood into the right ventricle through the tricuspid valve.
2. The duration of the cardiac cycle doesn't vary among humans.
3. The pumping action moves the blood from the lungs to the left atrium.
4. The left ventricle pumps the blood into the left ventricle through the mitral valve.
5. The cardiac cycle is the contraction and relaxation of the muscles of the abdominal wall.
6. The term systole means to contract, and diastole means to separate.

**Ex. 19. Translate into English the following sentences:**

Праве передсердя переміщує кров у правий шлуночок через двостулковий клапан. Правий шлуночок через клапан легеневого стовбура нагнітає кров до легень. Тут кров насичується киснем. Від легенів кров тече до лівого передсердя, яке нагнітає кров у лівий шлуночок. З лівого шлуночку кров потрапляє в аорту, яка переносить кров до мозку, внутрішніх органів, кінцівок. Скорочення міокарду передсердя називається систолою передсердя, розширення міокарду передсердя – це діастола передсердя. Систола шлуночків – це скорочення міокарду шлуночку, а діастола – розширення міокарду шлуночків.

У людей тривалість серцевого циклу різна. Вона може тривати від 0,3 секунди до 1 секунди або довше. Проте зазвичай тривалість серцевого циклу складає 0,7 або 0,8 секунд. Патологія серцевого м'яза або клапана може призвести до порушення серцевого циклу.

**Ex. 20. Complete the following dialogues:**

**A.**

- Where is the blood entering the right side of the heart returning from?
- \_ (tissues).
- What has the blood entering the right side of the heart been delivered by?
- \_ (veins).
- What is the right atrium?
- \_ (the receiving chamber).
- What atrium is the low-pressure pump?
- \_ (the right atrium).
- What valve does the right atrium move the blood into the right ventricle through?
- \_ (the tricuspid valve).

**B.**

- \_?
- The pumping action moves the blood from the lungs to the left atrium.
- \_?
- The left atrium pumps the blood into the left ventricle.
- \_?
- The left atrium pumps the blood into the left ventricle through the mitral valve.
- \_?
- The left ventricle sends the oxygen-enriched blood into the aorta.
- \_?
- Aorta is the principal artery of the human body that subdivides and delivers the blood to the body's tissues, including the brain, organs, and extremities.

**Ex. 21. Compose the similar dialogues.**

**Ex. 22. Memorize the following words and word combinations:**

**Sharp pain** гострий біль; **rheumatism** [ˈruːmətɪzəm] ревматизм; **stitch pain** колющий біль; **to ascend staircase** підійматися сходами; **to tire** стомлюватися; **disturbance** порушення.

**Ex. 23. Read and translate the following dialogue:**

**AT THE CARDIOLOGIST'S**

**Cardiologist:** What do you complain of?

**Patient:** My heart often troubles me.

**C.:** Is your pain cutting or dull?

**P.:** I have a stitch pain in my heart.

**C.:** Do you have any difficulty in breathing?

**P.:** Yes, I do. I have breathlessness when ascending a staircase or walking quickly.

**C.:** What else troubles you?

**P.:** My temperature is not constant. It is rising by the evening. I often have a general malaise and get tired after some physical exertion.

**C.:** When did you notice these disturbances? When have the pains in your heart become constant?

**P.:** These disturbances appeared some years ago. My pains have become constant this year.

**C.:** What diseases did you suffer from in the past?

**P.:** In my childhood I often had quinsy but then my tonsils were removed. During some years ago I am ill with rheumatism.

**C.:** Do you have a pain in your joints?

**P.:** Yes, I do. My hands and legs become periodically swollen and painful.

**C.:** Were you treated at a hospital?

**P.:** Yes, I was. Last year I was hospitalized and treated at the hospital. My diagnosis was rheumatism.

**C.:** Did you have any improvement after the treatment in the hospital?

**P.:** Yes, I did. Last summer I was treated at the sanatorium too and I felt well.

**C.:** Now strip to the waist, please. I'll examine you.

(After examination)

**C.:** You are seriously ill. Your main disease is rheumatism and that's why you must periodically be treated at a hospital. But at present you have to make electrocardiogram and to come to me. I'll administer you the treatment for your heart. I advise you to avoid intensive physical exertion. You should not be tired. Your diet has to be nourishing and containing many vitamins but it is limit in salt. Walk in the fresh air as much as possible.

## Ex. 24. Reproduce the similar dialogue.

### OVERVIEW

The blood entering the right side of the heart returns from the tissues and has been delivered by the veins. The receiving chamber is the right atrium. It pumps the oxygen-poor blood through the pulmonic valve into the lungs, where the blood gives up the carbon dioxide and is absorbing oxygen. The pumping action moves the blood from the lungs to the left atrium, which pumps the blood into the left ventricle. The left ventricle sends the oxygen-enriched blood into the aorta, which delivers the blood to the body's tissues, including the brain, organs, and extremities. The cardiac cycle is repetitive contraction and relaxation of the heart chambers. The normal cardiac cycle (0.7 to 0.8 second) depends on the capability of cardiac muscle to contract and on the functional integrity of the conducting system.

### LESSON 35 DIGESTIVE SYSTEM

#### VOCABULARY

**stomach** [*stʌŋk*] шлунок  
**pancreas** [*ˈpæŋkrɪs*] підшлункова залоза  
**gallbladder** [*ˈgɔːlˌblædər*] жовчний міхур  
**propel** [*prəˈpel*] проштовхувати; рухати  
**digestive** [*dɪˈdʒestɪv*] травний, такий, що стосується травлення  
**digestion** [*dɪˈdʒestʃən*] травлення, травлення їжі; засвоєння їжі  
**chew** [*tʃuː*] жувати, пережовувати  
**saliva** [*ˈsælvə*] слина  
**pharynx** [*ˈfærɪŋks*] глотка  
**esophagus** [*ɪˈsɒfəɡəs*] стравохід  
**accessory** [*əˈkɛsɔːrɪ*] допоміжний, додатковий  
**mucous** [*ˈmjuːkəs*] слизовий  
**mucus** [*ˈmjuːkəs*] слиз  
**dilate** [*daɪˈleɪt*] розширювати  
**reduce** [*rɪˈdjuːs*] перетворювати; (тут) зменшувати  
**semi-liquid** [*ˈsemɪˈlɪkwɪd*] напіврідкий  
**release** [*rɪˈliːz*] виділяти  
**duodenum** [*ˈdjuːouˈdʒnəm*] дванадцятипала кишка

**jejunum** [*ˈdʒiːjuːnəm*] порожня кишка  
**ileum** [*ɪˈliːəm*] клубова кишка  
**exist** [*ɪɡˈzɪst*] існувати, бути  
**except** [*ɪkˈsept*] виключаючи, окрім, за винятком  
**enzyme** [*ˈenzɑːm*] фермент  
**caecum** (сесум) [*ˈsɛːkəm*] сліпа кишка  
**colon** [*ˈkɒlən*] ободова кишка, товста кишка  
**rectum** [*ˈrektəm*] пряма кишка  
**indigestive** [*ɪnˈdɪdʒestɪv*] неперетравлений  
**feces** [*ˈfiːsɪz*] кал, фекалії, екскременти  
**vermiform** [*ˈvɜːmɪfɔːm*] червоподібний  
**appendix** [*əˈpendɪks*] відросток, апендикс  
**ingest** [*ɪnˈdʒest*] поглинати, проковтнути, заковтнути  
**masticate** [*ˈmæstɪkeɪt*] жувати, подрібнювати  
**digest** [*dɪˈdʒest*] перетравлювати  
**undigested** [*ʌnˈdɪdʒestɪd*] неперетравлений  
**matter** [*ˈmætər*] річ, субстанція  
**propulsion** [*prəˈpʌʃ(ə)n*] просування вперед, рух вперед; поступальний рух

**RULES OF READING**  
**MUTE LETTERS (“НІМІ” ЛІТЕРИ)**

Letters	Notes	Examples
b	у сполученнях <i>bt, mb</i>	debt [ <i>dɛt</i> ] comb [ <i>kɔm</i> ] climb [ <i>klaɪm</i> ]
c	у сполученні <i>sc</i> перед літерами <i>t, i, y</i>	science [ <i>saɪəns</i> ]
e	в кінці слова, коли вона не єдина голосна	late [ <i>leɪt</i> ]

**Ex. 1. Read the following words:**

Comb; climb; limb; debt; doubt; scene; visceral; susceptibility; abscess; late; rule; true; nurse; course.

**WORD-BUILDING**

**Ex. 2. Familiarize yourself with the following material:**

**Suffixes of Adjectives:**

**-ar**

muscular – м'язовий

**-ic** (pertaining to)

energy енергія – energetic енергійний

grammar грамати́ка – grammatic грамати́чний

**-ive**

to attract приваблювати, вабити – attractive приваблювний

to act діяти – active дієвий, активний

**Ex. 3. Read and translate the following words:**

**A.** Orbicular; mandibular; alveolar; particular; cellular; similar; polar; molecular; regular; reticular; cardiovascular.

**B.** Economic; chronic; plastic; scientific; public; peptic; embryonic; electronic; allergic; narcotic; academic; therapeutic; pathologic.

**C.** Connective; constructive; effective; protective; contractive; active; native; sensitive; adhesive; objective; respective.

**GRAMMAR:**

**Ex. 4. Read the following grammar material:**

**OBJECT CLAUSES**

We know (that) <b>arteries take blood to the tissues.</b>	Ми знаємо, що артерії поставляють кров до тканин.
He cannot understand <b>why the heart is extraordinary pump.</b>	Він не може зрозуміти, чому серце – це незвичайний насос.
Will you show me <b>where the heart is located?</b>	Ви мені покажете, де розташовано серце

**Ex. 5. Read and translate the following sentences into Ukrainian:**

1. I am sure that the two ventricles are separated from each other by the interventricular septum. 2. He says the pulmonary trunk carries blood to the lungs. 3. He knows the myocardium is composed of cardiac muscle cells. 4. They understand that the heart valves are formed by a fold of the endocardium. 5. The medical students study that the right atrium contains a group of cells called the sinus node. 6. This person knows the pericardium is a fibrous sac. 7. They say the thin-walled atria form the superior and posterior portions of the heart.

**Ex. 6. Familiarize yourself with the data of the following table:**

## INDEFINITE PRONOUNS AND ADVERBS

Pronoun	+thing	+body	+one	+where
<b>some</b>	something (щось, дещо)	somebody (хтось, хто-небудь)	someone (хто-небудь)	somewhere (де-небудь, куди-небудь)
<b>any</b>	anything (щось, що завгодно)	anybody (будь-хто, хто завгодно)	anyone (хто-небудь, хтось)	anywhere (де-небудь, куди-небудь, будь-де)
<b>no</b>	nothing (ніщо, нічого)	nobody (ніхто, нікого)	no one (ніхто, нікого)	nowhere (ніде, нікуди)
<b>every</b>	everything (все)	everybody (всі, кожний)	everyone (всі, кожний)	everywhere (всюди, скрізь)

### Ex. 7. Translate the following sentences into Ukrainian:

1. These students had some lectures last week. 2. Do you have any drug habits? 3. The doctor gave me a prescription for some antibiotics and told me to come back in three weeks. 4. The patient's voice, facial expression and attitude can give important clues to discover not only something about the disease but also about the patient. 5. Strains are often caused by lifting something too heavy. 6. Thus saying that someone has an "Achilles heel" means he has a weak spot that can be attacked. 7. Are you allergic to any drugs? 8. Is anyone in your family serious ill? 9. He is ready to go anywhere. 10. Do you see anything in the ward? 11. In fact, the NHS provides free medical care for everyone in Britain from very young to the very old. 12. What does a local physician write down in every patient's card? 13. Everything about the patient is written down in the card. 14. As a baby, Achilles was dipped into magic water, which made him invulnerable to harm everywhere the water touched his skin.

## READING AND DEVELOPING SPEAKING SKILLS

### Ex. 8. Read VOCABULARY and memorize new words.

#### Ex. 9. Insert the missing letters:

St\_mach; esop\_agus; inte\_tine; liv\_r; pancre\_s; gallb\_adder; pha\_ynx; mu\_us; du\_denum; jejun\_m; il\_um; cae\_um; col\_n; re\_tum.

#### Ex. 10. Read and translate the following words and word-combinations:

Propulsion; except; masticate; undigested matter; digest; digestion; ingest; indigestive; propel; chew; reduce; dilate; release.

#### Ex. 11. Translate the following sentences and word-combinations into English:

- mouth.** Відкрийте рота. Тверде та м'яке піднебіння знаходиться у роті.
- stomach.** Нижня частина шлунка. Шлунок – внутрішній орган. Шлунок складається з чотирьох оболонок.
- tongue.** Язик – орган смаку. У хворого обкладений язик. Дозвольте оглянути язик.
- intestine.** Товстий кишечник поділяється на три частини. Тонка та товста кишки знаходяться у черевній порожнині.
- through.** Проходити по судинам. Кров проходить по артеріях. Їжа проходить крізь глотку до стравоходу.

#### Ex. 12. Read the following words:



Through; canal; synonym; mouth; tongue; palate; chew; saliva; esophagus; major; pharynx; abdomen; liquid; segment; anus; useful; substance; appendix; pieces; dilate; duodenum; jejunum; ileum; caecum; rectum.

**Ex. 13. Read the following text:**

### **DIGESTIVE SYSTEM**

The digestive system consists of many parts. They are the oral cavity, esophagus, stomach, small and large intestines, the liver, the pancreas, gallbladder and others.

The food we eat is propelled through the digestive tract by muscular contractions. The digestive tract is also called the alimentary tract or alimentary canal. The term gastrointestinal tract technically only refers to the stomach and intestines but is often used as a synonym of the digestive tract.

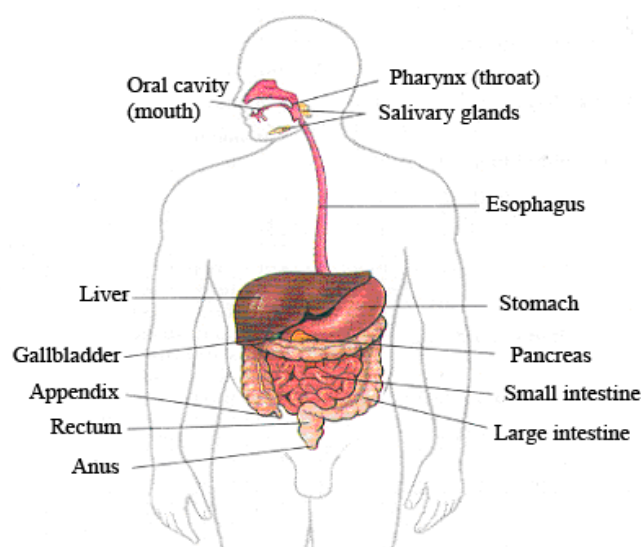
The first division of the digestive tract is the mouth, or oral cavity. Important structures of the oral cavity are the teeth, the tongue, the soft and hard palates, and salivary glands. Digestion begins when the person chews the food. The food is broken into smaller pieces by the teeth and is mixed with saliva secreted by the salivary glands.

From the mouth food passes through the pharynx to the esophagus. The major accessory structures of the pharynx and the esophagus are mucous glands.

The esophagus opens into the stomach. It rests in the upper abdomen. It is a dilated portion of the digestive tract. The stomach receives food from esophagus, and its mixing action reduces the food to a semi-liquid mixture. The stomach walls contain many glands from which acid and enzymes are released into the stomach and mixed with ingested food.

The stomach opens into the small intestine. The small intestine is a thin-walled tube approximately 6.5 meters long. It is located in the lower and central portions of the abdominal and pelvic cavities. It is composed of the duodenum, jejunum, and ileum. The first segment of the small intestine is the duodenum. The major accessory structures in this segment of the digestive tract are the liver, the gallbladder, and the pancreas. The next segment of the small intestine is the jejunum. Small glands exist along its length, and it is the major site of absorption. The last segment of the small intestine is the ileum, which is similar to the jejunum except that fewer digestive enzymes and more mucus are secreted and less absorption occurs in the ileum.

The last section of the digestive tract is the large intestine. It is divided into cecum, colon, and rectum. Its major accessory glands secrete mucus. It absorbs water and salts and concentrates indigested food into feces. The first segment is the cecum, with the attached vermiform appendix. The cecum is followed by colon and rectum. The rectum joints the anal canal, which ends at the anus.



*Digestive System*

The functions of the digestive system are to ingest food, masticate the food, propel the food through the digestive tract, add secretions to the food and digest the food; and absorb water, electrolytes, and other nutrients from the digested food. Once these useful substances are absorbed, they are transported through the circulatory system to cells where they are used. Undigested matter is moved out of the digestive tract and excreted through the anus. The processes of propulsion, secretion, and absorption are regulated by nervous and hormonal mechanisms.

**Ex. 14. Translate the following words and word-combinations into English:**

Глотка; стравохід; шлунок; підшлункова залоза; товстий кишечник; жовчний міхур; сліпа кишка; пряма кишка; товста кишка; порожня кишка; клубова кишка; дванадцятипала кишка; зуби; язик; тверде піднебіння; слинні залози; знаходиться у нижній частині черевної порожнини; напіврідка суміш; тонкостінна трубка; проходити уздовж; переноситись по кровоносній системі.

**Ex. 15. Translate the text “Digestive System” into Ukrainian.**

**Ex. 16. Describe the structure of the alimentary canal and related system using the data of the following table:**

Alimentary Canal	Related System
mouth	teeth
pharynx	tongue
esophagus	salivary glands
stomach	hard and soft palates
small intestine (duodenum, jejunum, ileum)	liver
large intestine (caecum, colon, rectum)	gallbladder
	pancreas

**Ex. 17. Answer the following questions:**

1. What does the digestive system consist of? 2. What is the food propelled through the digestive tract by? 3. What is the first division of the digestive tract? 4. What are there in the oral cavity? 5. Where does the food pass from the mouth? 6. What is the esophagus? 7. What is the function of the stomach? 8. What parts is the small intestine composed of? 9. What are the major accessory structures in the first segment of the small intestine? 10. What is the functional difference between ileum and jejunum? 11. What is large intestine divided into? 12. What are the major functions of the digestive system?

**Ex. 18. Read the following text and compose 3-4 short dialogues:**

**PORTIONS OF THE DIGESTIVE SYSTEM**

**PHARYNX**

The pharynx consists of three parts: the nasopharynx, the oropharynx, and laryngopharynx. Normally, only the oropharynx and laryngopharynx transmit food. The oropharynx communicates with the nasopharynx superiorly, the larynx and laryngopharynx inferiorly, and mouth anteriorly. The laryngopharynx extends from the oropharynx to the esophagus and is posterior to the larynx. The posterior walls of the oropharynx and laryngopharynx consist of three muscles, the superior, middle, and inferior pharyngeal constrictions, which are arranged like three stacked flower pots, one inside the other. The oropharynx and the laryngopharynx are lined with moist, stratified squamous epithelium, and the nasopharynx is lined with ciliated pseudostratified epithelium.

**ESOPHAGUS**

The esophagus is that portion of the digestive tube that extends between the pharynx and the stomach. It is approximately 20-25 cm long and lies in the mediastinum. The esophagus transports food from the pharynx to the stomach. It has thick walls consisting of the four tunics common to the

digestive tract: mucosa, submucosa, muscularis, and adventitia.

### **SMALL INTESTINE**

The small intestine consists of three portions: the duodenum, the jejunum, and the ileum. The entire small intestine is approximately 6.5 m long; the duodenum is approximately 25 cm long (the term duodenum means 12, suggesting that is 12 inches long); the jejunum, constituting approximately two fifths of the total length of the small intestine, is approximately 2.5 m long, and the ileum, constituting three fifths of the small intestine, is approximately 3.5 m long. Two major glands, the liver and pancreas, are associated with the duodenum.

### **GALLBLADDER**

The gallbladder is a saclike structure on the inferior surface of the liver that is approximately 8 cm long and 4 cm wide. Three layers form the gallbladder wall: an inner mucosa folded into rugae that allow the gallbladder to expand; a muscularis of smooth muscle that allows the gallbladder to contract; and outer covering of connective tissue. The gallbladder is connected to the common bile duct by the cystic duct.

### **PANCREAS**

The pancreas is a complex organ composed of both endocrine and exocrine tissues that perform several functions. The pancreas consists of a head, a body, and a tail, which extends to the spleen.

The endocrine portion of the pancreas consists of pancreatic islets (islets of Langerhans). The islet cells produce insulin and glucagons, which are very important in controlling blood levels of nutrients such as glucose and amino acids, and somatostatin, which regulates insulin secretion.

The exocrine portion of the pancreas consists of acini (grapes), which produce digestive enzymes. The acini connect to a duct system that forms the pancreatic duct, which empties into the duodenum.

### **LARGE INTESTINE**

The large intestine consists of the cecum, colon, rectum, and anal canal. The cecum is the proximal end of the large intestine and is the portion where the large and small intestines meet. The colon consists of four portions. The mucosal lining of the large intestine consists of simple columnar epithelium. It has numerous straight tubular glands. The rectum is a straight, muscular tube. It begins at the termination of the sigmoid colon and ends at the anal canal. The last 2 to 3 cm of the digestive tract is the anal canal. It begins at the inferior end of the rectum and ends at the anus. The smooth muscle layer of the anal canal forms the internal anal sphincter and external anal sphincter.

**Ex. 19. Retell the text “Portions of the digestive system”. The following expressions may be helpful:**

... is a part of the digestive system.

It consists of ... .

... is located ... .

Its function is to ... .

**Ex. 20. Insert the missing words given below:**

### **THE ALIMENTARY TRACT**

The alimentary tract is a musculomembraneous canal about 8.5 meters in length. It \_ from the oral cavity to the anus. It consists of the mouth, pharynx, \_, stomach, small intestine, and large intestine. The liver with gallbladder and \_ are the large glands of the alimentary tract.

The first division of the alimentary tract is formed by the mouth. Important structures of the mouth are the \_ and the tongue, which is the organ of taste. The soft and hard \_ and the salivary glands are also in the oral cavity.

From the mouth food passes through the \_ to the esophagus and then to the stomach.

The stomach is a dilated portion of the alimentary canal. It is in the upper part of the abdomen under the diaphragm. It measures about 21-25 cm in length.

The small intestine is a thin-walled muscular tube about 6.5 meters long. It is located in the lower and central parts of the \_ and pelvic cavities. The small intestine is composed of the duodenum, jejunum, and ileum. The large intestine is about 1.5 meters long. It is divided into caecum, \_ , and rectum.

The liver is the largest \_ in the human body. It is in the right upper part of the abdominal cavity under the diaphragm. The gallbladder is a hollow \_ lying on the lower surface of the liver. The pancreas is a long thin gland lying under and behind the stomach.

palates; esophagus; gland; pharynx; teeth; colon; pancreas; extends; abdominal; sac.
--

**Ex. 21. Answer the following questions:**

What organ or the part of the digestive tract is located:

1. in the lower and central portions of the abdominal and pelvic cavities? 2. in the right upper part of the abdominal cavity under the diaphragm? 3. in the abdominal cavity under and behind the stomach? 4. within the abdominal cavity on the lower surface of the liver?

**Ex. 22. Speak on the structure and functions of the digestive system. The following expressions may be helpful:**

Digestive system consists of ... .

Important structures of ... are ... .

The first/second/last segment of alimentary canal is ... .

Food passes through ... to ... .

Small/Large intestine is divided into/includes/consists of ... .

The main function of ... is to ... .

**Ex. 23. Read and reproduce the following dialogue:**

**AT THE GASTROENTEROLOGIST'S**

**Gastroenterologist:** What do you complain of?

**Patient:** I often have a severe pain in my abdomen.

**G. :** In what part of abdomen do you feel the pain?

**P.:** In the upper part. Here it is.

**G. :** What is the character of the pain? Is your pain acute or dull?

**P.:** It is dull. But sometimes I have colics in my stomach.

**G.:** Is your pain constant or periodic?

**P.:** I feel it just after meals.

**G.:** Do you take any medicines when you feel the pain?

**P.:** Yes, I do. I take some medicines and my pain disappears.

**G.:** When did the abdominal pain appear? Where does the pain radiate to?

**P.:** The pain appeared some months ago. It often radiates to the back.

**G.:** Do you have a feeling of heaviness?

**P.:** Yes, I do.

**G.:** What else troubles you?

**P.:** Sometimes I have nausea or vomiting.

**G.:** Do you obtain relief after vomiting?

**P.:** Yes, I do.

**G.:** Now undress, please. I'll examine you. Show me your tongue, please. Your tongue is thickly coated. Lie down on the couch. I'll palpate your abdomen. The abdomen is symmetrically enlarged. Show me where the pain is. Is it painful when I press here?

**P.:** Yes, it is.

**G.:** That's all. Dress yourself and sit down here. Listen to me attentively. First you have to make roentgenography of your abdomen and your gastric juice analysis. Then come to me and I'll prescribe you the treatment. Keep to a diet. Don't eat sour and salt meals. Avoid the physical exertion and emotional overstrain.

**P.:** Thank you. I'll fulfill all your administrations.

## OVERVIEW

The alimentary canal includes mouth, pharynx, esophagus, stomach, small intestine, and large intestine. The related organs are teeth, tongue, salivary glands, hard and soft palates, liver, gallbladder, and pancreas. The digestive tract extends from the oral cavity to the anus. From the mouth food passes through the pharynx to the esophagus and then to the stomach. The stomach receives food from esophagus, and its mixing action reduces the food to a semi-liquid mixture. The small intestine is a thin-walled tube. It is composed of the duodenum, jejunum, and ileum. The last section of the digestive tract is the large intestine. It is divided into cecum, colon, and rectum. The functions of the digestive system are to ingest food, masticate the food, propel the food through the digestive tract, add secretions to the food and digest the food. Once these useful substances are absorbed, they are transported through the circulatory system to cells where they are used. Undigested matter is moved out of the digestive tract and excreted through the anus. The digestive system consists of the alimentary canal and the related organs.

## LESSON 36 STOMACH

### VOCABULARY

**store** [stɔ:] берегти, зберігати  
**mix** [mɪks] змішувати, перемішувати  
**segment** [ˈsegment] ділянка, сектор  
**cardiac** [ˈkɑːdiæk] кардіальний, що належить до проксимального відділу  
**fundus** [ˈfʌndʌs] дно  
**pyloric** [ˈpaɪlɔːrɪk] пілоричний  
**curvature** [ˈkɜːvʃə] вигин  
**sphincter** [ˈsfɪŋktə] сфінктер  
**juice** [dʒuːs] сік  
**antrum** [ˈæntɹəm] печера, порожнина

**protein** [ˈprəʊtɪn] білок, протеїн  
**serve** [sɜːv] служити; виконувати  
**hydrochloric** [ˈhaɪdrəˈklɔːrɪk] соляний, хлористий, хлористоводневий  
**create** [kriːeɪt] виробляти, створювати  
**lining** [ˈlaɪnɪŋ] слизова оболонка  
**push** [puʃ] проштовхувати, штовхати  
**solid** [ˈsɒlɪd] твердий  
**primarily** [ˈpraɪmərɪli] здебільшого, головним чином  
**processed** [ˈprɒsɪst] оброблений, перероблений

### WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Suffixes of Adjectives:**

-y

ice лід – icy льодяний

**Ex. 2. Read and translate the following words:**

Salty; healthy; sleepy.

**Ex. 3. Form adverbs from the following adjectives and translate them:**

**MODEL:** chief головний – chiefly головним чином, здебільшого

Particular, initial, deep, final, partial, complete, recent, extreme, wide, quick, local, common, chemical, mechanical, sufficient.

### GRAMMAR:

**Ex. 4. Familiarize yourself with the data of the following table:**

**CONTINUOUS TENSES**  
**(Passive Voice, Affirmative Form)**  
**to be + being + Participle II (V3)**

Present	Past	Future
I am being He } She } <b>is being</b> It } You } We } <b>are being</b> They }	I He } She } <b>was being</b> It } You } We } <b>were being</b> They }	—
} + V3	} + V3	

**MODEL:**

The total number of muscles is being counted by the student.

The exact amount of mucus in the accessory glands was being determined during the experiment.

**Ex. 5. Read and translate the following sentences into Ukrainian:**

1. A favorable effect is being produced on the patient's condition by the administration of this drug.
2. The mucus is being secreted by the major glands.
3. The water was being absorbed by the digestive system.
4. Some changes were being observed in the patient's oral cavity.
5. The functions of the stomach are being restored rapidly during the treatment.

**Ex. 6. Choose the sentences with the predicates in Continuous Passive and translate them into Ukrainian:**

1. The patient was being questioned by the gastroenterologist.
2. The blood was dropping from the wound very slowly.
3. They were being examined in the gastroenterological department.
4. They are not carrying out an experiment at present.
5. The properties of microorganisms are being investigated by the laboratory worker.

**Ex. 7. Translate the following sentences into English paying attention to the using of the Active and Passive Continuous Tenses:**

1. Зараз лікар лікує хворого з приводу запалення підшлункової залози.
2. Нині цей хворий лікується в нашому відділенні з приводу запалення порожньої кишки.
3. Медична сестра заповнювала температурні листи пацієнтів о 9 годині ранку.
4. Температурні листи пацієнтів заповнювались медичною сестрою о 8 годині ранку.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 8. Read the VOCABULARY and memorize new words.**

**Ex. 9. Insert the missing letters and translate the following words into Ukrainian:**

Cardia\_; h\_drochloric; c\_rvature; sol\_d; f\_ndus; cre\_te; sp\_incter; prot\_in; py\_oric; se\_ment; pu\_h; st\_mach; lini\_g; sto\_e.

**Ex. 10. Read the following words:**

Stomach; digestive; superior; antrum; abdomen; esophagus; fundus; curvature; pyloric; receive; sphincter; mechanical; move; allow; sufficiently; powerful; piece; secrete; pepsin; enzyme; hydrochloric; liquid; primarily; partially.

**Ex. 11. Translate the following words into English:**

Сфінктер; шлунок; слизова оболонка; дно; ділянка, сектор; пілоричний; виробляти, створювати; вигин; проштовхувати, штовхати; слугувати; твердий; оброблений, перероблений; берегти, зберігати.

**Ex. 12. Read the following text:**

**STOMACH**

Serious investigations were being done by various scientists to establish functions and anatomical structure of the stomach. The stomach stores and mixes the ingested food. The major function of the stomach is to prepare the food chemically and mechanically so it can be received in the small intestine for further digestion and absorption into the blood. Only small amounts of such food as simple sugars, alcohol, and some medications are actually absorbed in the stomach.

The stomach is an enlarged segment of the digestive tract. It is located in the left superior portion of the abdomen. Its shape and size vary from person to person.

The opening from the esophagus into the stomach is gastroesophageal, or cardiac (located near the heart), opening. The region of the stomach around the cardiac opening is the cardiac region. The stomach consists of the fundus (upper part), the body (middle part), and the antrum (lower distal part). The largest portion of the stomach is the body, which turns to the right, thus creating a greater curvature and a lesser curvature. The body narrows to form the pyloric region, which joins the small intestine. The opening between the stomach and the small intestine is the pyloric opening, which is surrounded by a ring of smooth muscles called the pyloric sphincter. The cardiac sphincter relaxes and contracts to move food from the esophagus into the stomach. The pyloric sphincter allows food to leave the stomach when it has been sufficiently digested.

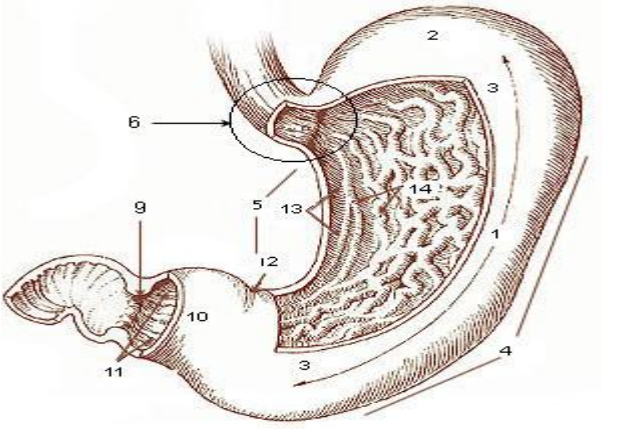
The walls of the stomach consist of various layers of powerful muscles. The mechanical activity of these muscles breaks the food into smaller and smaller pieces. The glands of the stomach secrete gastric juice. This juice contains pepsins (digestive enzymes) and hydrochloric acid. Pepsin converts proteins into smaller substances. Hydrochloric acid is necessary for the correct action of pepsin.

Food leaves the stomach in two phases. The upper portion of the stomach contracts first, pushing the more liquid material into small intestine. The more solid food leaves later, primarily by the action of the muscles in the lower part of the stomach. The partially processed food then travels through the pyloric canal into the first portion of small intestine, the duodenum.

**Ex. 13. Translate the following words and word-combinations into Ukrainian:**

Enlarged segment; left superior portion; to vary from person to person; cardiac opening; antrum; ring of smooth muscles; body turns to the right; narrow; surround; the sphincter relaxes and contracts; the walls of the stomach; convert; food leaves the stomach in two phases.

**Ex. 14. Translate the text "Stomach" into Ukrainian.**

 <p><i>Structure of the Stomach</i></p>	<ol style="list-style-type: none"><li>1. Body of the stomach;</li><li>2. Fundus;</li><li>3. Anterior wall;</li><li>4. Greater curvature;</li><li>5. Lesser curvature;</li><li>6. Cardia;</li><li>9. Pyloric sphincter.</li><li>10. Pyloric antrum;</li><li>11. Pyloric canal;</li><li>12. Angular notch;</li><li>13. Gastric canal;</li><li>14. Rugal folds.</li></ol>
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**Ex. 15. Answer the following questions:**

1. What is the stomach? 2. What is the major function of the stomach? 3. Where is the stomach located? 4. What does the stomach consist of? 5. What is the largest portion of the stomach? 6. What is the cardiac opening? 7. What is pyloric opening? 8. What is the pyloric sphincter? 9. What do the walls of the stomach consist of? 10. What secretes the gastric juice? 11. What substances does the gastric juice contain? 12. What substances are absorbed in the stomach?

**Ex. 16. Insert the missing words:**

1. The stomach \_ and mixes the ingested food. 2. The stomach is a dilated portion of the alimentary \_\_. 3. It consists of the \_\_, the body, and the antrum. 4. The upper opening of the stomach is called the cardiac \_ and the lower one is called the \_ opening. 5. Different gastric \_ are in the stomach. 6. The glands of the stomach secrete gastric \_\_. 7. This juice contains pepsins and \_ acid. 8. Pepsin converts proteins into \_ substances. 9. Hydrochloric acid is necessary for the correct \_ of pepsin.

**Ex. 17. Choose the anatomical terms from the box for the following definitions:**

1. The organ of chewing and tasting. 2. The upper part of the stomach. 3. The lower distal part of the stomach. 4. The upper opening of the stomach. 5. A hollow sac-like organ of the alimentary tract.

tongue; fundus; stomach; cardiac opening; antrum.
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**Ex. 18. Complete the following sentences:**

1. The human stomach is \_\_. 2. It is connected to \_\_. 3. The stomach is composed of \_\_. 4. Gastric juice contains \_\_. 5. The functions of the stomach are \_\_. 6. The body of the stomach is \_\_. 7. The fundus of the stomach is \_\_. 8. The antrum is \_\_. 9. The cardiac opening is \_\_. 10. The pyloric opening is \_\_.

**Ex. 19. Name the major portions of the stomach and speak on them.**

**Ex. 20. Describe the functions of digestive enzymes and hydrochloric acid.**

**Ex. 21. Translate the following sentences into English:**

1. Шлунок – найбільш розширений відділ травного каналу. 2. Він розташований між стравоходом і дванадцятипалою кишкою, у верхньому відділі черевної порожнини. 3. Форма та розміри шлунка коливаються у різних людей. 4. Це залежить від його функціонального стану, від віку та статі. 5. По краях шлунка одна його стінка переходить в іншу, утворюючи малу кривизну шлунка. 6. Стінки шлунка складаються з трьох оболонок: серозної, м'язової та слизової.

**Ex. 22. Write out key words of the text "Stomach" and retell the text. The following expressions may be helpful:**

The stomach is ... .

It is located in .. .

The stomach stores and mixes ... .

It consists of ... .

The body/fundus/antrum/cardiac opening/pyloric opening is ... .

**Ex. 23. Compose the dialogue on the structure of the stomach.**

**Ex. 24. Add the missing parts of the clinical terms:**

1. Gastro\_ is an instrument inserted through the mouth for visually inspecting the inside of the stomach. 2. Gastroentero\_ is the branch of medicine that is concerned with disorders of the digestive system. 3. Gastr\_ is an inflammation of the stomach lining. 4. Gastr\_ is the surgical removal of all, or especially part of the stomach.

A. \_scope; B. \_itis; C. \_ectomy; D. \_logy.



**Ex. 25. Read and narrate the following text:**

**STOMACH FUNCTIONS**

The major stomach functions are to store and mix the ingested food.

**Secretions of the stomach.** Stomach secretions include mucus, hydrochloric acid, gastrin, intrinsic factor, and pepsinogen, the inactive form of the protein-digesting enzyme pepsin. Mucus protects the stomach lining. Pepsinogen is converted to pepsin, which digests proteins. Hydrochloric acid promotes pepsin activity and kills microorganisms. Intrinsic factor is necessary for vitamin B<sub>12</sub> absorption.

**Regulation of stomach secretion.** Approximately 2 to 3 L of gastric secretions (gastric juice) are produced each day. Diet dramatically affects the secretion amount; up to 700 ml are secreted as a result of a typical meal. Both nervous and hormonal mechanisms regulate gastric secretions. Regulation of stomach secretion is divided into 3 phases: cephalic, gastric, and intestinal. The cephalic phase is initiated by the sight, smell, taste, or thought of food. Nerve impulses from the medulla stimulate hydrochloric acid, pepsinogen, and gastrin secretion. The gastric phase is initiated by distention of the stomach, which stimulates gastrin secretion and activates central nervous system and local reflexes that promote secretion. The intestinal phase is initiated by acidic chyme, which enters the duodenum and stimulates neuronal reflexes and the secretion of hormones that induce and then inhibit gastric secretions.

**Mixing of stomach contents.** Ingested food is mixed with the secretions of the stomach glands to form a semi-fluid material called chyme. This mixing is accomplished by gentle mixing waves, which are peristaltic-like contractions that occur every 20 seconds to mix the ingested material with the secretions of the stomach. Peristaltic waves occur less frequently. They are more powerful than mixing waves, and force the chyme near the periphery of the stomach toward the pyloric sphincter. Roughly 80% of the contractions are mixing waves, and 20% are peristaltic waves.

**Regulation of stomach emptying.** The amount of time food remains in the stomach depends on the number of factors, including the type and volume of food. Liquids exist in the stomach within 1 and ½ hours to 2 and ½ hours after ingestion. After a typical meal the stomach is usually empty within 3 to 4 hours. Gastrin and stretching of the stomach stimulate stomach emptying.

**Regulation of stomach movements.** If the stomach empties too fast, the efficiency of digestion and absorption is reduced. If the rate of emptying is too slow, the highly acidic contents of the stomach may damage the stomach wall and reduce the rate at which nutrients are digested and absorbed. Stomach emptying is regulated to prevent these two extremes. Stomach stretches and relaxes to increase volume. Conversely, many of the hormonal and neural mechanisms decrease the rate of the stomach emptying.

**OVERVIEW**

The stomach stores and mixes the ingested food. The major function of the stomach is to prepare the food for further digestion and absorption into the blood. The stomach is a dilated portion of the alimentary tract. It consists of the fundus, the body, and the antrum. The upper opening of the stomach is called the cardiac opening and the lower one is called the pyloric opening. The cardiac sphincter relaxes and contracts to move food from the esophagus into the stomach. The pyloric sphincter allows food to leave the stomach when it has been sufficiently digested. Different gastric glands are in the stomach. The glands of the stomach secrete gastric juice. This juice contains pepsins and hydrochloric acid. Pepsin converts proteins into smaller substances. Hydrochloric acid is necessary for the correct action of pepsin.

**LESSON 37  
LIVER**

**VOCABULARY**

**lobe** [*lʊb*] часть

**storage** [*stɔ:riʤ*] накопичення;

**porta** [ˈpɔ:tə] ворота  
**duct** [dʌkt] канал, протока  
**hepatic** [hɪˈpætɪk] печінковий  
**plexus** [ˈpleksʊs] сплетіння  
**bile** [baɪl] жовч  
**cystic duct** [ˈsɪstɪk] міхурний проток  
**empty** [ˈemptɪ] спорожнити; виливати;  
 впадати, входити  
**pancreatic duct** [ˈpæŋkrɪˈætiːk] вірзунгова  
 протока, протока підшлункової залози  
**bowel** [ˈbaʊəl] кишка  
**detoxification** [dɪˈtɒksɪfɪˈkeɪʃən] детоксикація  
**embryo** [ˈembriːo] зародок, ембріон

акумулювання  
**copper** [ˈkɒpə] мідь  
**harmful** [ˈhɑ:mfl] шкідливий, небезпечний  
**treat** [tri:t] обробляти, піддавати дії  
**excrete** [ekrɪˈtɪt] виділяти  
**complexity** [kəmˈpleksɪtɪ] складність  
**exposure** [eksˈpʊʒə] піддавання будь-якому  
 впливу  
**vulnerable** [ˈvʌln(ə)rəbl] уразливий  
**protect** [prɪˈtekt] захищати; оберігати  
**capable** [ˈkeɪpəbl] здатний  
**heal** [hi:l] виліковувати  
**repair** [rɪˈpeɪə] відновлення, регенерація  
**injury** [ˈɪnʒ(ə)rɪ] травма, пошкодження

### WORD-BUILDING

**Ex. 1. Familiarize yourself with the following material:**

**Suffixes of Adjectives:**

**-less** (without)

use *користь* – useless *корисний*

**-ous** (pertaining to)

infectious *інфекційний*

**Ex. 2. Read and translate the following words:**

**A.** Harmless; useless; colorless.

**B.** Serious; intravenous; famous; membranous; venous; cutaneous; mucous; deciduous; osseous.

### GRAMMAR:

**Ex. 3. Familiarize yourself with the data of the following table:**

#### CONTINUOUS TENSES

(Passive Voice, Interrogative Form)

TENSE	QUESTION WORD	AUXILIARY VERB	SUBJECT	VERB
<b>Present Continuous Tense</b>	What	<b>am</b>	I	<b>being + V<sub>3</sub></b>
	Where	<b>is</b>	he, she, it	
<b>Past Continuous Tense</b>	When	<b>are</b>	we, you, they	<b>being + V<sub>3</sub></b>
	How	<b>was</b>	he, she, it	
<b>Future Continuous Tense</b>	Why	<b>were</b>	we, you, they	-
	How many	-	-	
	How much			
	Whom			

**MODEL:**

Where are the preventive measures being conducted?

Why was the work being done?

**Ex. 4. Read and translate the following questions:**

1. Why are all efforts being directed towards the early diagnosis of gastric disorders? 2. Where was the solution being injected? 3. Is the child being examined by the surgeon? 4. What part of digestive system is water being absorbed in?

**Ex. 5. Turn the following sentences into interrogative:**

1. The scientific works are being translated into foreign language. 2. Serious investigations were being done by various scientists to establish functions and anatomical structure of the stomach. 3. At present the ingested food is being mixed. 4. The food is being broken into smaller and smaller pieces by the mechanical activity of these muscles. 5. Now the stomach lining is being protected by the mucus. 6. Bile was being transported out of the liver. 7. The red bone marrow is being stimulated in this embryo. 8. These drugs are being removed by the liver. 9. The injured tissue is being replaced in this person. 10. The functions of the injured section are being performed by other cells.

**READING AND DEVELOPING SPEAKING SKILLS**

**Ex. 6. Read the VOCABULARY and memorize new words.**

**Ex. 7. Insert the missing letters, read and translate the following words:**

V\_lnerable; b\_le; d\_ct; detoxi\_ication; pan\_reatic; bo\_el; comple\_ity; l\_be; tr\_at; ple\_us; prote\_t; embr\_o; repa\_r; port\_l; empt\_; capa\_le; hepatic\_; expo\_ure; stora\_e; he\_l; c\_stic; ex\_rete; ha\_mful; in\_ury.

**Ex. 8. Read the following words and word-combinations:**

Weigh; upper; abdomen; major; minor; porta; inferior; surface; associated with; artery; nerve; plexus; unite; cystic; empty; pancreatic duct; cholesterol; duodenum; perform; through; lining; bowel; group; category; marrow; fibrinogen; embryo; iron; heat; remove; excrete; feces and urine; exposure; reasonable; believe; injured tissue.

**Ex. 9. Read the following text:**

**LIVER**

The liver is the largest internal gland of the body. It weighs approximately 1.36 kg. The liver is in the upper right part of the abdomen. The liver consists of two major lobes, left and right, and minor lobes.

A porta (gate) is on the inferior surface of the liver where the various vessels, ducts, and nerves enter and exit the liver. The hepatic (associated with the liver) portal vein, the hepatic artery, and a small hepatic nerve plexus enter the liver through the porta. Lymphatic vessels and two hepatic ducts exit the liver at the porta. The hepatic ducts transport bile out of the liver. The right and left hepatic ducts unite to form a single common hepatic duct. The common bile duct is joined by the cystic duct from the gallbladder to form the common bile duct, which empties into the duodenum in union with the pancreatic duct. The gallbladder is a small sac on the inferior surface of the liver that stores bile. The bile is a fluid containing cholesterol and bile acids. The bile is emptied into the duodenum, where it performs its major function of assisting in the absorption of fats through the lining of the small bowel into the bloodstream. The bile acids are then reabsorbed in the small intestine and cycled into the liver to be used again.

The liver, besides producing bile, has many other important functions. They may be grouped into three categories: regulation, metabolism, and detoxification. They are: stimulation of red bone marrow, production of fibrinogen, blood formation in the embryo, storage of iron and copper, protein metabolism, fat metabolism, heat production and others. The liver removes drugs, alcohol, and potentially harmful chemicals from the bloodstream and treats them chemically so they can be excreted in the feces and urine.

Because of the complexity of the liver and its exposure to so many potentially harmful substances, it would be reasonable to believe that it is especially vulnerable to disease. However, nature protects the organ in several ways. First, the liver is capable of regeneration: it can heal itself by repairing or replacing injured tissue. It also is constructed so that many units are responsible for the same task. Thus, if tissue in one section of the organ is injured, by trauma or disease, other cells will perform the functions of the injured section.

**Ex. 10. Translate the following words and word-combinations into English:**

Печінка; складатися з; виділяти; жири та білки; сплетіння; частка; протока підшлункової залози; спорожнювати, виливати; виліковувати, зціляти; міхурна протока; канал, протока; ворота органа; захищати; печінковий; жовч; накопичення, акумулювання; відновлення, регенерація; травма, пошкодження.

**Ex. 11. Translate the text "Liver" into Ukrainian.**

**Ex. 12. Complete the following sentences:**

1. The liver is the largest internal \_ of the body. 2. It is located in the upper right part of the \_. 3. The liver consists of two major \_ and minor lobes. 4. A \_ is the place of the liver where the various vessels, \_, and nerves enter and exit the liver. 5. The hepatic \_, the hepatic artery, and a small hepatic nerve \_ enter the liver through the porta. 6. Lymphatic vessels and two hepatic ducts \_ the liver at the porta. 7. The hepatic ducts transport \_ out of the liver. 8. The right and left hepatic \_ unite to form a single common hepatic duct. 9. The functions of the liver are the following: bile production, stimulation of red \_ marrow, \_ of iron and copper, protein metabolism, fat metabolism, heat production, and \_.

**Ex. 13. Answer the following questions:**

1. What is the liver? 2. Where is it located? 3. What is the weight of the liver? 4. What is a porta? 5. What is the function of the hepatic duct? 6. What is the bile? 7. What are the functions of the liver? 8. How does nature protect the liver?

**Ex. 14. Match the term and its definition:**

- |                          |   |
|--------------------------|---|
| 1. Hepatic artery        | 1. Vein that drains the liver into the inferior vena cava.  |
| 2. Hepatic duct          | 2. System of portal veins that carry blood from the intestines, stomach, spleen, and pancreas to the liver.   |
| 3. Hepatic portal system | 3. One of two ducts (left and right) that drain bile from the liver and join to form the common hepatic duct. |
| 4. Hepatic portal vein   | 4. Portal vein formed by the superior mesenteric and splenic veins and entering the liver.                    |
| 5. Hepatic vein          | 5. Branch of the aorta that delivers blood to the liver.  |

**Ex. 15. Write out the key words of the text "Liver".**

**Ex. 16. Speak on the structure of the liver:**

**LIVER:**

(1) right lobe, (2) left lobe, (3) caudate lobe, (4) quadrate lobe, (5) hepatic artery and portal vein, (6) hepatic lymph nodes, (7) gallbladder.



*Liver*

**Ex. 17. Translate the following sentences concerning with the liver function:**

1. The liver produces bile, which contains bile salts that emulsify fats. 2. The liver stores nutrients, processes them, and produces new molecules. 3. The liver produces blood components. 4. One of the liver functions is the storage of glycogen, a complex carbohydrate that is converted to sugar for release into the bloodstream when the blood sugar level falls. 5. Glycogen is deposited in the liver when the level of sugar in the blood increases. 6. Many proteins are also synthesized in the liver. 7. The liver helps determine the amount of nutrients that are sent to the rest of the body. 8. It also serves as a clearinghouse to eliminate some foods and substances that have served their purpose but are no longer useful. 9. Many ingested substances are harmful to the cells of the body. 10. In addition, the body itself produces many by-products of metabolism that, if accumulated, are toxic. 11. The liver is one line of defense against many of those harmful substances. 12. The liver can also produce its own unique new compounds. 13. Many of the blood proteins are produced by the liver and are released into the circulation.

**Ex. 18. Speak on the functions of the liver.**

**Ex. 19. Compose the dialogue on the structure and functions of the liver.**

**Ex. 20. Translate the following sentences into English:**

1. Печінка – найбільша залоза тіла людини. 2. Її маса у дорослих дорівнює в середньому 1500 г. 3. Вона розташована у верхній частині черевної порожнини. 4. З воріт печінки, крім жовчних проток, виходять лімфатичні судини. 5. Печінка, як залоза травної системи виконує екскреторну функцію – виробляє жовч. 6. У дорослої людини протягом доби печінка продукує 700-800 см<sup>3</sup> жовчі. 7. Печінці властива також бар'єрна функція. 8. Печінка бере участь в усіх видах обміну речовин: водному, білковому, вуглеводному та мінеральному. 9. Печінка виконує також гормональну функцію.

## OVERVIEW

The liver is the largest internal gland of the body. It is in the upper right part of the abdomen. The liver consists of two major lobes and minor lobes. A porta is the place of the liver where the various vessels, ducts, and nerves enter and exit the liver. The hepatic portal vein, the hepatic artery, and a small hepatic nerve plexus enter the liver through the porta. The hepatic ducts transport bile out of the liver. The right and left hepatic ducts unite to form a single common hepatic duct. The functions of the liver are the following: bile production, stimulation of red bone marrow, storage of iron and copper, protein metabolism, fat metabolism, heat production, and detoxification.

## LESSON 38 REVISION

### TEST

#### I. Insert missing words:

- \_ is an enlarged segment of the digestive tract in the left superior portion of the abdomen.  
A. stomach  
B. esophagus  
C. kidney
- Each person has a particular combination of \_ in his/her blood.  
A. tissues  
B. substances  
C. atria
- Leukemia causes the formation of large amount of \_ white blood cells.  
A. effective  
B. normal  
C. abnormal
- The heart is an inner hollow \_ organ placed within the chest.

- A. accessory
- B. ventricular
- C. muscular

5. The bones of the skull consist of \_ and facial parts.

- A. lumbar
- B. thoracic
- C. cranial

6. The patient with the signs of atherosclerosis must \_ not less than 7-8 hours.

- A. run
- B. sleep
- C. eat

7. The most important \_ of chronic gastritis are alcohol, inadequate food, and a bad diet regimen.

- A. manifestations
- B. causes
- C. symptoms

## II. Insert the correct form of the verb:

1. Once the digestive products have been absorbed, they \_ to the other parts of the body.

- A. are transported
- B. is transported
- C. transport

2. Erythrocytes \_ in the bone marrow and are important in that they transport oxygen from the lungs.

- A. has been made
- B. are made
- C. is making

3. The muscles \_ of the muscular fibers and contain blood vessels and nerves.

- A. was consisted
- B. consist
- C. are consisted

4. The contractions of the heart \_ the blood through the arteries to all parts of the body.

- A. has pumped
- B. was pumped
- C. pump

5. The heart consists of two separate chambers \_ by the septum.

- A. are dividing
- B. divide
- C. divided

6. Tears occur when the covering skin \_ beyond the limits of its elasticity.

- A. is pulled
- B. are pulled
- C. have been pulled

## III. Translate the following sentences:

1. The lower limb is very similar to that of the upper limb, except the pelvic girdle.

2. When the pressure in the right atrium has increased the blood passes into the right ventricle.

3. When the patient is hospitalized his/her activities will be limited and carefully monitored by the hospital staff.

4. In the majority of cases the ulcer develops in particularly nervous persons, often after emotional stress.

5. Vitamins are widely used in the treatment of atherosclerosis because some of them improve the metabolic processes and dilate the vessels.

6. Smooth muscle is in the walls of the hollow organs and tubes, in the internal parts of the eyes, and in the walls of blood vessels.
7. The characteristic clinical manifestations of gastritis are an increased secretion of mucus and diminished secretion of acid and pepsin.

#### **IV. Read and translate one of the following texts:**

#### **Text A**

### **ATHEROSCLEROSIS**

Healthy arteries are like healthy muscles. They are strong, flexible, and elastic. Atherosclerosis is the condition in which fatty deposits accumulate in and under the lining of the artery walls. The name comes from the Greek word *ather*, meaning "porridge", because the fatty deposits are soft and resemble porridge. Blood cells (platelets) often clump at microscopic sites of injury to the inner wall of the artery. At these sites, fat deposits also collect. Initially, the deposits are only streaks of fat-containing cells but, as they enlarge, they invade some of the deeper layers of the arterial walls, causing scarring and calcium deposits. Large accumulations called atheromas or plaques are the principal characteristic of atherosclerosis. The greatest danger from these deposits is the narrowing of the channel through which the blood flows. When this occurs, the tissues that the artery supplies will not receive their full quota of blood. Pieces of the fatty deposits may be dislodged, travel with the blood flow, and finally obstruct an artery at some distant point.

Atherosclerosis may be discovered in the course of a routine physical examination. During examination of patient's neck, abdomen, or other parts of the body, the physician may hear a blowing sound if a narrowing of the lining of the arteries at one or more these points causes turbulence of the blood flow. The physician also will estimate the amount of blood flow by feeling for pulsations in the arteries at the wrists, legs, and feet. A decrease in pulsations is a reason to suspect partially obstructed blood flow.

More elaborate tests of circulation using sound waves often help in establishing the presence and degree of decreased blood flow. Ultrasound scan of the abdomen often is used to identify a suspected aneurysm of the aorta in the abdomen. Another test for locating the sites of plaques that narrow blood vessels is arteriography. In many cases, the diagnosis is not suspected until the artery is completely obstructed and the person has experienced a stroke, heart attack, or arterial thrombosis.

To some extent, the body can protect itself from narrowing of a particular artery by developing, with time, additional arterial connections that detour blood around the narrowed point. This is called collateral circulation.

Although atherosclerosis occurs to some extent in all middle-aged and elderly people and even may occur in certain young people, some people appear more at risk because of high blood cholesterol levels.

The best prevention and treatment of atherosclerosis is certain regimen, sound sleep, rest, and proper diet. Vitamins are widely used in the treatment of this disease. Other drugs administered in treating atherosclerosis are so-called lipotropic substances, which prevent fat from accumulating in the organism.

#### **Text B**

### **ANGINA PECTORIS**

If you are having pain or pressure in the middle of your chest, left neck, left shoulder, or left arm, go immediately to the nearest hospital emergency department. Do not drive yourself. Call for emergency transport.

Angina, or angina pectoris, is the medical term used to describe the temporary chest discomfort that occurs when the heart is not getting enough blood. The heart is a muscle (myocardium) and gets its blood supply from the coronary arteries. Blood carries the oxygen and nutrients the heart muscle needs to keep pumping. When the heart does not get enough blood, it can no longer function at its full capacity. When physical exertion, strong emotions, extreme temperatures, or eating increase the demand on the heart, a person with angina feels temporary pain,

pressure, fullness, or squeezing in the center of the chest or in the neck, shoulder, jaw, upper arm, or upper back. This is angina, especially if the discomfort is relieved by removing the stressor and/or taking sublingual (under the tongue) nitroglycerin.

The discomfort of angina is temporary, meaning a few seconds or minutes, not lasting hours or all day. An episode of angina is not a heart attack. Having angina means you have an increased risk of having a heart attack. A heart attack is when the blood supply to part of the heart is cut off and that part of the muscle dies (infarction).

Prolonged or unchecked angina can lead to a heart attack or increase the risk of having a heart rhythm abnormality. Either of those could lead to sudden death. Time is very important in angina. The more time the heart is deprived of adequate blood flow (ischemia), and thus oxygen, the more the heart muscle is at risk of heart attack or heart rhythm abnormalities. The longer the patient experiences chest pain from angina, the more the heart muscle is at risk of dying or malfunctioning. Not all chest pain is angina. Pain in the chest can come from a number of causes, which range from not serious to very serious. For example, chest pain can be caused by: acid reflux (gastroesophageal reflux disease), upper respiratory infection, asthma, or sore muscles and ligaments in the chest (chest wall pain).

If chest pain is severe and/or recurrent, the patient should see a healthcare provider.

## Text C

### PEPTIC ULCER

Peptic ulcers are holes or breaks in the inner lining of the esophagus, stomach, or duodenum. It has been determined that peptic ulcer generally occurs in the lower part of the stomach (gastric ulcer), in the initial portion of the duodenum (duodenal ulcer), and occasionally in the lower esophagus (esophageal).

The signs and symptoms of the peptic ulcer are the following: burning, aching, or hunger discomfort in the upper abdomen or lower chest (that is relieved by milk or food); black stools; bloated feeling after meals; and nausea or vomiting. In emergency cases the person has clammy skin and fainting.

The cause of ulcers is not fully known. Normally, the linings of the esophagus, stomach, and duodenum are kept intact by a balance between the acid and stomach juices and the resistance of these linings to injury. When the balance breaks down, the result may be a peptic ulcer. Recent research has shown that many ulcers may be secondary to bacteria called *Helicobacter pylori* (*H pylori*).

Peptic ulcers are not uncommon in our society. It has been estimated that the age at diagnosis peaks between 30 and 50 for duodenal ulcers and between 60 and 70 for gastric ulcers. Frequently, ulcers recur within 1 year after healing, sometimes without symptoms.

Some people may have an inherited disposition to ulcers. Peptic ulcers are 3 times more likely to occur in families of patients with duodenal ulcer than in the general population. And relatives of people with gastric ulcers have the very same kind of ulcer.

The goals of treatment are to relieve symptoms, heal the ulcer, prevent relapse, and avoid complications.

The vast majority of persons with peptic ulcer disease responds well to medication. The key to treatment is either decreasing the amount of acid present or strengthening the protective lining of the stomach or duodenum. The mainstay of treatment is a class of drugs that decrease the amount of acid produced in the stomach. These drugs are called H<sub>2</sub> blockers. The usual course of therapy lasts approximately 6 weeks. Many people with ulcers harbor *H pylori* bacteria, which can be effectively treated with antibiotics. Twelve months after treatment, most people show no ulcer recurrence, while recurrence is more common after using standard ulcer medications.

However, if the person has an ulcer that does not respond to medical treatment or the person has serious complications such as hemorrhage, obstruction, or perforation, he/she may be a candidate for surgery.

## Text D



## GASTRITIS

“Gastritis” is a general term that means inflammation of the lining of the stomach. It can result from a number of causes, each of which may produce somewhat different symptoms, such as: upper abdominal discomfort, nausea and vomiting, and diarrhea.

Gastritis can occur as a result of acid-induced damage to the lining of the stomach when no ulcer is present. Excessive smoking or alcohol consumption are known to produce mild gastritis or to aggravate existing gastritis symptoms. Gastritis also can be a side effect of a number of prescription drugs. Severe stress due to burns, trauma, surgery, or shock may produce gastritis. Gastritis is also seen in some persons whose stomachs do not produce acid. In these cases, the lining of the stomach is atrophied. This condition may be associated with vitamin B<sub>12</sub> deficiency and occurs in many older people. Even very healthy people may experience gastritis with some regularity.

In most cases, the symptoms of gastritis are relatively mild and short-lived, pose no real danger, and have no lasting effect. Occasionally, gastritis may cause bleeding, but it is rarely severe.

Antacids in liquid or tablet form are a suitable and common treatment of mild gastritis. If a person is troubled by excessive acid and antacids fail to provide relief, the physician may prescribe drugs such as cimetidine, ranitidine, or nizatidine, which decrease the amount of acid produced by the stomach. Medication to protect the lining of the stomach may be used.

**Text E**

## HISTORY OF ANTIBIOTICS

Although potent antibiotic compounds for treatment of human diseases caused by bacteria (such as tuberculosis, bubonic plague, or leprosy) were not isolated and identified until the twentieth century, the first known use of antibiotics was by the ancient Chinese over 2,500 years ago. Many other ancient cultures, including the ancient Egyptians and ancient Greeks already used molds and plants to treat infections, owing to the production of antibiotic substances by these organisms. At that time, however, the compounds having antibiotic activity and present in moulds or plants were unknown.

The antibiotic properties of *Penicillium sp.* were first described in France by Ernest Duchesne in 1897. However, his work went by without much notice from the scientific community until Alexander Fleming's discovery of Penicillin.

Modern research on antibiotic therapy began in Germany with the development of the narrow-spectrum antibiotic Salvarsan by Paul Ehrlich in 1909, for the first time allowing an efficient treatment of the widespread problem of Syphilis. The drug, which was also effective against other spirochaetal infections, is no longer in use in modern medicine.

Antibiotics were further developed in Britain following the re-discovery of Penicillin in 1928 by Alexander Fleming. More than ten years later, Ernst Chain and Howard Florey became interested in his work, and came up with the purified form of penicillin.

The term "antibiotic" was originally used to refer only to substances extracted from a fungus or other microorganism, but has come to include also many synthetic and semi-synthetic drugs that have antibacterial effects.

**Text F**

## SIDE EFFECTS

Possible side effects are varied, depend on the antibiotics used and the microbial organisms targeted. Adverse effects can range from fever and nausea to major allergic reactions including photodermatitis. One of the more common side effects is diarrhea, sometimes caused by the anaerobic bacterium **Clostridium difficile**, which results from the antibiotic disrupting the normal balance of the intestinal flora. Such overgrowth of pathogenic bacteria may be alleviated by ingesting **probiotics** during a course of antibiotics. An antibiotic-induced disruption of the population of the bacteria normally present as constituents of the normal vaginal flora may also occur, and may lead to overgrowth of yeast species of the genus **Candida** in the vulvo-vaginal area.

Other side effects can result from interaction with other drugs, such as elevated risk of tendon damage from administration of a quinolone antibiotic with a systemic corticosteroid.

It is a common assertion that some antibiotics can interfere with the efficiency of birth control pills. Although there remain few known cases of complication, the majority of antibiotics do not interfere with contraception, despite widespread misinformation to the contrary.

### V. Speak on the following topics:

1. Chemist's Shop.
2. Vitamins
3. Drugs
4. Skeletal System.
5. Muscular System.
6. Digestive System.
7. Cardiovascular System.

### APPENDIX 1

#### IRREGULAR VERBS

V	Translation	V <sub>2</sub>	V <sub>3</sub>
be [bi:]	бути	was, were [wɔz, wɜ:]	been [bi:n]
bear [beɪə]	нести; родити	bore [bɔ:]	born(e) [bɔ:n]
beat [bi:t]	бити	beat [bi:t]	beaten [bi:tn]
become [bi'kʌm]	ставати	became [bi'keɪm]	become [bi'kʌm]
begin [bi'ɡɪn]	починати	began [bi'ɡɛn]	begun [bi'ɡʌn]
bring [brɪŋ]	приносити	brought [brɔ:t]	brought [brɔ:t]
build [bɪld]	будувати	built [bɪlt]	built [bɪlt]
catch [kætʃ]	ловити	caught [kɔ:t]	caught [kɔ:t]
choose [tʃu:z]	вибирати	chose [tʃoʊz]	chosen [tʃoʊzn]
come [kʌm]	приходить	came [keɪm]	come [kʌm]
cut [kʌt]	різати	cut [kʌt]	cut [kʌt]
deal [di:l]	мати справу	dealt [deɪlt]	dealt [deɪlt]
do [du:]	робити	did [dɪd]	done [dʌn]
draw [drɔ:]	тягнути	drew [dru:]	drawn [drɔ:n]
drink [drɪŋk]	пити	drank [dræŋk]	drunk [drʌŋk]
eat [i:t]	їсти	ate [et, eɪt]	eaten [i:tn]
fall [fɔ:l]	падати	fell [fel]	fallen [fɔ:lən]
feed [fi:d]	кормити	fed [fed]	fed [fed]
feel [fi:l]	відчувати	felt [felt]	felt [felt]
fight [faɪt]	битися	fought [fɔ:t]	fought [fɔ:t]
find [faɪnd]	знаходити	found [faʊnd]	found [faʊnd]
get [get]	одержувати	got [gɔt]	got, gotten [gɔtn]
give [ɡɪv]	давати	gave [geɪv]	given [ɡɪvn]
go [ɡoʊ]	ходити	went [went]	gone [ɡɔn]
grow [ɡrou]	рости	grew [ɡru:]	grown [ɡroun]
have [hæv]	мати	had [hæd]	had [hæd]
hear [hɪə]	чути	heard [hɪəd]	heard [hɪəd]
hold [həʊld]	тримати	held [held]	held [held]
keep [ki:p]	тримати; зберігати	kept [kept]	kept [kept]
know [nu:]	знати	knew [nju:]	known [nu:n]

<b>lead</b> [lɛd]	вести	<b>led</b> [led]	<b>led</b> [led]
<b>learn</b> [lɜ:n]	вчити	<b>learnt</b> [lɜ:nt], <b>learned</b>	<b>learnt</b> [lɜ:nt], <b>learned</b>
<b>leave</b> [li:v]	залишати	<b>left</b> [left]	<b>left</b> [left]
<b>lie</b> [laɪ]	лежати	<b>lay</b> [leɪ]	<b>lain</b> [leɪn]
<b>lose</b> [lu:z]	губити	<b>lost</b> [lɒst]	<b>lost</b> [lɒst]
<b>make</b> [meɪk]	робити	<b>made</b> [meɪd]	<b>made</b> [meɪd]
<b>mean</b> [mi:n]	означати, мати на увазі	<b>meant</b> [ment]	<b>meant</b> [ment]
<b>meet</b> [mi:t]	зустрічати	<b>met</b> [met]	<b>met</b> [met]
<b>pay</b> [peɪ]	платити	<b>paid</b> [peɪd]	<b>paid</b> [peɪd]
<b>put</b> [put]	класти	<b>put</b> [put]	<b>put</b> [put]
<b>read</b> [ri:d]	читати	<b>read</b> [red]	<b>red</b> [red]
<b>rise</b> [raɪz]	піднімати	<b>rose</b> [rouz]	<b>risen</b> [ri:zn]
<b>run</b> [rʌn]	бігати	<b>ran</b> [rʌn]	<b>run</b> [rʌn]
<b>say</b> [seɪ]	сказати	<b>said</b> [sed]	<b>said</b> [sed]
<b>see</b> [si:]	бачити	<b>saw</b> [sɔ:]	<b>seen</b> [si:n]
<b>send</b> [send]	посилати	<b>sent</b> [sent]	<b>sent</b> [sent]
<b>show</b> [ʃəʊ]	показувати	<b>showed</b> [ʃəʊd]	<b>showed, shown</b> [ʃəʊn]
<b>sit</b> [sɪt]	сидіти	<b>sat</b> [sɪt]	<b>sat</b> [sɪt]
<b>sleep</b> [sli:p]	спати	<b>slept</b> [slept]	<b>slept</b> [slept]
<b>smell</b> [smel]	пахнути	<b>smelt</b> [smelt]	<b>smelt</b> [smelt]
<b>speak</b> [spi:k]	говорити	<b>spoke</b> [spəʊk]	<b>spoken</b> [ˈspəʊkən]
<b>spend</b> [spend]	витрачати	<b>spent</b> [spent]	<b>spent</b> [spent]
<b>spread</b> [spred]	простягатися	<b>spread</b> [spred]	<b>spread</b> [spred]
<b>take</b> [teɪk]	брати	<b>took</b> [tu:k]	<b>taken</b> [ˈteɪkən]
<b>teach</b> [ti:tʃ]	вчити	<b>taught</b> [tɔ:t]	<b>taught</b> [tɔ:t]
<b>tell</b> [tel]	розказувати	<b>told</b> [təʊld]	<b>told</b> [təʊld]
<b>think</b> [θɪŋk]	думати	<b>thought</b> [θɔ:t]	<b>thought</b> [θɔ:t]
<b>understand</b> [ˈʌndəˈstænd]	розуміти	<b>understood</b> [ˈʌndəˈstʊd]	<b>understood</b> [ˈʌndəˈstʊd]
<b>write</b> [raɪt]	писати	<b>wrote</b> [rəʊt]	<b>written</b> [ˈrɪtn]

## APPENDIX 2

### SUFFIXES AND TERM-ELEMENTS

<p><b>NOUN:</b></p> <ul style="list-style-type: none"> <li>-age (denotes condition or phenomena)</li> <li>-algia (pain)</li> <li>-ance, -ence (denote condition or phenomena)</li> <li>-er, -or (one who)</li> <li>-ia, -iasis (condition, process)</li> <li>-ian (specialist)</li> <li>-ion (-ation, -tion, -ssion) (denote condition or phenomena)</li> <li>-itis (inflammation)</li> <li>-(i)ty (denotes condition or phenomena)</li> <li>-ist (specialist)</li> <li>-logy (study of)</li> <li>-ment (denotes condition or phenomena)</li> </ul>	<p><b>ADJECTIVE:</b></p> <ul style="list-style-type: none"> <li>-able (-ible)</li> <li>-al (pertaining to)</li> <li>-ant (-ent)</li> <li>-ar</li> <li>-ary (-ory, -ery)</li> <li>-ful (full of; characterized by; tending to; able to)</li> <li>-ic (pertaining to)</li> <li>-ive (pertaining to)</li> <li>-less (without)</li> <li>-ous (pertaining to)</li> <li>-y</li> </ul>
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<b>-ness</b> (denotes condition or phenomena) <b>-osis</b> (abnormal condition) <b>-th</b> (denotes condition or phenomena) <b>-tomy, -otomy</b> (cut into; incision; section) <b>-ure</b> (denotes condition or phenomena)	<b>ADVERB:</b> <b>-ly</b>  <b>VERB:</b> <b>-ate</b> <b>-ize (-ise)</b> <b>-fy</b>
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### APPENDIX 3

#### TERM ELEMENTS OF GREEK AND LATIN ORIGIN GREEK, LATIN, ENGLISH AND UKRAINIAN EQUIVALENTS

Greek	Latin	English	Ukrainian
aden/o	<i>glandula, ae f</i>	gland	залоза
adeno	<i>tonsilla, ae f</i>	tonsil	мигдалик
adipo	<i>adeps, adipis m</i>	fat	жир
angi/o	<i>vas, vasis n</i>	vessel	судина
alg/o	<i>dolor, oris m</i>	pain	біль
arthr/o	<i>articulatio, onis f</i>	joint	суглоб
-carcin	<i>cancer, cri m</i>	ancer	рак
cardi/o	<i>cor, cordis n</i>	heart	серце
crino-	<i>separo, are;</i> <i>secreno, ere</i>	to secrete	виділяти
cryo	<i>frigidity, atis f</i>	chill; cold	холод
ctino	<i>findere; separare</i>	to cleave; to divide	розділяти
cyt/o	<i>cellula, ae f</i>	cell	клітина
dermo-	<i>cutis, is f</i>	skin	шкіра
dia-	<i>trans</i>	through	через, крізь
diastole	<i>dilatation, onis f</i>	dilatation	розширення
echo	<i>sonus</i>	sound	звук
ectom-	<i>excisio, onis f</i>	excision	вирізання
-emia	<i>status sanguinis</i>	blood condition	стан крові
encephalo	<i>cerebrum, i n</i>	brain	головний мозок
endo-	<i>in, internus, a, um</i>	within, inner	внутрішній
enter-	<i>intestinum tenue</i>	small intestine	тонка кишка
epi-	<i>super; supra</i>	above	над
erythr/o	<i>rubber, bra, brum</i>	red	червоний
glos-	<i>lingua, ae f</i>	tongue	язик
h(a)em/o	<i>sanguis, inis m</i>	blood	кров
horm-	<i>stimulo, are</i>	to stimulate	стимулювати
hyper-	<i>super</i>	above	над
hypo-	<i>sub, infra</i>	under, below	під
immuno-	<i>immunis, e</i>	protection	захист
leuk/o	<i>albus, a, um</i>	white	білий
lith-	<i>calculus, i m</i>	stone, calculus	камінь, конкремент
-lysis	<i>dissolutio, onis f</i>	dissolution	розчинення
-megaly	<i>cresco, ere</i>	to enlarge	збільшувати; рости
meningo	<i>tunica, ae f</i>	membrane	оболонка
mono-	<i>unus, a, um</i>	one	один, єдиний
myc/o	<i>fungus, i m</i>	fungus, mold	грибок
myos	<i>musculus, i m</i>	muscle	м'яз
neur/o	<i>nervus, i m</i>	nerve	нерв
nephro	<i>ren, renis, m</i>	kidney	нирка

-oma	tumor, oris, <i>m</i>	swelling, tumour	пухлина
oo-	ovun, <i>i n</i>	egg	яйце
-osis	status aegrotus	abnormal condition	хворий
para-	proxime	near	близько
path-	morbus, <i>i m</i>	disease, illness	хвороба
peri-	circum	around	навколо
phag/o	edo, ere	to eat	поїдати
pharmacy/o	medicamentum, <i>i n</i>	medication, drug	лікарський препарат
phleb/o	vena, <i>ae, f</i>	vein	вена
pneum/o	pulmo, onis <i>m</i>	lung	легеня
poly-	multum	many	багато
-ptosis	cadentio, onis <i>f</i>	drooping, prolapse	опущення; спадаючий
py/o	pus, puris <i>n</i>	pus	гній
rhino	nasus, <i>i m</i>	nose	ніс
-rrhoea	fluctio, onis <i>f</i>	flow	витікання
scopo-	inspicio, ere	visual examination	обстеження
somato-	corpus, oris <i>m</i>	body	тіло
sten(osis)	angustus, a, um	narrow, tight	вужький
systole	contractio, onis <i>f</i>	contraction	скорочення
tachy-	celer, eris, ere	fast, quick	швидкий
thromb/o	claustrum, <i>i n</i>	clot	згусток
tom-	seco, are	to cut	різати
tox/o	venenum, <i>i n</i>	poison	отрута
-trophy	nutritio, onis <i>f</i>	nourishment	живлення
ur/o	urina, <i>ae f</i>	urine	сеча

## КОРОТКИЙ ДОВІДНИК З ПРАВИЛ СЛОВОТВОРЕННЯ

В англійській мові нові слова можуть утворюватися за допомогою таких способів:

### 1. Складання, наприклад:

*head* – голова + *ache* – біль = *headache* – головний біль

*eye* – око + *ball* – куля, кулька = *eyeball* – очне яблуко

У складних словах наголошується перший елемент, наприклад: **headache** [ˈhedeɪk], **eyeball** [ˈaɪbɔːl].

Перший з двох поспіль іменників може виступати означенням та перекладатися українською як прикметник чи іменник родового відмінка: *blood cells* – клітини крові, кров'яні клітини; *brain damage* – ушкодження мозку.

### 2. Афіксації, тобто за допомогою суфіксів та префіксів.

За допомогою суфіксів **-er**, **-or** утворюються іменники на позначення особи – виконавця дії чи представника професії: *to research* – досліджувати + *er* = **researcher** – дослідник; *to build* – будувати + *er* = **builder** – будівельник; *to found* – засновувати + *er* = **founder** – засновник.

За допомогою суфіксів **-er**, **-or** утворюються іменники на позначення інструмента, приладу, наприклад: *to retract* – відводити назад, відтягувати + **or** = **retractor** – ранорозширювач, ретрактор; *to calculate* – вираховувати, підраховувати + **or** = **calculator** – калькулятор.

Префікс **re-** означає повторення дії: *rewrite* – переписати, *rebuild* – перебудувати; *redesign* – переконструювати; зворотню дію: *to act* – діяти – *to react* протидіяти, чинити опір. Суфікси і префікси у таких словах, як правило, ненаголошені.

### Найуживаніші суфікси англійської мови:

Суфікси іменників: **-age**, **-ance(ence)**, **-ancy(ency)**, **-er(or)**, **-ian**, **-ing**, **-ion**, **-(i)ty**, **-ist**, **-ist**, **-mess**, **-ness** –**th**, **-ure**, **-y**.

Суфікси прикметників: **-able(ible), -al, -ant(ent), -ar, -ary(ory, ery), -ful, -ian, -ic(al), -ing, -ish, -ive, -less, -ous, -y.**

Суфікси числівників: **-th, -teen, -ty.**

Суфікси прислівників: **-ly.**

Суфікси дієслів: **-ate, -ize(ise), -y, -en, -fy.**

#### Основні префікси:

**a-, ab-, be-, com-, con-, de-, dis-, ex-, il-, im-, in-, inter-, intra-, it-, over-, per-, pre-, re-, sub-, un-.**

#### Префікси із заперечувальним значенням:

<b>un-</b>	uncomfortable	незручний
	unlock	відчиняти
<b>in-</b>	indirect	непрямий
<b>il-</b>	illogical	нелогічний
<b>ir-</b>	irregular	неправильний
<b>im-</b>	impossible	неможливий
<b>dis-</b>	dislike	не любити
	dishonest	нечесний
<b>mis-</b>	misunderstand	неправильно зрозуміти

#### Префікси з різним значенням:

<b>re-</b>	rewrite	переписати
<b>over-</b>	overwork	перетрудитися
<b>under-</b>	underpay	недоплачувати
<b>post-</b>	postwar	повоєнний
<b>pre-</b>	pre-war	довоєнний
<b>counter-</b>	counteraction	протидія
<b>ex-</b>	ex-minister	колишній міністр

3. **Конверсії** – коли слова пишуться та вимовляються однаково, але належать до різних частин мови, і, відповідно, виконують різні синтаксичні функції: *to work – працювати, work – робота; to help – допомагати, help – допомога; drop – крапля, to drop – крапати, стікати краплями.*

## PRACTICAL GRAMMAR GUIDE (КОРОТКИЙ ГРАМАТИЧНИЙ ДОВІДНИК)

### ІМЕННИК (NOUN)

Іменник є частиною мови, що позначає назви предметів, людей, тварин, рослин, речовин і понять і відповідає на питання: хто? або що? Іменники мають два числа: однину (Singular) і множину (Plural). В англійській мові в однині іменник не має ніяких особливостей та спеціальних показників. Форма множини більшості іменників утворюється за допомогою додавання закінчення **-s (-es)**:

Таблиця 1.

Іменники, що мають в однині закінчення:	Закінчення у множині:	Приклади
глухі та дзвінки приголосні та голосні	-s	doctor – doctors student – students uncle – uncles
-s, -ss, -x, -ch, -sh	-es	research – researches box – boxes
-y з попередньою голосною	-s	day – days
-y з попередньою приголосною	-y → -i + -es	body – bodies

		remedy – remedies
-f, -fe	-f, -fe → v + -es	life – lives

Ряд іменників мають особливі форми множини, наприклад: child – children, foot – feet, man – men.

### Відмінки (CASES)

Іменники в англійській мові мають два відмінки: загальний (Common Case) і присвійний (Possesive Case). Загальний відмінок в англійській мові не має жодного показника. Він є словниковою формою іменника. Іменник у загальному відмінку може виконувати у реченні функції підмета, іменної частини складеного присудка, додатка, означення й обставини. Присвійний відмінок передає значення належності, яка в українській мові передається родовим відмінком. Іменник у присвійному відмінку слугує означенням до іншого іменника: a man's leg – нога людини, cow's milk – коров'яче молоко. Іменник у присвійному відмінку має закінчення -'s, а якщо іменник у множині закінчується на -s, то додається лише апостроф ('): student's book; students' books.

### АРТИКЛЬ (ARTICLE)

АРТИКЛІ: неозначений (**a/an**) та означений (**the**) входять до так званої групи означень іменника: *Give me a pen.* Тут мова йде про яку-небудь ручку. *There is a pen.* Тут мова йде саме про ручку, а не інший предмет. *Give me the pen.* У цьому випадку йдеться про певну ручку. *There is the pen.* (той хто слухає/говорить знає, про яку ручку йде мова); (**an = a** (перед словом, що починається на голосний **an apple, an idea**). Неозначений артикль не вживається з іменниками у множині, а також з необчислюваними іменниками.

Таблиця 2.

Іменники	a/an	the	no article
Обчислювані в однині	a tree an apple	the apple the tree	-
Необчислювані в множині		the trees the apples	trees apples
Необчислювані		the sugar the water (певна кількість)	sugar water

Необчислювані іменники **news, advice, weather, progress, information, luggage** з неозначеним артиклем **a** не вживаються. *This is welcome news (advice).* – Це приємні новини (слушна порада). *I like cold weather.* – Мені подобається прохолодна погода.

Зверніть увагу на те, як виражається значення обчислюваності іменників, коли той, хто говорить, має потребу це підкреслити: *Here is an interesting item (piece) of news (information).* – Ось одна цікава новина (інформація). *Give me a bit (word) of advice.* – Дайте мені хоча б одну пораду. *How many pieces of luggage have you got?* – Скільки у вас місць у багажу?

Означений артикль **the** вживається перед назвами:

Таблиця 3.

Готелів	the Europa Hotel, the Ambassador Hotel
Суден	the Queen Elizabeth, the Titanic
Каналів	the Suez
Річок	the Dniper River, the Thames
Морів, океанів	the Black Sea, the Pacific Ocean
Груп островів	the Canaries (Canary Islands)
Гірських пасм	the Alps, the Caucasus (Mountains)
Частин світу	the South
Країн, областей, що становлять групове поняття	the United Kingdom, the United States

Артикль **the** не вживається перед:

Іменами людей (кличками тварин)	Mary, John Carlston, Spot
Назвами міст, вулиць, майданів, вокзалів	Atlantic City, London, Kreshchatik Street, Trafalgar Square, Times Square, Victoria Station, University Station
Назвами озер, окремих островів чи гір	Lake Ontario, Chomolungma, Mount Everest
Материків	Europe, Australia

Порівняйте:

Shevchenko's birthplace (без артикля)

місце народження Шевченка

Tolstoy's library

бібліотека, котра належала Толстому

the Shevchenko museum (з артиклем)

музей Шевченка

the Tolstoy library

бібліотека імені Толстого

У деяких виразах та словосполученнях артикль відсутній, наприклад: after breakfast, go by plane, on Monday, according to schedule.

Іменники після слів **kind, type, sort, style** вживаються без артикля: *What kind of person is she? What sort of thing(s) did you mean?*

Артиклі не вживаються перед назвами хвороб, наук: **gastritis, Anatomy**.

Артиклі не вживаються, коли власним іменам передують іменники, які означають звання: **Dr. Smith, Prof. Murphy**.

## ЗАЙМЕННИКИ (PRONOUNS)

Займенник – це повнозначна частина мови, що позначає предмет або ознаку предмета, але не називає його. Займенники поділяються на кілька груп, кожна з яких має свої власні граматичні характеристики: *we* – ми, *who* – хто, *that* – той, *some* – трохи тощо.

Займенник зазвичай уживається в реченні замість іменника або прикметника, іноді замість числівника й прислівника.

До **особових займенників (Personal Pronouns)** належать:

*Таблиця 4.*

	Називний відмінок	Об'єктний відмінок
Однина	I я he він she вона it воно, він, вона	me мені, мене him йому, його her їй, її it йому/їй, його/її
Множина	we ми you ви, ти, Ви they вони	us нам, нас you вам, вас them їм, їх



Займенник “I” завжди пишеться з великої літери.

Займенники he/she уживаються щодо істот; it – щодо неістот: неживих предметів, абстрактних понять і тварин.

Займенник it часто використовується як формальний підмет у безособових реченнях, у яких ідеться про погоду, час, відстань і різні виміри. *It's raining* . – *Іде дощ. It's very cold outside* . – *На вулиці дуже холодно. It's five o'clock* . – *Зараз п'ята година. It's forty degrees above zero* . – *Зараз сорок градусів тепла*.

**Присвійні займенники (Possessive Pronouns)** в англійській мові вживаються набагато частіше, ніж в українській мові, і мають дві форми: одна використовується як прикметник (при іменнику), інша (абсолютна) – як іменник (незалежно).

Таблиця 5.

Форма	Особові	Присвійні	Абсолютна форма
Однина	I he she it	my his her its	mine his hers its
Множина	we you they	our your their	ours yours theirs

Присвійні займенники-означення вживаються як означення при іменнику. Присвійні займенники з іменниками вживаються у функції підмета, додатка або іменної частини присудка (за відсутності іменника): *His thoughtful grey eyes seemed to see everything* . – *Його задумливі сірі очі, здається, бачили все, що відбувалося довкола. This is my test paper, but where is yours?* – *Це моє тестове завдання, а де твоє? My problems are no business of yours* . – *Мої проблеми вас не стосуються*.

### Вказівні займенники (Demonstrative Pronouns)

Таблиця 6.

Однина	Множина
this – цей, ця, це that – той, та, те	these – ці those – ті

До вказівних займенників також належать **such** і **so**.

У загальному випадку займенник **this** указує на більшу наближеність відповідного предмета до мовця, ніж займенник **that**, що відповідає смислового розходженню між словами “цей” і “той”. *Take this book and I'll take that one* . – *Візьміть цю книгу, а я візьму ту*. Займенник **that** вказує на особу, поняття, подію, предмет віддалені в часі або в просторі. Займенник **that** може використовуватися як слово-замінник, щоб уникнути повторення того самого іменника (з означеним артиклем): *The climate here is like that of France* . – *Цей клімат схожий на клімат Франції. Do not be one of those who can do anything* . – *Не будьте одним з тих, хто вміє робити все*.

### Питальні займенники (Interrogative Pronouns)

До питальних займенників належать: **who, whom** – хто, кого, кому; **whose** – чий; **which** – який, котрий; **what** – що, який; **when** – коли; **where** – де, куди; **why** – чому; **how** – як.

Займенник **who** виступає у функції іменника, займенник **whom** – це об'єктна форма займенника who, що використовується переважно в письмовому мовленні. У сучасній англійській мові спостерігається тенденція до вживання єдиної форми займенника who у будь-якій позиції.

Займенники **what, which** і **whose** уживаються як у ролі іменника, так і в ролі прикметника й займенника. Займенники **when, where, why** і **how** використовуються як прислівники. Якщо займенник **who** або **what** є підметом, то він узгоджується з дієсловом в однині: *What is it? – Що це? What is he? – Хто він за професією? Who has just come? – Хто щойно прийшов? But what are they? – Але що вони за люди?*

Якщо займенник **who** або **what** ставить запитання до додатка, то дієслово має форму однини або множини залежно від числа підмета: *Who were his friends? – Mark and John. – Хто були його друзями? – Марк і Джон. What responsibilities and obligations do you suggest during the first year? – За що я відповідатиму та які обов'язки матиму протягом першого року роботи?*

Як питальні займенники-прикметники уживаються **which** і **what**. Займеннику **which** надається перевага, якщо мовець припускає вибір з обмеженої кількості можливостей, займенник **what** вживається в ситуації необмеженого вибору: *I'm nearly out of petrol. – Which grade do you need? – Бензин у мене майже закінчився. – Який бензин вам потрібен? What/which measures are effective to prevent the development of infectious diseases? – Які заходи є ефективними для попередження інфекційних хвороб?*

### Відносні займенники (Relative Pronouns).

Відносні займенники вводять означальні підрядні речення. Як відносні займенники в англійській мові використовуються питальні займенники, а також займенник **that**.

До відносних займенників належать: **who** – хто, що; **whose** – чий; **which** – який, котрий; **what** – що, який, котрий; **when** – коли; **where** – де, куди; **why** – чому; **how** – як.

Відносний займенник **who** може стосуватися тільки людей, займенник **which** – тільки неживих об'єктів і тварин. Займенник **that** може стосуватися як тих, так й інших. Займенник **which**, на відміну від інших відносних займенників, може стосуватися не одного іменника, а цілого речення.

### ПРИКМЕТНИК (ADJECTIVE)

Прикметник – це повнозначна частина мови, що позначає ознаку предмета. За значенням прикметники бувають якісними (*large* – великий, *small* – маленький, *heavy* – важкий, *brave* – хоробрий) і відносними (*wooden* – дерев'яний, *central* – центральний) тощо.

В англійській мові, як і в українській, прикметники утворюють два ступені порівняння: вищий (*deeper* – глибший, *more interesting* – цікавіший) і найвищий (*the biggest* – найбільший, *the most interesting* – найцікавіший). При цьому необхідно пам'ятати, що відносні прикметники не мають ступенів порівняння й не сполучаються із прислівником *very* (дуже).

### Вищий ступінь порівняння прикметників (Comparative Degree).

Вищий ступінь прикметників в англійській мові може утворюватися синтетично (додаванням суфікса *-er*) або аналітично (за допомогою конструкції зі словом *more*).

1. Синтетично утворюють вищий ступінь односкладові прикметники (крім *right* і *wrong*), а також частина двоскладових прикметників (усі, що закінчуються на *-y*, а також прикметники *clever, narrow, quiet, simple*), наприклад:

Таблиця 7.

Нейтральний ступінь (Positive)	Вищий ступінь (Comparative)
deep – глибокий	deeper – глибший
hard – важкий	harder – важчий
big – великий	bigger – більший
simple – простий	simpler – простіший
fat – жирний	fatter – жирніший
easy – легкий	easier – легший
narrow – вузький	narrower – вужчий

2. Багато двоскладових прикметників можуть утворювати вищий ступінь як синтетично, так і аналітично, наприклад: *common* (розповсюджений) – *commoner / more common* (більш розповсюджений); *polite* (чемний) – *politer/more polite* (більш чемний).

3. Тільки аналітично вищий ступінь утворюють двоскладові прикметники, що закінчуються на *-ing, -ed, -ful* і *-less*, а також прикметники, що складаються із трьох або більше складів. У деяких випадках спосіб утворення вищого ступеня двоскладових прикметників слід встановлювати за словником, наприклад: *eager* (енергійний) – *more eager* (енергійніший) *intelligent* (розумний) – *more intelligent* (розумніший).

4. Для позначення спадання ступеня прояву якості замість займенника **more** використовується займенник **less**, наприклад: *less interesting* – менш цікавий, *less expensive* – менш дорогий.

5. Прикметник у вищому ступені може мати при собі уточнюючі слова (означальні займенники, прислівники) **much, many** (перед **more** + іменник у множині), **far, a lot, lots** – набагато, значно, **any** – скільки-небудь, **rather** – досить, **a little, a bit** – трохи, **even, all the** – ще, **any the** – ще скільки-небудь, **none the** – ще анітрохи не. Слова *any, no, a bit* і *a lot*, як правило, не використовуються при прикметниках у вищому ступені, що мають при собі іменники.

6. Синтетична форма вищого ступеня не використовується, якщо порівнюються дві можливі характеристики того самого предмета: *She is more nice than wise.* – Вона скоріше мила, ніж розумна.

7. Кілька прикметників утворюють вищий ступінь від інших коренів: *good* – *better*; *little* – *less*; *bad* – *worse*; *old* – *elder*; *much, many* – *more*; *far* – *farther, further*.

### Найвищий ступінь порівняння прикметників (Superlative Degree)

Найвищий ступінь прикметників в англійській мові може утворюватися синтетично (додаванням суфікса **-est**) або аналітично (за допомогою конструкції зі словом **most**).

1. Синтетично утворюють найвищий ступінь односкладові прикметники (крім **right** і **wrong**), а також частина двоскладових прикметників (усі, що закінчуються на *-y*, а також прикметники **clever, narrow, quiet, simple**), наприклад:

Таблиця 8.

Нейтральний ступінь (Positive)	Найвищий ступінь (Superlative)
<i>deep</i> – глибокий	<i>the deepest</i> – найглибший
<i>hard</i> – важкий	<i>the hardest</i> – найважчий
<i>big</i> – великий	<i>the biggest</i> – найбільший
<i>thin</i> – тонкий	<i>the thinnest</i> – найтонший
<i>lovely</i> – чарівний	<i>the loveliest</i> – найчарівніший

2. Багато двоскладових прикметників можуть утворювати найвищий ступінь як синтетично, так і аналітично, наприклад: *pleasant* (приємний) – *the pleasantest/the most pleasant* (найприємніший), *severe* (суворий) – *the severest/the most severe* (найсуворіший).

3. Тільки аналітично утворюють найвищий ступінь двоскладові прикметники, що закінчуються на **-ing, -ed, -ful** і **-less**, а також прикметники, що складаються із трьох або більше складів.

Таблиця 9.

Нейтральний ступінь (Positive)	Найвищий ступінь (Superlative)
<i>interesting</i> – цікавий	<i>(the) most interesting</i> – найцікавіший
<i>boring</i> – нудний	<i>the most boring</i> – найнудніший

4. Кілька прикметників утворюють найвищий ступінь від інших коренів або мають кілька форм найвищого ступеня:

Таблиця 10.

Нейтральний ступінь (Positive)	Найвищий ступінь (Superlative)
good – добрий	(the) best – найкращий
bad – поганий	(the) worst – найгірший
much, many – багато	(the) most – найбільший
little – маленький, мало	(the) least – найменший
old – старий	(the) oldest – найстаріший
	(the) eldest – найстарший
far – віддалений, дальній	(the) farthest – найвіддаленіший
	(the) furthest – найдальший

5. Прикметники в найвищому ступені, як правило, уживаються з означеним артиклем **the** або присвійним займенником. Без артикля вживаються прикметники в найвищому ступені, якщо порівнюється ступінь прояву якої-небудь характеристики того самого предмета в різних ситуаціях, наприклад: *She feels best when she's taken a bath.* – Вона почуває себе найкраще після ванни.

### ПОРЯДОК СЛІВ У РЕЧЕННІ.

На відміну від української мови, порядок слів в англomовному реченні строго фіксований, оскільки є одним з основних засобів вираження відношення між словами. У англійській мові відділяють чотири типи речень:

Розповідне (стверджувальне речення): *Sure, I will help you with your exams.*

Заперечне речення: *I have not heard about this before.*

Запитальне речення: *When did you graduate from the University?*

Наказове речення: *Send a runner for a new tray of instruments.*

#### Розповідні речення (Declarative Sentences).

Особливістю англійського речення у порівнянні з українським розповідним реченням є сталий порядок слів, тобто перше місце посідає підмет, друге – присудок, третє – додаток, четверте – обставина.

Розповідне речення в англійській мові характеризується прямим порядком слів (direct word order), при якому підмет стоїть перед присудком, а додаток – за присудком. Обставина може займати позицію як в абсолютному початку, так і в абсолютному кінці речення.

Таблиця 11.

1. Підмет	2. Присудок	3. Додаток	4. Обставина
<b>The teacher</b> Викладач	<b>asks</b> запитує	<b>the student</b> студента	<b>at the lesson.</b> на занятті.
<b>The student</b> Студент	<b>asks</b> запитує	<b>the teacher</b> викладача	<b>at the lesson.</b> На занятті.

#### Питальні речення (Interrogative sentences)

##### Загальні запитання (General Questions).

Загальне запитання – це запитання до всього речення, на яке відповідь вимагає зворотного порядку слів. При цьому допоміжне (чи модальне) дієслово виноситься наперед (на нульове місце), потім ставиться підмет. Загальне запитання потребує відповіді "так" або "ні", і, як правило, перекладається з часткою *чи*. Воно вимовляється з підвищеною інтонацією в кінці речення: *Does she speak English?* – Чи говорить вона англійською мовою? *Yes, she does.* – Так. *Did he get a certificate of degree in 2001?* – Чи він отримав диплом у 2001 році? *No, he didn't.* – Ні.

##### Спеціальні запитання (Special Questions).

Спеціальні запитання – це запитання до окремих членів речення. Вони завжди починаються питальним словом і вимовляються зі спадною інтонацією.

### Спеціальні запитання до підмета та його означення

1. Запитання, що стосуються підмета, починаються питальними словами *who хто; what що*, які набувають властивості підмета і потребують прямого порядку слів: *Who speaks English? – She speaks English. What works well? – The engine works well.*

2. Запитання, котрі ставлять до означення підмета, починаються з питальних слів *whose чий, which, what який* і також потребують прямого порядку слів: *Whose sister studies at the institute? – Чия сестра навчається в інституті? What patients are in this dental surgery? – Які хворі перебувають зараз у цьому стоматологічному кабінеті?*

### Спеціальні запитання до інших членів речення.

Спеціальні запитання, котрі ставлять до другорядних членів речення, починаються з питальних слів **what** що, **whom** кого, кому, **when** коли, **where** де, куди, **why** чому, **how** як, **how many(much)** скільки і потребують, як і загальні запитання, зворотного порядку слів. Проте, на відміну від загальних, у спеціальних запитаннях перед допоміжним (або модальним) дієсловом стоїть питальне слово чи група слів: *What does he read at home? When does he read newspapers?*

### Побудова розповідних і питальних речень

Таблиця 12.

Місце члена речення	0	0	1	2	3	4
Види речень і типи запитань	Питальне слово до групи присудка	Допоміжне дієслово	Підмет	Присудок	Додаток	Обставина місця, часу.
Стверджувальна форма (прямий порядок)			My friend	reads	books	at home in the evening.
Спеціальне запитання до групи підмета (прямий порядок)			Who Whose friend	reads reads	books books	at home in the evening? at home in the evening
Загальне запитання (зворотний порядок)		Does	my friend	read	books	at home in the evening?
Спеціальні запитання до інших членів речення (зворотний порядок)	What When Where	does does does	my friend my friend my friend	read read read	 books books	at home in the evening? at home? in the evening?

### СПОСОБИ ВИЗНАЧЕННЯ ПРИСУДКА В АНГЛІЙСЬКОМУ РЕЧЕННІ

Присудок в англійському реченні можна визначити за такими ознаками:

а) за позицією у реченні (слідuje після підмета, вираженого іменником, займенником): *Physicians examine patients.*

б) за формальними граматичними показниками, наприклад, закінчення -s(-es) третьої особи однини теперішнього часу; -ed (-d) минулого часу групи Simple: *My sister goes to the institute in the morning. The surgeon operated on the patient yesterday.*

в) за допоміжними дієсловами **do (does, did), to be, to have, shall, will, should, would**: *He has come in time. He was diagnosed bronchitis.*

г) за модальними дієсловами: **can (could), may (might), must, should, ought to, need**: *The doctor could diagnose pneumonia.*

д) за прислівниками, котрі визначають дієслово: *These surgeons always operate successfully.*

### НЕОЗНАЧЕНО-ОСОБОВІ РЕЧЕННЯ

В англійській мові неозначено-особове речення складається з формального підмета *it* (*one, they*) та узгодженого з ним присудка. (Із займенником *it* завжди виступає дієслово пасивного стану.)

*They know that he works here.*

*It is known that he works here.*

Відомо, що він працює тут.

*One knows that he works here.*

### Безособові речення.

Якщо в українському реченні немає підмета, то таке речення називається безособовим. В англійських безособових реченнях, які позначають явища природи, час, відстань чи відчуття, займенник *it* вживається без будь-якого значення, як формальний підмет. На українську мову підмет *it* не перекладається. Присудок англійського безособового речення звичайно складається з дієслова-зв'язки *to be* (будь-якого часу) та іменної частини, у ролі якої може виступати прикметник, іменник або числівник. *It is cold today.* – Сьогодні холодно. *It was autumn.* – Стояла осінь. *It will be warm.* – Буде тепло.

### ЗВОРОТ THERE + TO BE

Коли в центрі уваги того, хто говорить, знаходиться присудок, виражений дієсловами *бути, мати, перебувати, існувати*, тобто, коли йдеться про наявність або відсутність певного предмета, в англійській мові вживається зворот **there + to be**: *There are many foreign issues in our library.* – В нашій бібліотеці багато іноземних видань.

У такому звороті **there** втрачає своє основне значення **там**, а лише вказує, що підмет стоїть після присудка, який перебуває в центрі висловлювання. Переклад таких речень слід починати з обставини місця чи присудка. Після звороту **there is** перед іменником в однині вживається неозначений артикль, у множині артикль випускається. У цьому звороті дієслово **to be** вживається в особовій формі (**was, were, shall be, will be**): *There was a book on the table.* – На столі була книга. *There will be a new hospital in the village.* – У селищі буде нова лікарня.

У заперечній формі після звороту **there + to be**, як правило, вживається займенник **no**, тобто заперечення стосується іменника, а не дієслова, отже, **no** виключає вживання артикля. *There is no book on the table.* – На столі немає (жодної) книги.

### Примітка:

Заперечення **not** вживається у короткій відповіді та у тому разі, коли після звороту йдуть слова: **any, enough, many, much**. *There is not any book on the table.* – На столі немає (жодної) книги. *There is not enough (much) water in the glass.* – У склянці води не досить (небагато).

Щоб утворити питальну форму, треба дієслово **to be** у певній особовій формі відповідного часу поставити перед **there**. *Is there a book on the table?* – Чи є на столі книга?

1) У звороті **there + to be** дієслово **to be** узгоджується з наступним іменником: *There is a book and two pencils on the table.* – На столі книга і два олівці. *There are two pencils and a book on the table.* – На столі два олівці та книга.

2) У звороті **there + to be** замість дієслова **to be** можуть вживатися інші дієслова: **to lie** лежати; **to stand** стояти; **to live** жити; **to grow** рости; **to become** ставати: *There lives a doctor there.* – Там живе лікар.

3) Якщо слово **there** стоїть у кінці речення, то воно перекладається як обставина місця – **там**.

### ФОРМИ ДІЄСЛОВА FORMS OF THE VERB

Таблиця 13.

I	II	III	IV
Інфінітив Infinitive	Форма минулого часу Past Form	Дієприкметник минулого часу Participle II	Дієприкметник теперішнього часу Participle I
V	V <sub>2</sub>	V <sub>3</sub>	V <sub>ing</sub> (V <sub>4</sub> )
to work, to write	worked, wrote	worked, written	working, writing

### ЧАСИ ГРУПИ SIMPLE (INDEFINITE) PRESENT SIMPLE

**Значення форми.** Вживається для позначення звичної, регулярної чи повторюваної дії.

В українській мові відповідає дієслову теперішнього часу недоконаного виду. *The best students usually participate in Students' research societies.* – Найкращі студенти зазвичай беруть участь у роботі наукових студентських товариств. *The most sensitive sites are normally here.* – Тут знаходяться найчутливіші ділянки.

**Ознаки:** Дієслово у стверджувальному реченні вживається у формі інфінітива без частки **to**; а у 3-й особі однини має суфікс **-s (-es)**. *The nurses and doctor's assistants fulfil their duties carefully.* – Молодші медичні працівники ретельно виконують свої обов'язки. *Every day doctors make morning round at their departments.* – Кожного дня лікарі здійснюють ранковий обхід у своїх відділеннях. *He studies preclinical subjects as he is a second-year student.* – Він вивчає доклінічні предмети, оскільки він студент другого курсу.

**Обставини часу:** прислівники usually, always, sometimes, often, generally, normally, regularly, from time to time, every day (week, month), twice a week, seldom, ever, never зазвичай передують смислового дієслову, але вживаються після дієслова **to be**.

**Заперечні форми (Negative Sentences).**

Заперечні форми **Present Simple** утворюються з використанням допоміжного дієслова **do**, **does** та заперечної частки **not**, що йдуть після підмета перед присудком, вираженим смисловим дієсловом у формі інфінітива без частки **to**. Редукована форма заперечення **don't, doesn't**. Порядок слів у реченні прямий. *We (I, you, they) do not (don't) study the problem of asymmetry in animate and inanimate nature.* – Ми (я, ти, вони) не вивчаємо проблему асиметрії у живій та неживій природі. *He (she) does not (doesn't) work on the problem of artificial blood substitute.* – Він (вона) не працює над проблемою штучних замінників крові. *She does not have signs of the disease.* – У неї немає ознак цієї хвороби.

**Питальні форми (Interrogative Sentences)**

Питальні форми **Present Simple** утворюються з використанням допоміжного дієслова **do**, **does**, що, в залежності від типу запитання, знаходиться в абсолютному початку речення (загальні запитання) або йде після питального слова (спеціальні запитання); далі йде підмет, виражений іменником, займенником, словосполученням тощо, та смислове дієслово у формі інфінітива без частки **to**: *Do you study the adverse reactions of these medicines?* – Чи вивчає

ви побічні наслідки цих ліків? **Does he work on the problem of artificial blood substitutes?** – Чи він працює над проблемою штучних замінників крові? **What does Anatomy describe?** – Що вивчає анатомія? **What problem do you work on?** – Над якою проблемою ви працюєте? Запитання до підмета: **Who works on the problem of artificial blood substitute?** – Хто працює над проблемою штучних замінників крові?

## PAST SIMPLE

### Значення форми:

1. Вживається для позначення дій, що відбувалися в минулому та не мають зв'язку з теперішнім часом (діями), причому приналежність дії до минулого часу уточнюється **обставинами часу** (yesterday, last week, last year (month, time, etc.), two days ago, in 1990, on Monday, six years ago) чи іншою минулою дією: *Dr Nixon **taught** at Harvard Medical School last year.* – Доктор Ніксон викладав у Медичній школі Гарварду минулого року. *in 1796 English surgeon Edward Jenner **introduced** a vaccination for smallpox.* – У 1796 англійський хірург Едвард Дженнер запровадив вакцинацію проти віспи.

2. Вживається для опису низки послідовних дій в минулому: *The students **entered** the laboratory, **prepared** the instruments and materials, and **started** to carry out an experiment.* – Студенти увійшли до лабораторії, приготували інструменти та матеріали, та розпочали експеримент. *He **gave** a detailed description of the mechanism of protein synthesis, **illustrated** it with some photos and **answered** all our questions.* – Він представив детальний опис механізму синтезу білків, проілюстрував його фотографіями та відповів на усі наші питання.

3. Вживається для позначення повторюваних чи звичних дій, що відбувалися протягом якогось проміжку часу, не пов'язаного з теперішнім: *He **spent** four years in the university.* – Він провчився чотири роки в університеті. *From 1974 to 1978 Mr Cook often **attended** the Medical Scientific Society of the university he studied at.* – Протягом 1974–1978 містер Кук часто відвідував наукове медичне товариство університету, де він навчався.

### Ознаки:

Дієслово у стверджувальному реченні вживається у формі минулого часу (друга форма).

При цьому правильні дієслова мають суфіксом **-ed (to work – worked, to play – played, to study – studied)**, а неправильні дієслова мають строго зафіксовані та історично усталені форми (to begin – began, to build – built, to say – said).

### Заперечні форми (Negative Sentences).

Заперечні форми Past Simple утворюються з використанням допоміжного дієслова do у формі минулого часу – did та заперечної частки not, що йдуть після підмета перед присудком, вираженим смисловим дієсловом у формі інфінітива без частки to. Редукована форма заперечення – didn't. Порядок слів у реченні прямиий. *The drug **didn't** stop the spreading of inflammation.* – Ці ліки не зупинили поширення запалення. *Because of her unbalanced diet she **didn't** avoid dyspepsia.* – Через незбалансоване харчування вона не уникла диспепсії.

### Питальні форми (Interrogative Sentences)

Питальні форми Past Simple утворюються з використанням допоміжного дієслова did, що, в залежності від типу запитання, знаходиться в абсолютному початку речення (загальні запитання) або йде після питального слова (спеціальні запитання); далі йде підмет, виражений іменником, займенником, словосполученням тощо, та смислове дієслово у формі інфінітива без частки to. ***Did** Louis Pasteur **invent** pasteurization?* – Чи Луїс Пастер відкрив процес пастеризації? ***When did** Koch **identify** the causative agent of tuberculosis?* – Коли Кох виявив збудник туберкульозу? ***Why didn't** you **attend** the lecture on Physiology yesterday?* – Чому ви вчора не були на лекції з фізіології? Запитання до підмета: ***Who defended** the thesis last year?* – Хто захистив дисертацію минулого року?

## FUTURE SIMPLE

### Значення форми:



Вживається для позначення одноразової чи повторюваної дії в майбутньому. В українській мові відповідає дієслову майбутнього часу як доконаного, так і недоконаного виду.

#### Ознаки:

Допоміжне дієслово **shall** (для 1-ї особи) або **will** (для решти осіб) + смислове дієслово у формі інфінітива без частки **to**. *He will be free for most of the summer.* – Він буде вільний майже все літо. *I'll carry you bag.* – Я понесу вашу валізу. *I am not sure that your sister will arrive by 6.15 train.* – Я не впевнений, що ваша сестра прибуде поїздом о 6.15.

**Обставини часу:** **tomorrow** завтра, **next month (year)** наступного місяця (року), дата чи підрядне речення: *Tomorrow we shall meet Russian participants of the 7<sup>th</sup> Congress of Cardiological Societies in Helsinki.* – Завтра в Хельсінкі ми зустрінемо російських учасників 7-го Конгресу членів товариств кардіологів. *They will graduate from the university in 2015.* – Вони закінчать університет у 2015 році. *We shall tell him our address, when he comes.* – Ми скажемо йому нашу адресу, коли він прибуде.

#### Заперечні форми (Negative Sentences).

Заперечні форми **Future Simple** утворюються з використанням допоміжних дієслів **shall, will** та заперечної частки **not**, що йдуть після підмета перед присудком, вираженим смисловим дієсловом у формі інфінітива без частки **to**. Редуковані форма заперечення **will not – won't**, **shall not – shan't** вживаються здебільшого як розмовний варіант. Порядок слів у реченні прямий. *She has got a bit of headache, so she will not joint us for dinner.* – У неї трохи болить голова, тому вона не буде обідати з нами. *I'm afraid I'll not meet her tomorrow evening.* – На жаль, я не зустріну її завтра ввечері.

#### Питальні форми (Interrogative Sentences)

Питальні форми **Future Simple** утворюються з використанням допоміжних дієслів **shall, will**, що, в залежності від типу запитання, знаходяться в абсолютному початку речення (загальні запитання) або йдуть після питального слова (спеціальні запитання); далі йде підмет, виражений іменником, займенником, словосполученням тощо, та смислове дієслово у формі інфінітива без частки **to**. *Will they outline the present state of research in the field of immunology?* – Чи вони окреслять сучасний стан досліджень в галузі імунології? *When will your paper come out?* – Коли вийде ваша стаття? *Who will make the report on this problem?* – Хто робитиме доповідь з цієї проблеми?

## SIMPLE TENSES

Таблиця 14.

Affirmative sentences	Negative sentences	Interrogative sentences
Senior medical students <b>study</b> clinical subjects.	Junior medical students <b>do not study</b> clinical subjects.	<b>Do</b> junior medical students <b>study</b> clinical subjects? What subjects <b>do</b> junior medical students <b>study</b> ?
Robert Koch identified the causative agent of tuberculosis.	Medieval doctors <b>did not identify</b> the causative agent of tuberculosis.	<b>Did</b> Robert Koch <b>identify</b> the causative agent of tuberculosis? When <b>did</b> Robert Koch <b>identify</b> the causative agent of tuberculosis?
They <b>will graduate from</b> the university in 2015.	They <b>will not graduate from</b> the university in 2015.	<b>Will</b> they <b>graduate from</b> the university in 2015? When <b>will</b> they <b>graduate from</b> the university?

## ЧАСИ ГРУПИ CONTINUOUS

Усі часи **Continuous** позначають дію в її розвитку, протяжності, вказуючи на те, що ця дія має тимчасовий характер.

## PRESENT CONTINUOUS

### Значення форми:

1. Вживається для позначення тривалої, неперервної дії, що відбувається в момент мовлення або у певний відрізок теперішнього часу: *We are now looking for an optimal solution, since there is a choice.* – *Зараз ми шукаємо оптимальне рішення, оскільки у нас є вибір.*

2. Вживається для позначення майбутньої дії, коли є намір її здійснення або впевненість в її здійсненні: *They are leaving for London next week.* – *Вони приїжджають до Лондона наступного тижня.*

В українській мові відповідає дієслову теперішнього часу недоконаного виду.

### Ознака:

Дієслово **to be** у Present Simple (**am, are, is**) + смислове дієслово у формі дієприкметника теперішнього часу (Participle I).

**Обставини часу:** now, right now, at this moment, today.

*Dr. Smeeth is examining a patient now. Wait, please.* – *Доктор Сміт зараз оглядає пацієнта. Будь-ласка, зачекайте. Look, this substance is changing its color.* – *Погляньте, ця речовина змінює свій колір. We are visiting the Chicago's Museum of Science and Industry in two days.* – *Через два дні ми відвідаємо Чикагський музей науки та промисловості.*

## PAST CONTINUOUS

### Значення форми:

Вживається для вираження дії, що відбувалася в минулому в певний часовий інтервал, який позначається або обставиною часу, або іншою одночасною дією в минулому: *Susan Wheeler was working in the lab from 3 to 5 p.m. yesterday.* – *Учора Сюзан Вілер працювала в лабораторії з п'ятнадцятої до сімнадцятої години. Tom was reading out a data while Joan was writing it down.* – *Том зачитував вголос дані, а Джоан їх записувала. Також вживається для позначення перерваної, перепиненої дії: She was working in the lab when her sister came to see her.* – *Вона працювала в лабораторії, коли сестра зайшла побачити її. В українській мові підмет у Past Continuous відповідає дієслову минулого часу недоконаного виду.*

### Ознака:

Дієслово **to be** у Past Simple (**was, were**) + смислове дієслово у формі дієприкметника теперішнього часу (Participle I).

**Обставини часу:** from 6 till (to) 7, all day long, last Saturday, the whole day yesterday.

*Yesterday at noon he was making his report on preleukemic conditions.* – *Учора опівдні він робив доповідь про стани, що передують лейкемії. She was writing her research article when the phone rang.* – *Вона працювала над науковою статтею, коли задзвонив телефон. It was raining heavily and the ambulance was driving hardly seen through the mist.* – *Був сильний дощ, і машина швидкої допомоги їхала, ледве бачачи дорогу через туман.*

## FUTURE CONTINUOUS

### Значення форми:

Вживається для позначення тривалої дії, яка розпочнеться до певного моменту в майбутньому і буде тривати в цей момент: *At 10 a.m. tomorrow he will be having an exam.* – *Завтра о 10 він буде складати іспит. I shall be reading the whole day tomorrow.* – *Завтра я читатиму цілий день.*

В українській мові підмет у Future Continuous відповідає дієслову майбутнього часу недоконаного виду.

### Ознака:

Дієслово **to be** у Future Simple (**shall be, will be**) + смислове дієслово у формі дієприкметника теперішнього часу (Participle I).

**Обставини часу:** the next day, the whole day tomorrow, at 10 p.m.

*We shall be thinking about your proposal.* – Ми поміркуємо над вашою пропозицією. *I shall be waiting for you at 6 p.m. near the University.* – Я буду чекати тебе о 6 вечора біля університету.

**Future Continuous** також вживається для позначення запланованої дії: *I'll be going to the city later.* – Я поїду до міста пізніше.

### Заперечні форми (Negative Sentences).

Заперечні форми часів групи **Continuous** утворюються з використанням заперечної частки **not**, що йде після дієслова **to be**, вжитого в особовій формі та відповідному часі, перед смисловим дієсловом у формі Participle I. Редукована форма заперечення вживається здебільшого як розмовний варіант. Порядок слів у реченні прямиий. *Where is Stephen? He is not taking an interview.* – Де Стівен? Його немає на співбесіді (зараз). *She is not operating the computer, she is skipping through periodicals.* – Зараз вона не працює на комп'ютері, а проглядає періодику. *Sedatives were rather strong, but she was not sleeping yet.* – Хоча заспокійливі були досить сильними, вона все ще не спала. *The baby was not just aimlessly exercising its hands, it was trying to grasp a rattle.* – Немовля не просто безладно гралося своїми ручками, воно намагалося схопити брязкальце. *Yesterday I was't working at the library in the morning, I was outside the city at all.* - Учора я не працювала вранці у бібліотеці, мене взагалі не було в місті.

### Питальні форми (Interrogative Sentences)

Питальні форми **Continuous Tenses** утворюються з використанням відповідних форм дієслова **to be**, вжитого в особовій формі та відповідному часі, яке, в залежності від типу запитання, знаходиться або в абсолютному початку речення (загальні запитання) або йде після питального слова (спеціальні запитання); далі йде підмет, виражений іменником, займенником, словосполученням тощо, та смислове дієслово у формі дієприкметника теперішнього часу (**Participle I**). *Are you filling in case histories now?* - Ти заповняєш зараз історії хвороби? *Look! What are you doing here?* – Що ти тут робиш? *What is he looking for?* – Що він шукає? Запитання до підмета: *Who is waiting for me?* – Хто на мене чекає?

## CONTINUOUS TENSES

Таблиця 15.

Affirmative sentences	Negative sentences	Interrogative sentences
They are waiting for you now.	They are not waiting for you now.	Are they waiting for you now?
Yesterday at noon he was making his report on preleukemic conditions	Yesterday at noon he was not making his report on preleukemic conditions.	Was he making his report on preleukemic conditions at noon yesterday?
I shall be reading the whole day tomorrow.	I shall not be reading the whole day tomorrow.	Will you be reading the whole day tomorrow?

Деякі дієслова не вживаються в **Continuous Tenses**. Це так звані дієслова ментальної дії, емоційного та чуттєвого сприйняття: realize, believe, seem, forget, want, know, prefer, like, love, hate, see, hear, belong, mean, suppose, remember, understand. Ці дієслова вживаються лише в Simple чи Perfect Tenses.

## PERFECT TENSES

Усі часи групи **Perfect** позначають завершену дію, коли на певний момент часу (момент мовлення тощо) наявний факт здійсненої дії чи результат цієї дії.

## PRESENT PERFECT

**Значення форми:**

1) **Present Perfect** вживається, коли слід підкреслити результат певної дії, а не власне саму дію: *The scientists have discovered that the neutron has no electrical charge.* – Учені відкрили, що нейтрон не має електричного заряду;

2) для вираження дії, яка завершилась, але період часу, в який вона здійснювалась, ще триває: *I have known him all my life.* – Я знав його усе своє життя. *The students have always enjoyed his lectures.* – Студентам завжди подобалися його лекції;

3) для вираження дії, яка відбувалась в минулому аж до теперішнього моменту часу (часто з обставинами часу *lately, recently, for two hours (days, years), up to now, since*)

#### **Ознака:**

Допоміжне дієслово **to have** у Present Simple (1-а, 2-а особа, 3-я особа множини – **have**, 3-я особа однини – **has**) + смислове дієслово у формі дієприкметника минулого часу (Participle II).

**Обставини часу:** *ever, never, hardly ever, just, already, often, seldom, yet, for a long time, since, up to now.*

Кострукція **Present Perfect** в українській мові здебільшого відповідає дієслову доконаного виду. *We have just checked her with X-rays and echocardiograph.* – Ми щойно виконали їй рентген-обстеження та ехокардіографію. *He has worked for Liverpool's Dell Owen Hospital all his life.* – Він пропрацював у Делл Оуен госпіталі Ліверпуля усе своє життя.

### **PAST PERFECT**

#### **Значення форми:**

**Past Perfect** вживається для позначення дії, яка відбувалась або відбулася до певного моменту в минулому. Цей момент може бути виражений: 1) указівкою на момент часу за допомогою прийменника **by**: *I had already drawn up the plan of our research by Tuesday.* – До вівторка я вже окреслив план нашої дослідницької роботи. 2) з допомогою складнопідрядного речення, причому **Past Perfect** може вживатися як у головному, так і у підрядному реченні: *He had visited London before, and so the city was not new to him.* – Він бував у Лондоні раніше, тому це місто не було для нього новим, незнайомим. *The nurse had completed a series of routine medical tests before Dr. Berman came into the ward.* – Медсестра закінчила низку стандартних медичних тестів, коли доктор Берман увійшов до палати.

Кострукція **Past Perfect** в українській мові відповідає дієслову минулого часу доконаного виду.

#### **Ознака:**

Допоміжне дієслово **to have** у Past Simple (**had**) + смислове дієслово у формі дієприкметника минулого часу (Participle II).

**Обставини часу:** *by 5 o'clock, by the end of the year, by the time: He had sent his abstracts to the Congress by the 1<sup>st</sup> of June.* – Він надіслав тези для участі у конгресі до першого червня. *After I had finished the inspection of the new device I spoke to the engineer.* – Після того, як я закінчив огляд нового приладу, я звернувся до інженера.

### **FUTURE PERFECT**

**Future Perfect Tense** вживається не досить часто, як правило, коли мовець хоче підкреслити, що певна дія буде завершена до певного моменту в майбутньому: *Our doctor will have advised you before leave.* – Наш лікар проконсультує вас перед тим, як ви поїдете. *You will have received the schedule by 5 o'clock.* – Ви отримаєте розклад до п'ятої години.

Кострукція **Future Perfect** в українській мові відповідає дієслову майбутнього часу доконаного виду.

#### **Ознака:**

Допоміжне дієслово **to have** у Future Simple (**shall have, will have**) + смислове дієслово у формі дієприкметника минулого часу (Participle II).

**Обставини часу:** *till the end of the next week, to the 1<sup>st</sup> of April, by 6 o'clock: Mary Smith will have prepared her report on this problem by 1<sup>st</sup> of March. – Мери Сміт підготує доповідь з цієї проблеми до першого березня. I shall have written an autobiographical sketch by 2 p.m. - Я напишу автобіографію до 14 години.*

**Заперечні форми (Negative Sentences).**

Заперечні форми часів групи **Perfect** утворюються з використанням заперечної частки **not**, що йде після допоміжного дієслова **to have**, вжитого в особовій формі, перед смисловим дієсловом у формі Participle II. Редукована форма заперечення вживається здебільшого як розмовний варіант. Порядок слів у реченні прямий: *She has not participated in any congresses, conferences before. – Вона раніше не брала участі в якихось конгресах, конференціях. He had not visited London before, and so the city was new to him. – Раніше він не відвідував Лондон, тому тому це місто було для нього новим, незнайомим. You will have not received the schedule by 5 o'clock. – Ви не отримаєте розклад до п'ятої години.*

**Питальні форми (Interrogative Sentences)**

Питальні форми **Perfect Tenses** утворюються з використанням відповідних форм дієслова **to have**, вжитого в особовій формі та відповідному часі, яке, в залежності від типу запитання, знаходиться або в абсолютному початку речення (*загальні запитання*) або йде після питального слова (*спеціальні запитання*); далі йде підмет, виражений іменником, займенником, словосполученням тощо, та смислове дієслово у формі дієприкметника минулого часу (**Participle II**): *Have you ever met her before? – Чи раніше ви її колись зустрічали? Will you have received the schedule by 5 o'clock? – Чи отримаєте ви розклад до п'ятої години? Had the nurse completed a series of routine medical tests before Dr. Berman came into the ward. – Чи закінчила медсестра низку стандартних медичних тестів, коли доктор Берман увійшов до палати? What has he redone in this experiment? – Що він переробив у цьому експерименті? Запитання до підмета: Who has ever been to London? – Хто був у Лондоні?*

**PERFECT TENSES**

*Таблиця 16.*

	<b>Affirmative sentences</b>	<b>Negative sentences</b>	<b>Interrogative sentences</b>
P r e s e n t	We <b>have just checked</b> her with X-rays and echocardiograph.	We <b>have not checked</b> her with X-rays and echocardiograph.	<b>Have you checked</b> her with X-rays and echocardiograph. What <b>have you checked</b> her with Who <b>has checked</b> her?
P a s t	I <b>had already drawn up</b> the plan of our research by Tuesday.	I <b>had not drawn up</b> the plan of our research by Tuesday.	<b>Had you drawn up</b> the plan of our research by Tuesday? When <b>had you drawn up</b> the plan of our research by ? Who <b>had drawn up</b> the plan of our research by Tuesday?
F u t u r e	Mary Smith <b>will have prepared</b> her report on this problem by 1 <sup>st</sup> of March.	Mary Smith <b>will have not prepared</b> her report on this problem by 1 <sup>st</sup> of March.	<b>Will have</b> Mary Smith <b>prepared</b> her report on this problem by 1 <sup>st</sup> of March? When <b>will have</b> Mary Smith <b>prepared</b> her report on this problem? Who <b>will have prepared</b> a report on this problem?

## СТАН ДІЄСЛОВА

Стан – це форма дієслова, яка показує, чи є підмет речення діячем або об'єктом дії, вираженої присудком. В англійській мові є два стани: the Active Voice (активний стан) і the Passive Voice (пасивний стан).

Форма **активного стану** вживається в реченні, підметом якого є предмет, особа, що й виконує дію, описувану дієсловом (дієслівною формою). Форма **пасивного стану** вживається в реченні, підметом якого є предмет, на який спрямована дія, виражена дієсловом. Таким чином, об'єкт дієслова в активному стані відповідає підмету дієслова в пасивному стані. *Dr. Smith compiled this dictionary. – Доктор Сміт уклав цей словник. This dictionary was compiled by Dr. Smith. – Цей словник укладений доктором Смітом.*

У пасивному стані немає часів Future Continuous і Future Continuous-in-the-Past.

Пасивний стан вживається, коли виконавець дії очевидний чи важливий або коли дія чи її результат є цікавішими, ніж виконавець. Пасивний стан утворюється за допомогою дієслова to be у відповідному часі й дієприкметника минулого часу.

## PASSIVE VOICE

Таблиця 17.

	<b>Simple</b>	<b>Continuous</b>	<b>Perfect</b>
<b>Present</b>	am is + V <sub>3</sub> are	am is + being + V <sub>3</sub> are	has + been + V <sub>3</sub> have
<b>Past</b>	was + V <sub>3</sub> were	was + being + V <sub>3</sub> were	had + been + V <sub>3</sub>
<b>Future</b>	shall + be + V <sub>3</sub> will		shall + have + been + V <sub>3</sub> will
<b>Future-in-the-Past</b>	should + be + V <sub>3</sub> would		should + have + been + V <sub>3</sub> would

Питальна форма утворюється шляхом перенесення першого допоміжного дієслова на місце перед підметом. *Have the work been done by 3 p.m. today? When will the work been done? Whom was she asked about?* Заперечна форма утворюється за допомогою заперечення **not**, яке ставиться після першого допоміжного дієслова. *The work was not done last week. The work will not done tomorrow.*

Як і в українській мові, іменник, що виконує роль додатка в реченні активного стану, у реченні пасивного стану стає зазвичай підметом. Якщо у зворотах із пасивним станом указаний діяч, то в українській мові він позначається орудним відмінком, а в англійській йому передують прийменник by. Вживання часу в англійському пасивному стані принципово не відрізняється від його вживання в активному стані.

## ЗВЕДЕНА ТАБЛИЦЯ ЧАСІВ СТВЕРДЖУВАЛЬНОЇ ФОРМИ

Таблиця 18.

<b>Час</b>	<b>Present</b>	<b>Past</b>	<b>Future</b>
<b>Simple (Active Voice)</b>	V V <sub>s</sub>	V <sub>2</sub>	shall + V will
<b>Simple (Passive Voice)</b>	am is + V <sub>3</sub> are	was + V <sub>3</sub> were	shall + be + V <sub>3</sub> will

<b>Continuous (Active Voice)</b>	am is + V <sub>ing</sub> are	was + V <sub>ing</sub> were	shall + be + V <sub>ing</sub> will
<b>Continuous (Passive Voice)</b>	am is + being + V <sub>3</sub> are	was + being + V <sub>3</sub> were	—
<b>Perfect (Active Voice)</b>	have + V <sub>3</sub> has	had + V <sub>3</sub>	shall + have + V <sub>3</sub> Will
<b>Perfect (Passive Voice)</b>	have + been + V <sub>3</sub> has	had + been + V <sub>3</sub>	shall + have been + V <sub>3</sub> will

**ЗВЕДЕНА ТАБЛИЦЯ ПИТАЛЬНОЇ ФОРМИ  
INTERROGATIVE FORM**

*Таблиця 19.*

Tense	(1) Questioning word	(2) Auxiliary verb	(3) Subject	(4) Predicate	Example
<b>Present Simple</b> Tense, Active Voice	What	<b>do</b>	I, you, we they	<b>V</b> (study, write)	<b>Do you study?</b> Where <b>does</b> he <b>study</b> ?
		<b>does</b>	he, she, it		
<b>Past Simple</b> Tense, Active Voice	Where	<b>did</b>	I, he, she, it, you, we, they	<b>V</b> (study, write)	When <b>did</b> you <b>go</b> to the Academy?
<b>Future Simple</b> Tense, Active Voice	When	<b>shall</b>	I, we	<b>V</b> (study, write)	Where <b>will</b> they <b>go</b> tomorrow?
		<b>will</b>	he, she, it, you, they		
<b>Present Simple</b> Tense, Passive Voice	Why	<b>am</b>	I	<b>V<sub>3</sub></b> (studied, written)	Where <b>is</b> this hospital <b>built</b> ?
		<b>is</b>	he, she, it		
		<b>are</b>	you, we, they		
<b>Past Simple</b> Tense, Passive Voice	How	<b>was</b>	I, he, she, it	<b>V<sub>3</sub></b> (studied, written)	What medicine <b>was</b> your doctor <b>prescribed</b> ?
		<b>were</b>	you, we they		<b>Were</b> the patients <b>examined</b> ?
<b>Future Simple</b> Tense, Passive Voice	How many	<b>shall</b>	I, we	<b>be + V<sub>3</sub></b> (be studied, be written)	When <b>will</b> the polyclinic <b>be closed</b> ?
		<b>will</b>	he, she, it, you, they		
<b>Present Continuous</b> Tense, Active Voice	How much	<b>am</b>	I	<b>V<sub>ing</sub></b> (studying, writing)	What <b>is</b> he <b>writing</b> now?
		<b>is</b>	he, she, it		What <b>are</b> you <b>doing</b> ?
		<b>are</b>	you, we, they		
<b>Past Continuous</b> Tense, Active Voice		<b>was</b>	I, he, she, it	<b>V<sub>ing</sub></b> (studying, writing)	Where <b>was</b> a doctor <b>performing</b> on the operation?
		<b>were</b>	you, we they		
<b>Future Continuous</b> Tense, Active Voice		<b>shall</b>	I, we	<b>be + V<sub>ing</sub></b> (be studying, be writing)	What <b>will</b> you <b>be doing</b> at 3 p.m.?
		<b>will</b>	he, she, it, you, they		
<b>Present Continuous</b> Tense, Passive Voice		<b>am</b>	I	<b>being + V<sub>3</sub></b> (being studied, being written)	What hospital <b>is</b> your friend <b>being operated</b> on?
		<b>is</b>	he, she, it		

	<b>are</b>	you, we, they		
<b>Past Continuous</b> Tense, Passive Voice	<b>was</b>	I, he, she, it	<b>being + V<sub>3</sub></b> (being studied, being written)	When <b>was</b> the work <b>being fulfilled</b> ?
<b>Present Perfect</b> Tense, Active Voice	<b>were</b>	you, we they		
	<b>have</b>	I, you, we they	<b>V<sub>3</sub></b> (studied, written)	What <b>has</b> he <b>received</b> this week?
	<b>has</b>	he, she, it		
<b>Past Perfect Tense,</b> Active Voice	<b>had</b>	I, he, she, it, you, we, they	<b>V<sub>3</sub></b> (studied, written)	How many articles <b>had</b> the student <b>read</b> by 5 o'clock?
<b>Future Perfect</b> Tense, Active Voice	<b>shall</b>	I, we	<b>have + V<sub>3</sub></b> (have studied, have written)	What text <b>will</b> Helen <b>have translated</b> by 3 o'clock?
	<b>will</b>	he, she, it, you, they		
<b>Present Perfect</b> Tense, Passive Voice	<b>have</b>	I, you, we they	<b>been + V<sub>3</sub></b> (been studied, been written)	<b>Has</b> the text <b>been</b> <b>translated</b> today?
	<b>has</b>	he, she, it		
<b>Past Perfect Tense,</b> Passive Voice	<b>had</b>	I, he, she, it, you, we, they	<b>been + V<sub>3</sub></b> (been studied, been written)	Where <b>had</b> the patient <b>been examined</b> ?
<b>Future Perfect</b> Tense, Passive Voice	<b>shall</b>	I, we	<b>have + been + V<sub>3</sub></b> (have been studied, have been written)	When <b>will</b> the hospital <b>have been</b> <b>modernized</b> ?
	<b>will</b>	he, she, it, you, they		

### ДІЄСЛОВА TO BE ТА TO HAVE

В англійській мові існують особливі дієслова. Це – **to be**, **to have**. Вони мають не лише певні смислові значення **to be** – бути, **to have** – мати, але також служать допоміжними дієсловами для утворення різних часів і форм, дієслово виступає у ролі дієслова зв'язки.

### ОЗНАКИ ФУНКЦІОНАЛЬНОЇ ВІДМІННОСТІ ДІЄСЛОВА TO BE

Таблиця 20.

Функції	Місце в реченні	Приклади	Особливості перекладу
1. Смислове дієслово	1) перед іменником з прийменником або прислівником місця;  2) після дієслова there, перед іменником без прийменника	My friend is at the laboratory. I was there yesterday.  There are many wards in this clinic.	Перекладається: бути, перебувати; у теперішньому часі часто випускається. Перекладається: мати, перебувати, існувати. Якщо є обставина місця і часу, то переклад речення слід починати з них.
2. Дієслово-зв'язка	1) перед іменником, прийменником (за винятком прийменника of), прикметником або числівником; 2) після підмета-іменника типу aim, plan, function, purpose, task, etc., перед герундієм.	He is a student. The results of the treatment were satisfactory. There are 15 students in the group.  Our task is preventing many diseases.	Перекладається: бути, становити; у теперішньому часі часто випускається.  Перекладається: полягати; у теперішньому часі часто випускається.



3. Допоміжне дієслово	1) перед ing-form (Participle I) для утворення часів групи Continuous; 2) перед Participle II для утворення пасивного стану.	The students are listening to the lecture.  They were invited by their teacher.	У цих випадках дієслово to be окремо не перекладається.
4. Частина модальної конструкції	1) перед інфінітивом (дія за заздальгідь наміченим планом, значення обов'язку)	He is to go there. We are to study diseases of inner organs.	Виражає те, що повинне бути.

### ОЗНАКИ ФУНКЦІОНАЛЬНОЇ ВІДМІННОСТІ ДІЄСЛОВА *TO HAVE*

Таблиця 21.

Функції	Місце в реченні	Приклади	Особливості перекладу
1. Смысловое дієслово	Перед іменником (часто з означеннями)	He has a lot of medical books.	Перекладається: він має..., у нього є.
2. Допоміжне дієслово для утворення часів групи Perfect	Перед дієсловом у формі Participle II	I have read this book. He has been working here for 10 years.	У цих випадках дієслово to have окремо не перекладається
3. Модальне значення необхідності, зумовлене обставинами	Перед дієсловом у формі інфінітиву	You will have to repeat it.	Виражає необхідність здійснення дії, позначеної інфінітивом (доведеться зробити).

### МОДАЛЬНІ ДІЄСЛОВА (MODAL VERBS)

1. Дієслова can, may, ought (to), must, could, might, shall, should, will, would належать до групи модальних допоміжних дієслів. При цьому дієслово could є формою минулого часу дієслова can, а дієслово might є формою минулого часу дієслова may. Дієслова need і dare можуть уживатися не тільки як модальні дієслова, але також і як повнозначні дієслова.

2. Як правило, модальні дієслова не вживаються самотійно, а тільки в сполученні з інфінітивом без частки to.

3. Модальні дієслова виражають імовірність, необхідність, можливість, бажаність здійснення дії, вираженої основним дієсловом.

4. Модальне дієслово завжди ставиться перед формою основного дієслова.

*You may go.* – *Ти можеш іти* (у тебе є дозвіл на це). *He must have come.* – *Мабуть, він уже прийшов.*

5. Модальні дієслова не мають закінчення -s у формі 3-ї особи однини часу Present Simple: *She must do it.* – *Вона повинна це зробити.* *He can do it.* – *Він може це зробити.*

6. Модальні дієслова не мають безособових форм – інфінітива, герундія й дієприкметника.

7. Дієслова can і may мають форми теперішнього й минулого часу (could і might), а дієслова must, ought і need мають тільки одну форму – теперішнього часу.

8. Питальна й заперечна форми модальних дієслів у Present і Past Simple утворюються без допоміжного дієслова to do. У питальній формі модальне дієслово ставиться перед підметом.

### Модальне дієслово CAN

Модальне дієслово can у стверджувальних реченнях позначає фізичну або теоретичну можливість, уміння зробити що-небудь, якщо потрібно виразити, що щось є можливим у принципі, а не щодо цієї конкретної ситуації. *They can help you.* – Вони можуть нам допомогти. *My brother can speak five languages.* – Мій брат розмовляє (може розмовляти) п'ятьма мовами. *They can not help us.* – Вони не можуть допомогти нам.

Це модальне дієслово може перекладатися, як: *можливо, ймовірно, невже* (цим воно виражає припущення, сумнів, подив); *не може бути* (виражає неймовірність у заперечних реченнях). Модальне дієслово can має тільки дві часові форми – Present Form (can) і Past Form (could). Хоча вони можуть позначати також дії, які, можливо, відбудуться в майбутньому. Для вираження майбутнього часу можна використовувати також його еквівалент to be able to.

### Модальне дієслово COULD

Модальне дієслово could є формою минулого часу дієслова can і в стверджувальних реченнях позначає фізичну або теоретичну можливість або вміння зробити що-небудь, якщо потрібно виразити, що щось було можливим у принципі, а не щодо якої-небудь конкретної ситуації в минулому. *They could help you.* – Вони могли тобі/вам допомогти. *It could be seen there the day before yesterday.* – Там це можна було побачити позавчора. Модальне дієслово could може виражати ввічливе прохання. *Could you help me with this bag?* – Ви не могли б допомогти мені із цією сумкою? *Could I have this book with me?* – Можна мені взяти цю книжку із собою? *I could help you.* – Я міг би вам допомогти (зараз).

У стверджувальних реченнях could може вживатися також для вираження припущення, що щось може відбуватися зараз. При цьому дієслово could виражає менший ступінь упевненості в можливості здійснення дії, ніж can.

### Модальне дієслово MAY

Модальне дієслово may позначає можливість, яка допускається, дозвіл зробити що-небудь (на відміну від теоретичної можливості, що виражається дієсловом can). У цьому значенні вживається тільки у стверджувальній формі. *They may help you.* – Вони можуть (їм дозволено) вам допомогти. *You may be right.* – Ти можеш мати рацію.

Також за допомогою цього дієслова виражається припущення, яке ґрунтується на непевності. У стверджувальних реченнях, які виражають припущення про те, що зараз або в майбутньому щось може відбутися (статися), використовуються дієслова may і might. Між may і might у цьому випадку практично немає різниці, однак might виражає більший ступінь сумніву в можливості описуваної події. *It may snow tomorrow.* – Завтра може ніти сніг. *It might rain tomorrow.* – Завтра може ніти дощ (хоча це й малоімовірно). *They may have been discussing the question for two hours.* – Можливо, вони вже дві години обговорюють питання. Для вираження майбутнього часу можна використовувати також його еквівалент to be allowed to.

### Модальне дієслово MUST

Дієслово must виражає необхідність, моральний обов'язок і відповідає в українській мові словам *повинен, потрібно, треба*. *I must go to work today.* – Я повинен прийти на роботу сьогодні. *You must do it as you are asked.* – Ти повинен зробити так, як тебе просили.

Дієслово must не має форм ні минулого, ні майбутнього часу, уживається тільки в теперішньому часі. Для вираження повинності в майбутньому й минулому вживається його еквівалент to have to. Якщо конструкція to have to уживається в теперішньому часі, вона позначає вимушену (об'єктивну) повинність.

Must виражає внутрішню усвідомлену необхідність: *треба, потрібно, необхідно, повинен*. *I must do it today.* – Я повинен зробити це сьогодні. Must виражає також настійну пораду: *повинен, потрібно*. *You must go to the doctor.* – Ти повинен ніти до лікаря.

Модальне дієслово must у заперечній формі має значення заборони: *не можна, не повинен, забороняється*.

**ОЗНАКИ РОЗПІЗНАВАННЯ ГРАМАТИЧНИХ ФОРМ, УТВОРЕНИХ ЗА ДОПОМОГОЮ ДОПОМІЖНИХ ДІЄСЛІВ *SHOULD I WOULD***

Таблиця 22.

Функції	Ознаки	Приклади	Еквіваленти в українській мові
1. Допоміжне дієслово	Входить до складу присудка підрядного речення, а присудок головного речення має одну з форм минулого часу.		Присудок перекладається майбутнім часом.
a) Future-in-the-Past		The surgeon said that he <i>would consult</i> this patient in two days. – Хірург сказав, що він проконсультує хворого через 2 дні.	
b) Subjunctive Mood	1) Входить до складу присудка головного речення, де підрядне є умовним.  2) Входить до складу присудка підрядного речення.	If there were no calcium salts producing a barrier, the caries <i>would go</i> straight to the pulp. – Якби не було кальцієвих солей, що створюють бар'єр, карієс перейшов би на пульпу. <i>Should</i> this condition <i>arise</i> the drug <i>should be administered</i> intravenously. – Якби стан погіршився, то ліки треба було б вводити внутрішньовенно.	Присудок перекладається умовним способом, тобто дієсловом у минулому часі з часткою “б”, “би”.
2. Модальне дієслово	Входить до складу присудка простого чи головного речення:	The doctor suggested that the patient <i>should be operated on</i> . – Лікар наполягав, щоб пацієнт був прооперований.	Виражає необхідність, пораду, докір тощо. Перекладається: варто, слід, слід було б (потрібно було б).

**ПІДРЯДНІ ДОДАТКОВІ ТА ОЗНАЧАЛЬНІ РЕЧЕННЯ  
(OBJECT CLAUSES)**

В англійській мові підрядні додаткові речення (Object Clauses) виконують функцію додатка до дієслова або прикметника в головному реченні. Вони приєднуються до головного речення

сполучниками *that, if, whether*, сполучними займенниками та прислівниками *who, whose, what, which, where, when, how, why*, а також безсполучниковим способом. Додаткові підрядні речення перекладаються зі сполучником *що* або без нього: *I know my friend is not ill. – Я знаю, (що) мій друг не хворий.*

Підрядні означальні речення (Attributive Clauses) виконують роль означення іменника або займенника головного речення і з'єднуються з ним за допомогою сполучних займенників *who, whose, which, that*, сполучних прислівників *where, when*, а також безсполучниковим способом. Перекладаючи підрядні означальні речення, вводять сполучник **який**, наприклад: *My friend you know well is not ill. – Мій друг, якого ви добре знаєте, не хворий.*

### Виділення членів речення за допомогою підсилювальної конструкції IT IS (was, will be) ... THAT (who, which)

Іноді в англійських реченнях вживаються конструкція типу *It is (was) ... that (who)*. Українською мовою такі конструкції перекладають словом *саме* і використовують для виділення певного члена речення.

Якщо слід виділити обставину часу, то, як правило, вживають таку конструкцію: **it was not until... that**, а її українські відповідник – слова *лише, лише після; лише тоді, коли*.

*It was not until 1538 that A. Vesalius published this work. – Лише в 1538 році А. Везалій опублікував свою роботу.*

### УМОВНИЙ СПОСІБ

Умовний спосіб виражає дію не як реальну, а як таку, що могла б відбутися за певних умов, а також необхідну, бажану або нереальну, нездійсненну. Форми переважної більшості дієслів умовного способу збігаються з формами дійсного способу. Виняток становлять дієслова 3-ої особи однини, котрі не мають закінчення -s: *It was necessary (that) the doctor take the patient's blood pressure immediately. – Було необхідно, щоб лікар негайно виміряв хворому кров'яний тиск.*

Для утворення умовного способу також вживаються дієслова **should, would** та **might**: *The patient must follow the administered course of treatment lest an unfavourable reaction should develop. – Хворий має дотримуватися курсу призначеного лікування, щоб не виникли небажані наслідки.*

### Вживання умовного способу.

Умовний спосіб вживається:

а) у підрядних умовних реченнях (як із сполучником *if*, так і без нього. В останньому випадку дієслово стоїть перед підметом): *If I were at home I should call a doctor immediately. – Якби я був удома, я викликав би лікаря негайно. Were I at home, I should call in a doctor immediately. – Якби я був удома, я викликав би лікаря негайно.*

б) у підрядних реченнях, які вводяться зворотом із займенником *it*:

<i>it is necessary that</i>	<i>Необхідно, щоб</i>
<i>it is desirable that</i>	<i>Бажано, щоб</i>
<i>it is recommended that</i>	<i>Рекомендується, щоб</i>
<i>it is important that</i>	<i>Важливо, щоб</i>
<i>it is ordered</i>	<i>Наказано</i>

*It is recommended that the patients take their temperature every day. – Рекомендується, щоб хворі вимірювали температуру кожного дня.*

в) у додаткових підрядних реченнях після дієслів **to suggest, to propose** – пропонувати; **to insist** – наполягати; **to wish** – бажати; **to order, to command** – наказувати; **to demand** – вимагати; **to request** – просити; **to advise** – радити та інших: *The surgeon suggested that this patient be operated on next week. – Хірург запропонував, щоб цього хворого прооперували наступного тижня.*

г) у підрядних реченнях, що приєднуються до головного сполучниками **as if, as though** – наче, ніби: *She looks as if she were ill. – Вона має такий вигляд, ніби хвора.*

д) у підрядних реченнях, які вводяться сполучниками *lest щоб не*; *so that для того, щоб*:  
*You must keep your bed lest you should have a complication. – Ви маєте лежати в ліжку, щоб не було ускладнення.*

### Умовні речення (Conditional Sentences).

В англійській мові існує три типи підрядних речень. Підрядні речення умови та часу вводяться сполучниками *if якщо, якби*; *as коли, в той час як*; *since з того часу як*; *when коли*; *whenever кожного разу, коли*; *as soon as як тільки*; *after після того як*; *before перш ніж, перед тим як*; *till, until поки*; *unless якщо не та іншими*.

Перший тип – на позначення реальної, здійсненої умови. Дія, виражена в цих реченнях, стосується майбутнього часу. У такому типі речень присудок головного речення вживають у Future Simple, а присудок підрядного речення вживають у Present Simple. Українською мовою обидва присудки перекладаються дієсловами майбутнього часу. *I'll buy that novel, when it comes out. – Я куплю той роман, коли він вийде. If she shows signs of exhaustion, the nurse will help her immediately. – Якщо у неї будуть ознаки виснаження, медсестра їй негайно допоможе.*

2. Другий тип умовних речень виражає малоймовірну умову. Дія, виражена в цих реченнях, відноситься до теперішнього або майбутнього часу. У такому типі речень присудок підрядного речення вживається в Past Simple, а головного речення – у формі *should / would + Indefinite Infinitive* (без частки *to*). Українською мовою ці речення перекладаються дієсловом в умовному способі, тобто дієсловом минулого часу з часткою “б”. *If I knew his address, I would write to him. – Якби я знав його адресу, то написав би йому. If any symptoms troubled her, she would consult her doctor. – Якби її турбували якісь симптоми, то вона звернулася б до свого лікаря.*

В реченнях другого типу дієслово *to be* має форму *were* для всіх осіб однини та множини:

*If I were you I would call a doctor immediately. – На вашому місці я негайно б викликав лікаря.*

3. Третій тип умовних речень виражає нездійсненну умову. Дія, виражена в цих реченнях, стосується минулого часу. У такому типі речень присудок підрядного речення вживається в Past Perfect, а у головному реченні – з допоміжним дієсловом *should / would* у формі Perfect Infinitive (без частки *to*). *If I had read or heard this information last month, I would have chosen better way in solving the problem. – Якби я прочитав чи почув цю інформацію минулого місяця, я б вибрав кращий шлях у вирішенні цієї проблеми. If he had complained of his symptoms a year ago, he would have been carried out an elective surgery. – Якби він поскаржився на свої симптоми рік тому, йому б здійснили планову операцію.*

## ІНФІНІТИВ (INFINITIVE)

Інфінітив являє собою безособову форму дієслова, яка тільки називає дію. Він не має ні особи, ні числа й відповідає неозначеній формі дієслова в українській мові. У словнику дієслово подається зазвичай у формі інфінітива. Формальною ознакою інфінітива є частка *to*.

### Форми інфінітива

Таблиця 23.

INFINITIVE	ACTIVE	PASSIVE
Indefinite	<b>V</b> (to write)	<b>to be + V<sub>3</sub></b> (to be written)
Continuous	<b>to be + V<sub>ing</sub></b> (to be writing)	–
Perfect	<b>to have + V<sub>3</sub></b> (to have written)	<b>to have + been + V<sub>3</sub></b> (to have been written)

Інфінітив у формі **Indefinite** вживається: якщо дія, яку він виражає, одночасна з дією, вираженою дієсловом-присудком речення; з дієсловами, що виражають намір, надію, бажання і т.п. Indefinite Infinitive може означати дію, майбутню по відношенню до дії, вираженої дієсловом-присудком: *He was the first surgeon to speak to me about it.* – Він був першим хірургом, який заговорив про це зі мною. *They conduct blood test to determine the amount of the hormones.* – Вони виконують аналіз крові для того, щоб встановити рівень гормонів.

Інфінітив у формі **Continuous** виражає тривалу дію, що відбувається одночасно з дією, вираженою дієсловом-присудком: *He seems to be writing something.* – Він, здається, щось пише.

Інфінітив у формі **Perfect** виражає дію, що передує дії, вираженій дієсловом-присудком: *I am glad to have seen you.* – Я дуже радий, що ми побачилися з вами.

### Суб'єктний інфінітивний комплекс (Subjective Infinitive Construction)

В англійській мові суб'єктний інфінітивний комплекс, який виконує функцію складного підмета. Суб'єктний інфінітивний комплекс складається з двох частин. Перша частина комплексу – іменник у загальному відмінку або особовий займенник у називному відмінку. Друга частина комплексу – інфінітив, що виражає дію, яку виконує або зазнає особа чи предмет, позначений іменником (займенником). *This girl is known to be a good student.* – Відомо, що ця дівчина гарна студентка.

Особливістю суб'єктного інфінітивного комплексу є те, що перша і друга його частини відокремлені одна від одної присудком.

Присудком можуть бути такі дієслова (у пасивному стані): *to say* – говорити; *to report* – повідомляти; *to expect* – сподіватися; *to know* – знати; *to think* – думати; *to consider* – вважати; *to believe* – думати, вірити; *to suppose* – припускати та інші: *This text-book is said to be printed in Lviv.* – Кажуть, що цей підручник друкується у Львові. *The delegation is reported to have arrived in Kyiv.* – Повідомляють, що делегація прибула до Києва. *He was thought to have gone.* – Думали, що він пішов. *He was seen to enter the laboratory.* – Бачили, як він заходив до лабораторії.

Суб'єктний інфінітивний комплекс вживається з дієсловами *to seem*, *to appear* – здаватися, *to prove* – стверджувати; *to turn out* – виявлятися; *to happen*; *to chance* – траплятися: *He appears to be ill.* – Здається, що він хворий.

Суб'єктний інфінітивний комплекс вживається зі словосполученнями *to be sure* – напевно, *to be certain* – безперечно, *to be likely* – мабуть, *to be unlikely* – навряд: *They are likely to return next week.* – Мабуть, вони повернуться наступного тижня.

Українською мовою речення з суб'єктним інфінітивним комплексом перекладають здебільшого за допомогою складнопідрядних речень. Переклад слід починати з присудка, який в українській мові перетворюється на неозначено-особове або безособове головне речення.

Інфінітив перекладається як присудок підрядного речення. Якщо вживається простий інфінітив, то він перекладається теперішнім часом, перфектний – минулим, а пасивного стану – присудком як активного, так і пасивного стану відповідного часу. *He is said to live here.* – Кажуть, що він живе тут. *He is said to have lived here.* – Кажуть, що він жив тут. *He is thought to be discharged.* – Вважають, що його випишуть з лікарні.

### Об'єктний інфінітивний комплекс (Objective Infinitive Construction)

В англійській мові додаток може складатися з групи слів, до якої входить іменник або займенник непрямого відмінка та інфінітив. Такий додаток називають складним. Складний додаток перекладається підрядним реченням зі сполучниками *що, як, щоб*. При цьому іменник (займенник) у непрямому відмінку стає підметом українського підрядного речення, а інфінітив – присудком: *I know this surgeon (him) to operate on successfully.* – Я знаю, що цей хірург (він) оперує успішно. *I want you to tell me about his mother.* – Я хочу, щоб ви розповіли мені про його матір.

Складний додаток вживається після дієслів, що виражають:

а) бажання, намір, почуття: *to want хотіти; to wish, to desire – бажати; should/would, like – хотіти; to hate – ненавидіти; to intend – мати намір* та інші: *He intended me to go with him to the polyclinic.* – Він хотів, щоб я пішов з ним до поліклініки.

б) думку (погляд), сподівання, припущення: *to expect – сподіватися; to think – думати; to consider, to believe – вважати; to suppose – припускати; to find – знаходити; to know – знати* та інші. *We consider him to be the best student of our group.* – Ми вважаємо його найкращим студентом нашої групи.

в) наказ, прохання, дозвіл, пораду, примус: *to order, to command – наказувати; to ask, to request просити; to allow, to permit дозволяти; to advice, to recommend радити, рекомендувати; to cause, to force, to make – примушувати.* *The teacher allowed us to use dictionaries.* – Викладач дозволив нам користуватися словниками. Після дієслів *to make, to let* інфінітив вживається без частки **to**: *The doctor made the patient lie down.* – Лікар примусив хворого лягти.

г) сприймання за допомогою органів чуттів: *to see – бачити; to hear – чути; to feel – почувати; to watch, to observe – спостерігати; to notice – помічати.* Після цих дієслів частка **to** не вживається: *Suddenly I heard her call my name.* – Раптом я почув, що вона поклікала мене. *I felt the pain become less.* – Я відчув, що біль трохи стих.

Переклад складного додатка залежить від форми інфінітива, тобто простий інфінітив перекладається теперішнім часом, перфектний – минулим, а пасивного стану – присудком пасивного стану.

## ДІЄПРИКМЕТНИК (PARTICIPLE)

Дієприкметник – це неособова форма дієслова, що має властивості прикметника, прислівника і дієслова. В англійській мові є прості та складені форми дієприкметника.

### Форми дієприкметника Forms of Participle

Таблиця 24.

PARTICIPLE	FORM	EXAMPLES
Participle I (Active)	<b>V + -ing</b>	writing, working
Participle I (Passive)	<b>being + V<sub>3</sub></b>	being written, being worked
Participle II (Passive)	<b>V<sub>3</sub></b>	written, worked
Perfect Participle (Active)	<b>having + V<sub>3</sub></b>	having written, having worked
Past Participle (Passive)	<b>having + been + V<sub>3</sub></b>	having been written having been worked

**Having plenty of time, we decided to walk to the museum.** – Маючи багато часу, ми вирішили піти до музею. **The text translated was easy.** – Перекладений текст був легким. **Made according to new method, the experiment showed good results.** – Проведений відповідно до нового методу, експеримент продемонстрував добрі результати. **Being asked, he didn't answer the questions.** – Коли його запитали, він не відповів на питання. **The nurse working here is my mother.** – Медсестра, яка працює тут, моя мати. **Reading this paper, I made notes.** – Читаючи цю статтю, я робив нотатки. **Having read the book, I gave it to the library.** – Прочитавши книгу, я повернув її до бібліотеки.

### Незалежний дієприкметниковий комплекс (Absolute Participle Construction)

Якщо в англійському реченні у дієприкметниковому звороті (комплексі) перед дієприкметником стоїть іменник чи займенник у називному відмінку, то такий зворот називається **незалежним**. При цьому іменник (займенник) виступає в ролі підмета, а дієприкметник – присудка. Незалежний дієприкметниковий зворот виокремлюється комами. Незалежний дієприкметниковий зворот перекладається українською мовою підрядним обставинним реченням зі сполучниками **оскільки, після того, як; коли, якщо** та ін. Якщо незалежний дієприкметниковий зворот стоїть у кінці речення, то українською мовою його перекладають як складносурядне речення зі сполучниками **при цьому, а, і, але**. **My friend suffering from a severe pain, I called in a doctor.** – Оскільки мій приятель страждав від сильного болю, я викликав лікаря. **The doctor palpated the patient's gum, the pain becoming severe.** – Лікар пальпував ясна хворого, при цьому біль посилювався.

Дієприкметник може бути простим, недоконаного виду або перфектним. Від цього залежить його переклад українською мовою: **The doctor having performed the operation, the patient's condition began to improve.** – Після того, як лікар зробив операцію, стан хворого покращав. **The operation having been performed, the patient's condition began to improve.** – Після того, як було зроблено операцію, стан хворого покращав.

Дієприкметник від дієслова **to be (being, having been)** можна опускати: **The work being done, they went home.** **The work done, they went home.** – Після того, як роботу було закінчено, вони пішли додому.

Слова **there, one, if** у складі незалежного дієприкметникового звороту можуть виступати у ролі підмета: **There being no high temperature, the patient felt better.** – Оскільки не було високої температури, хворий почувався краще.

### Об'єктний дієприкметниковий комплекс (Objective Participle Construction)

Цей дієприкметниковий комплекс вживається після групи “підмет-присудок”, де присудок виражений дієсловом, що означає сприймання за допомогою органів чуттів: **to feel** – відчувати; **to hear** – слухати; **to see** – бачити; **to watch** – спостерігати, бачити; **to want** – хотіти:

Таблиця 25.

NOUN (Common Case)	or	PRONOUN (Objective Case)	PARTICIPLE
Doctor(s)		me him her it us you	Participle I (Active): <b>V<sub>ing</sub></b> (working, writing)
Student(s)		them	Participle I (Passive): <b>being + V<sub>3</sub></b> (being worked, being written)
			Participle II (Passive): <b>V<sub>3</sub></b> (worked, written)



The Objective Participle Construction перекладається підрядним реченням зі сполучником “як”: *I saw **them walking** along the street.* – Я бачив, як вони йшли по вулиці.

## ГЕРУНДІЙ (GERUND)

Герундій – це безособова форма дієслова, що має властивості дієслова й іменника. У функції іменника герундій може виконувати в реченні функції підмета, додатка, означення й обставини. У функції дієслова герундій може мати в постпозиції прямий додаток і визначатися прислівником, мати перфектну форму, категорію стана, а також виражати дію як процес. Герундій утворюється від основи дієслова шляхом додавання суфікса -ing. *Examining is necessary.* – Огляд обов’язковий. *The necessary part of the examination is **listening** the heart.* – Необхідна частина огляду – це прослуховування серця. *They support her idea of **observing** the stomach.* – Вони підтримують її ідею щодо обстеження шлунку. *After giving injection the nurse left the ward.* – Зробивши ін’єкцію, медсестра вийшла з палати (Після того як ін’єкція була зроблена, медсестра вийшла з палати). *It is impossible to make a diagnosis without **palpating** the abdominal parts.* – Неможливо встановити діагноз без пальпації (не обстеживши відповідним чином) органи черевної порожнини.

### Форми герундія

Форми герундія збігаються з формами Participle I, однак це різні форми дієслова, що відрізняються й за значенням, і за синтаксичними функціями.

Таблиця 26.

Form	Active	Passive
<b>Indefinite</b>	<b>Ving</b> (working, writing)	<b>being + V<sub>3</sub></b> (being worked, being written)
<b>Perfect</b>	<b>having + V<sub>3</sub></b> (having worked, having written)	<b>having + been + V<sub>3</sub></b> (having been worked, having been written)

*Her bad condition prevented her from **attending** the lecture in Pharmacology.* – Її погане самопочуття завадило відвідати лекцію з фармакології. *On **having examined** the patient the physician made the diagnosis of pneumonia.* – Після того, як лікар обстежив хворого, він встановив діагноз – пневмонія. *He wants **being treated** at this hospital.* – Він хоче, щоб його лікували в цій лікарні.

### Герундіальний комплекс (зворот) (Gerund Construction)

Герундій і присвійний займенник або іменник, що стоять перед ним, утворюють герундіальний комплекс, який може виконувати в реченні функцію складеного підмета або складеного додатка. На початку речення герундіальний комплекс перекладається підрядним реченням із сполучниками “те, що”; “в тому, що”: *This **doctor’s knowing** English well helps him in the work.* – Те, що цей лікар добре знає англійську, допомагає йому в роботі.

Після присудка герундіальний комплекс перекладається підрядним реченням із сполучником “що”: *We know of **his having performed** on this operation well.* – Ми знаємо, що він добре виконав операцію.

## УЗГОДЖЕННЯ ЧАСІВ У ПІДРЯДНОМУ ДОДАТКОВОМУ РЕЧЕННІ

Правило узгодження часів діє головним чином у складних реченнях з підрядним додатковим. Якщо в англійському головному реченні дієслово-присудок стоїть у минулому часі, то і в підрядному додатковому реченні дієслово-присудок має бути в одному з минулих часів. В українській мові такої залежності немає. *He said (that) he lived in Kyiv.* – Він сказав, що живе у Києві.

Коли у головному реченні дієслово-присудок стоїть у Past Simple (або Past Continuous), то в підрядному реченні ці часи свідчать про те, що дія відбулася одночасно з дією головного речення, і перекладаються в українській мові теперішнім часом: *She **said** that he **translated** the article.* – Вона сказала, що він перекладає статтю. *She **said** that she was **writing** a letter.* – Вона сказала, що пише лист.

Past Perfect у підрядному реченні показує, що ця дія відбулася раніше, ніж дія головного речення, і перекладається минулим часом: *He **said** (that) he **had** lived in Kyiv.* – Він сказав, що жив у Києві (раніше).

Якщо в головному реченні дієслово-присудок стоїть в Past Simple, а в підрядному реченні треба передати дію, котра має відбутися у майбутньому, то дієслово-присудок підрядного речення вживається у Future-in-the-Past і перекладається майбутнім часом. Допоміжні дієслова ***shall, will*** мають форму минулого часу ***should, would***: *He **said** (that) he **would** live in Kyiv.* – Він сказав, що житиме у Києві.

# VOCABULARY

## A

- abdomen** [ˈæbɪdʒɪn] черевна порожнина
- abdominal** [ˈæbɪdʒɪnəl] абдомінальний, черевний
- abdominal diseases** [ˈæbɪdʒɪnəl dɪzɪz] шлунково-кишкові захворювання
- abnormality** [ˌæbɪnɔːlɪtɪ] відхилення, аномалія, патологія
- absorb** [ˈæbsɔːb] всмоктувати, вбирати; абсорбувати
- accelerate** [ˈæksələreɪt] прискорювати; збільшувати швидкість
- accept** [əksept] приймати; визнавати
- access** [ˈækses] доступ; підхід, прохід; приступ
- accessory** [əkseɪsɔːrɪ] додатковий, допоміжний; побічний
- accident** [ˈæksɪdənt] нещасний випадок, аварія
- accommodate** [əˈkɒmədeɪt] пристосовувати(ся); розміщувати
- accompany** [əˈkʌmpəni] супроводити
- accomplish** [əˈkɒmplɪʃ] досягати; виконувати; здійснювати; доводити до кінця
- account** [əˈkaʊnt] причина, підстава; значення; пояснювати
- accumulate** [əˈkjʊmjuleɪt] скупчувати(ся); акумулювати; наростати
- accuracy** [ˈækjʊrəsi] точність, правильність
- ache** [eɪk] біль; боліти, нити
- achieve** [əˈtʃiːv] досягати; добиватися; успішно виконувати
- acid** [ˈæsɪd] кислота
- acquire** [əˈkwaɪə] набувати; одержувати; досягати
- act** [ækt] дія; діяти, поводитися
- actual** [ˈæktʃʊəl] справжній; дійсний; фактичний
- acute** [əˈkjuːt] гострий (про зір, біль); різкий
- acupuncture** [ˌækjʊˈpʌntʃər] акупунктура, голкотерапія
- adapt** [əˈdæpt] пристосовувати; адаптувати
- add** [æd] додавати, приєднувати
- additional** [əˈdɪʃənəl] додатковий
- adhere** [əˈdɪə] прилипати, приставати
- adipose** [əˈdɪpəʊs] жировий
- adjacent** [əˈdʒeɪs(ə)nt] розташований поряд; близький, суміжний
- adjoin** [əˈdʒɔɪn] прилягати, межувати
- adjust** [əˈdʒʌst] пристосовуватись; приладжувати, регулювати
- administer** [ədˈmɪnɪstə] призначати
- adrenal cortex** [ədˈrɪnəl ˈkɔːteks] кора надниркової залози
- adrenal gland** [ədˈrɪnəl] надниркова залоза
- adrenal medulla** [ədˈrɪnəl meˈdʌlə] мозкова речовина надниркової залози
- adult** [ˈædʌlt, ɪˈdʌlt] дорослий, повнолітній
- advance** [ədˈvɑːns] рух уперед; успіх, прогрес; просуватися
- adverse** [ədˈvɜːs] несприятливий, побічний
- advice** [ədˈvaɪs] порада
- aerosol** [ˈeɪrəʊsəl] аерозоль
- affect** [əˈfekt] впливати; уражати (про хворобу); шкодити
- age** [eɪdʒ] вік (людини)
- agent** [eɪdʒənt] збудник
- aggravate** [əˈgrævəteɪt] погіршувати; обтяжувати
- aid** [eɪd] допомога; допомагати
- ailment** [ˈeɪlmənt] захворювання, недуга
- albumin** [ˈælbjʊmɪn] альбумін
- alike** [əˈlaɪk] схожий, подібний; такий самий; так само, однаково
- alimentary** [ˌæləˈmɛntɪəri] харчовий, аліментарний
- alive** [əˈlaɪv] живий
- alleviate** [əˈliːveɪt] полегшувати

**allocate** [ˈæləkeɪt] розподіляти; розміщати; призначати  
**allow** [əˈlaʊ] дозволяти; давати, надавати; допускати; визнавати  
**along** [əˈlɒŋ] по, уздовж; далі, уперед  
**alter** [ˈɔːltə] змінювать(ся); видозмінювати, вносить зміни  
**although** [ɔːlˈðɒ] незважаючи на те, що  
**alveolus** (pl. alveoli) [ˈælvəˈjuːləs] альвеола, ячейка  
**amount** [əˈmaʊnt] кількість; загальна сума; складати (суму); дорівнювати  
**analgesic** [ˈænlədʒesɪk] анальгезуючий, анальгетичний, безбездискомфортний  
**analyze** [ˈænləʒaɪz] аналізувати  
**anamnesis** [ˈænmənɪsɪs] анамнез  
**angina** [ˈæŋɡɪnə] стенокардія  
**ankle** [ˈæŋkəl] надп'яtkово-гомільковий суглоб; зона з'єднання надп'яtkово-гомількового суглоба; щиколотка  
**announce** [əˈnaʊns] повідомляти  
**anterior** [ˌæntɪəˈrɪə] передній  
**antibiotic** [ˌæntɪˈbaɪəˈtɪk] антибіотик  
**antibody** [ˌæntɪˈbɒdɪ] антитіло  
**antigen** [ˌæntɪˈdʒɪn] антиген  
**antiviral** [ˌæntɪˈvaɪrəl] протівірусний  
**anvil** [ˈænvɪl] коваделко  
**apex** [ˈeɪpeks] верхівка  
**apparent** [əˈpɪərənt] помітний, очевидний  
**appear** [əˈpɪə] виглядати  
**appetite** [ˈæpɪtaɪt] апетит  
**appliance** [əˈplɑːns] прилад, пристрій  
**application** [ˌæplɪˈkeɪʃən] вживання, використання; прикладання, накладання  
**apply** [əˈplɑː] ставити; використовувати, вживати; прикладати, накладати  
**appoint** [əˈpɔɪnt] призначати  
**approach** [əˈprəʊtʃ] підхід  
**approximately** [ˌæprɒksɪmətli] приблизно **arachnoid** [ˌærəkneɪd] павутинна оболонка (мозку)  
**arch** [ɑːtʃ] дуга; арка, склепіння; вигинати дугою  
**arise** [əˈraɪz] виникати, з'являтися; бути наслідком, впливати  
**arm** [ɑːm] плече (частина верхньої кінцівки); рука  
**arrange** [əˈreɪndʒ] систематизувати; влаштувати; урегулювати  
**arrest** [əˈrest] затримання, затримка; затримувати, зупиняти  
**artery** [ˈɑːtəri] артерія  
**arthritis** [ˈɑːtrɪtɪs] артрит  
**aside** [əˈsaɪd] убік; осторонь  
**assemble** [əˈsembl] збирати  
**associate** [əˈsoʊʃieɪt] тісно пов'язаний; [əˈsoʊʃieɪt] поєднувати, сполучати; приєднувати; мати зв'язок  
**aspiration** [ˌæspəˈreɪʃən] аспірація  
**asthma** [ˈæsmə] астма  
**atop** [əˈtɒp] поверх; над  
**attach** [əˈtætʃ] прикріплювати, зв'язувати **attempt** [əˈtempt] намагаться, прямувати  
**attitude** [ˈætɪtjuːd] постава  
**atrial** [ˈeɪtrɪəl] передсердний, такий, що стосується передсердя  
**auricle** [ˈɔːrɪkl] вушна раковина  
**auscultation** [ˌɔːsk(ə)l'teɪʃən] вислуховування (хворого), аускультация  
**auxiliary** [ˈɔːgɪzɪjəri] допоміжний  
**average** [ˈævərɪdʒ] середній; звичайний, середнє число; середнє (число); в середньому; дорівнювати в середньому, складати  
**avoid** [əˈvɔɪd] уникати; застерігати; уникнення; скасування  
**awareness** [əˈweɪnəs] обізнаність, знання  
**axis** [ˈæksɪs] (pl. axes) вісь  
**axon** [ˈæksən] аксон, провідна частина нервової клітини, відросток нервової клітини

**B**

**back** [bæk] спина, хребет; задня сторона; задній; зворотній; назад  
**backbone** [ˈbækboʊn] спинний хребет  
**backward** [ˈbækwɔːrd] назад, у зворотному напрямі; зворотний  
**bactericidal** [ˌbæktɪˈsɪdəl] бактерицидний  
**band** [bænd] стрічка; зв'язок; зв'язувати; сполучати; скріплювати  
**bandage** [ˈbændʒ] бинт; бандаж; перев'язувати, бинтувати  
**basement** [ˈbeɪsmənt] базис, основа  
**basis** [ˈbeɪsɪs] (pl. bases) основа; підстава; базис  
**be** [bi:] бути; існувати  
**bear** [beə] родити, народжувати; носити; переносити; терпіти, зносити  
**bearable** [ˈbeərəbəl] стерпний  
**bearer** [ˈbeərə] носій; опора  
**beat** [bi:t] битися; удар, поштовх, скорочення, систола, пульсація  
**become** [bɪˈkʌm] ставати; робитися; перетворюватися; траплятися  
**begin** [bɪˈɡɪn] починати(ся)  
**behavior** [beɪˈheɪvjə] манери, поведінка  
**believe** [bɪˈli:v] вірити; думати, вважати  
**belly** [ˈbeli] живіт, черво  
**belong** [bɪˈlɒŋ] належати; стосуватися  
**below** [bɪˈləʊ] внизу; під, нижче  
**bend** [bend] згинати(ся); нахилити(ся); згин, вигин; нахил  
**beneath** [bɪˈneɪθ] нижче; внизу  
**benefit** [ˈbenefɪt] перевага; користь  
**benign** [bɪˈnaɪn] доброякісний  
**beyond** [bɪˈjɒnd] зовні, за межами; за, по той бік; над, понад, вище  
**bilateral** [ˌbaɪləˈteɪrəl] двобічний, двосторонній  
**bile** [baɪl] жовч  
**Biology** [baɪˈɒlədʒi] біологія  
**bit** [bɪt] шматочок; частина, невелика кількість  
**bite** [baɪt] кусати; укус; кусок, шматочок  
**blemish** [ˈblemɪʃ] дефект  
**bladder** [ˈblædər] сечовий міхур  
**bleed** [bi:əd] кровоточити; пускати кров  
**blench** [ˈblentʃ] ухилитися; відступати  
**blend** [blend] змішувати(ся); зливатися; суміш; змішування  
**bloat** [bləʊt] роздувати(ся), надувати (ся)  
**blood** [blʊd] кров  
**blood circulation** [ˈblʊd sɪˈkjʊleɪʃən] кровообіг  
**bloodstream** [ˈblʊdstri:m] кровоплин, судинне русло  
**blood supply** [ˈblʊd sʌˈplaɪ] кровопостачання, прилив крові  
**blood transfusion** [ˈblʊd ˈtrænsˈfju:ʒən] переливання крові  
**blotch** [ˈblɒtʃ] прищ; пляма  
**blow** [bləʊ] дути; важко дихати; удар  
**body** [ˈbɒdi] тіло; організм; головна частина (чогось)  
**bone** [boʊn] кістка  
**bone marrow** [ˈboʊn ˈmɔːrəʊ] кістковий мозок  
**border** [ˈbɔːdər] край; межувати; облямовувати  
**bottom** [ˈbɒtəm] нижня частина  
**bound** [baʊnd] обмежувати, ставити межу, стримувати, межувати, слугувати межею  
**boundary** [ˈbaʊndrɪ] межа  
**bow** [baʊ] згинати(ся)  
**bowel** [ˈbaʊəl] кишка; pl. нутроші  
**brain** [breɪn] мозок

**brainstem (brain stem)** [ˈbreɪnstem] стовбур головного мозку  
**branch** [ˈbræʃ] гілка; галузь; розгалужуватися  
**branching** [ˈbræʃɪŋ] розгалуження, гілкування  
**break** [breɪk] ламати(ся); розбивати(ся); порушувати; переривати; розмикати  
**breakdown** [ˈbreɪkdaʊn] розщеплення  
**breast** [breɪst] груди, молочна залоза  
**breath** [breɪθ] дихання  
**breathe** [breɪð] дихати  
**breathlessness** [ˈbreɪθlɪsnəs] задишка  
**breathe out** [ˈbreɪð aʊt] видихати  
**bridle** [ˈbraɪdl] вуздечка  
**bring** [brɪŋ] приносити, приводити; доставляти  
**broad** [brɔːd] широкий  
**bronchi** (sing. bronchus) [ˈbrɒŋki] бронхи  
**bronchial asthma** [ˈbrɒŋkiəl ˈæstmə] бронхіальна астма  
**bronchiole** [ˈbrɒŋkiəl] бронхіола  
**bronchitis** [ˈbrɒŋkaɪtɪs] бронхіт  
**bud** [bʊd] брунька, зачаток  
**bulk** [bʊlk] основна маса, більша частина  
**bunch** [bʊntʃ] в'язка; зв'язувати  
**burn** [bɜːn] палити; спалювати; обпалювати; опік  
**burrow** [ˈbɜːrəʊ] ховатися, зариватися  
**burst** [bɜːst] вибух, спалах; лопатися; спалахнути

## C

**calf** [kɑːf] (pl. calves) литка  
**calm** [kɑːm] спокійний; тихий; спокій, тиша; заспокоюватися  
**calyx** (pl. calyces) [ˈkæljɪks] ниркова чашка  
**canal of Schlemm** [kəˈnæl ɒv ˈʃlem] шоломів канал, венозний синус склери  
**cancellous bone** [kənˈsɛləs] сітчаста кістка, губчаста кісткова речовина  
**cancer** [ˈkænsə] рак  
**capable** [ˈkeɪpəbəl] здатний (на), здібний  
**capability** [ˌkeɪpəˈbɪləti] здатність, можливість, потенціал  
**capable** [ˈkeɪpəbəl] діездатний  
**capillary** [kəˈpɪləri] капіляр; капілярний  
**care** (for, of, about) [keə] турбуватися  
**carbohydrate** [kɑːboʊˈhaɪdreɪt] вуглевод  
**carbon dioxide** [ˈkɑːbən daɪˈɒksaɪd] діоксид вуглецю  
**cardiac** [ˈkɑːdiæk] кардіальний, що належить до проксимального відділу  
**cardiovascular** [ˈkɑːdiəvʌskjələ] серцево-судинний  
**care** [keə] турбота, піклування; уважність; обережність; доглядати, дбати; піклуватися, турбуватися  
**carry** [ˈkæri] переносити, нести  
**carry on** [ˈkæri ɒn] продовжувати, вести справу  
**cartilage** [ˈkɑːtɪlɪdʒ] хрящ  
**case** [keɪs] випадок; випадок захворювання; обставина; справа  
**case history** [ˈkeɪs ˈhɪstri] історія хвороби  
**casing** [ˈkeɪsɪŋ] оболонка  
**catarrhal** [kəˈtærɪəl] катаральний, застудний **cause** [kɔːz] причина; підстава; спричиняти, викликати  
**cave** [keɪv] порожнина  
**cavity** [ˈkævəti] порожнина  
**cell** [sel] клітина  
**cerebellum** [ˈserəˈbeləm] мозочок  
**cerebral cortex** [ˈkeɪbrəl kɔːteks] кора головного мозку  
**cerebrum** [ˈserəˈbrəm] великий мозок  
**cessation** [seˈseɪʃən] зупинка, припинення **chamber** [ˈtʃeɪmbə] камера

**chance** [ˈtʃɑːns] випадок; випадковість; траплятися; статися  
**change** [ˈtʃeɪŋdʒ] зміна; переміна; змінювати(ся); міняти(ся)  
**charge** [tʃɑːdʒ] вимагати  
**check** [tʃek] затримка; перешкода; контроль; перевірка; зупиняти; стримувати; контролювати; перевіряти  
**cheek** [tʃiːk] щока  
**cheekbone** [ˈtʃiːkbɒn] вилиця  
**Chemistry** [ˈkɛmɪstrɪ] хімія  
**chemist's (shop)** [ˈkɛmɪsts ˈʃɒp] аптека  
**chest** [tʃest] грудна клітка  
**chew** [tʃuː] жувати  
**chickenpox** [ˈtʃɪkɪnpɒks] вітряна віспа  
**chief** [tʃiːf] головний  
**chill** [tʃɪl] охолоджуватися, замерзати; озноб, гарячка, пропасниця; застуда  
**chin** [tʃɪn] підборіддя  
**choose** [tʃuːz] обирати  
**choroid** [ˈkɔːrɔɪd] судинна оболонка ока, хоріоїд, хоріоїдея  
**circular** [ˈsɪkjələ] круглий; коловий; круговий  
**circulation** [ˈsɪkjʊleɪʃən] обіг, циркуляція  
**claim** [kleɪm] вимагати; претендувати; твердити; вимога; заява  
**clavicle** [ˈklævɪkl] ключиця  
**cleave** [kliːv] розколювати(ся)  
**closure** [ˈkloʊzə] закриття  
**clot** [klɒt] згортатися; згусток крові, тромб  
**clue** [kluː] ключ  
**coagulate** [koʊˈdʒuːleɪt] згущатися, зсідати  
**cochlea** [ˈkɒkliə] равлик (вуха)  
**columnar** [kəˈlʌnə] стовпчиковий, стовпчикоподібний  
**cold** [kəʊld] застуда  
**collagen** [ˈkɒlədʒɪn] колаген  
**collarbone** [ˈkɒlərbɒn] ключиця  
**come** [kʌm] приходити; доходити; траплятися; походити; бути родом  
**common** [ˈkɒmən] загальний; спільний; звичайний; загальновідомий  
**compact bone** [ˈkɒmpækt ˈboʊn] компактна кісткова тканина  
**comparable** [ˈkɒmpərəbl] порівнянний  
**compartment** [kəmˈpɑːtmənt] відділення (частина чого-небудь)  
**compatible** [kəmˈpætəbl] сумісний  
**compete** [kəmˈpiːt] конкурувати  
**complain** [kəmˈpleɪn] скаржитися  
**complaint** [kəmˈpleɪnt] скарга; біль, недуга  
**complete** [kəmˈpliːt] повний; закінчений; цілковитий; закінчувати; укомплектовувати  
**completeness** [kəmˈpliːtnəs] повнота, завершеність  
**complex** [ˈkɒmpleks] складний; комплексний; комплекс  
**complexity** [kəmˈpleksɪti] складність  
**compliance** [kəmˈplaɪəns] згода; поступливість; догідливість  
**complicate** [ˈkɒmpləkeɪt] ускладнювати(ся)  
**compound** [ˈkɒmpaʊnd] складений; складний; суміш; сполука; [kəmˈpaʊnd] змішувати; сполучати  
**comprise** [kəmˈpraɪz] містити в собі; охоплювати, включати  
**compromise** [ˈkɒmprəmaɪz] піддавати ризику, небезпеці  
**concave** [kənˈkeɪv] угнутий  
**concern** [kənˈsɜːn] відношення, причетність; інтерес, участь; турбота, хвилювання; стосуватися; відноситися  
**condition** [kənˈdɪʃən] умова; стан  
**conduct** [kənˈdʌkt] проводити, бути провідником  
**confine** [kənˈfaɪn] обмежувати  
**confirm** [kənˈfɪːm] підтверджувати; затверджувати  
**confusion** [kənˈfjuːʒən] заплутаність

**congenital** [kɒnˈdʒenɪtəl] вроджений  
**conjoin** [kɒnˈdʒɔɪn] з'єднувати(ся); сполучати(ся)  
**conjunction** [kɒnˈdʒʌŋkʃən] з'єднання; зв'язок  
**conjunctiva** [ˈkɒnˌdʒʌŋkˈtɪvə] кон'юнктива (слизова оболонка ока)  
**connect** [kəˈnekt] з'єднувати(ся); сполучати(ся)  
**connective** [kəˈnektɪv] сполучний, з'єднувальний  
**conscious** [ˈkɒnʃəs] свідомий  
**consciousness** [ˈkɒnʃnəs] свідомість  
**consequence** [ˈkɒnsɪkwens] наслідок, результат  
**consider** [kənˈsɪdər] вважати  
**consist of** [kənˈsɪst] складатися з  
**constipation** [ˈkɒnstɪˈpeɪʃən] запор  
**constriction** [kənˈstrɪkʃən] скорочення, стягання, звуження; стиснення  
**constitute** [ˈkɒnstɪtju:t] призначати; встановлювати, засновувати; складати  
**constrict** [kənˈstrɪkt] стискувати; скорочувати  
**consume** [kənˈsju:m] знищувати; споживати; марнувати  
**consumption** [kənˈsʌmpʃən] споживання; туберкульоз легенів  
**contagious** [kənˈteɪʃəs] заразний, інфекційний  
**contain** [kənˈteɪn] містити  
**contaminate** [kənˈtæmɪneɪt] заражати, інфікувати  
**contract** [kənˈtrækt] скорочуватися  
**contraindication** [ˈkɒntrɪˈkəɪʃən] протипоказання  
**contrary** [ˈkɒntrɪˈrɪ] протилежний; супротивний; несприятливий  
**contribute** [kənˈtrɪbjʊt] співвідноситися; сприяти  
**control** [kənˈtrɒl] стримування; контролювання  
**convalescent** [ˈkɒnvəˈlesnt] одужуючий  
**conventional** [kənˈvenʃənəl] звичайний, традиційний  
**converse** [ˈkɒnvɜ:s] зворотний; протилежний; зворотне; протилежне  
**convert** [kənˈvɜ:t] перетворювати, обертати; наvertати  
**convex** [kɒnˈveks] опуклий  
**convey** [kənˈveɪ] передавати; транспортувати  
**convulsion** [kənˈvʌʃən] конвульсія  
**copper** [ˈkɒpər] мідь  
**cord** [kɔ:d] зв'язка  
**core** [kɔ:] серцевина; ядро  
**cornea** [ˈkɔ:nə] рогівка, рогова оболонка ока  
**corpse** [kɔ:pəs] труп  
**corpuscle** [ˈkɒpəsəl] часточка, корпускула, тільце, елемент крові  
**correct** [kəˈrekt] відповідний  
**cortex** [ˈkɔ:teks] кора  
**cough** [kɔ:f] кашель  
**count** [kaʊnt] рахувати; підраховувати; рахунок, підрахунок  
**counter** [ˈkaʊntər] протилежний; всупереч; проти; протидіяти  
**counteract** [ˈkaʊntərˈækt] протидіяти, перешкоджати; нейтралізувати  
**course** [kɔ:s] курс, напрям; перебіг, хід  
**cover** [ˈkʌvər] покривати; накривати; містити, охоплювати  
**cranial** [ˈkreɪnɪəl] черепний  
**cranium** [ˈkreɪnɪəm] череп  
**create** [kreɪˈeɪt] породжувати, робити, виробляти, створювати, творити  
**critical** [ˈkrɪtɪkəl] важливий, суттєвий, необхідний  
**cure** [kjʊər] лікування; виліковувати  
**currently** [ˈkʌrɪntli] зараз, в теперешній час, нині  
**curriculum** [kʌˈrɪkjʊləqm] навчальний план  
**curvature** [ˈkjʊ:vʃər] вигин  
**curve** [kjʊ:v] вигин, закруглення, кривизна



**cushion** [ˈkʊʃ(ə)n] валик, м'ясиста анатомічна структура у формі подушки  
**cut** [kʌt] різати; розрізувати; розріз; вирізка; поріз, рана  
**cutaneous** [kju(:)'teɪnjəs] шкірний  
**cycle** [ˈsaɪkl] цикл, період; оберт, такт  
**cyst** [saɪst] киста

## D

**damage** [ˈdæmɪʃ] пошкоджувати; пошкодження  
**danger** [ˈdeɪŋɡə] небезпека  
**damp** [dæmp] сирість, вологість  
**data** [ˈdeɪtə] дані, відомості; інформація  
**dead** [ded] мертвий; заціпенілий  
**deaf** [def] глухий  
**deal** [di:l] мати справу; розглядати  
**death** [deθ] смерть  
**decay** [diˈkeɪ] гниття; руйнування; розпад; гніти, розкладатися  
**decide** [diˈsaɪd] вирішувати  
**decline** [diˈklaɪn] спад; занепад; погіршення; нахилитися; зменшуватися; погіршуватися; відхилити  
**decompose** [ˈdi:ˌkɒmˈpəʊz] розкласти на складові частини; розпадатися  
**decontaminate** [ˈdi:ˌkɒnˈtæmɪneɪt] дезінфікувати; дезактивувати  
**decrease** [diˈkri:s] зменшувати(ся), скорочувати(ся); спадати; [ˈdi:ˌkri:s] зменшення, спад  
**deep** [di:p] глибокий  
**defend** [diˈfend] захищати  
**defense** [diˈfens] захист  
**deficiency** [diˈfɪʃ(ə)nsɪ] нестача; дефіцит; недолік; відсутність  
**define** [diˈfaɪn] визначати, давати визначення; передавати; характеризувати  
**definite** [ˈdefɪnɪt] визначений; певний  
**degree** [diˈɡri:] ступінь; міра; градус  
**delay** [diˈleɪ] затримка; зволікання; відкладення; затримувати; зволікати; відкладати  
**deliver** [diˈlɪvə] розносити, доставляти; передавати; доставляти  
**demand** [diˈmɑ:nd] вимога; потреба; вимагати; мати потребу  
**denote** [diˈnoʊt] показувати; позначати  
**dense** [dens] щільний; густий; стиснутий; густий  
**depart** [diˈpɑ:t] відходити; залишити; відхилитися, відступати  
**departure** [diˈpɑ:tʃə] відхилення, відступ  
**depend** [diˈpend] залежати; розраховувати  
**depose** [diˈpəʊz] усувати; скидати  
**deposit** [diˈpɒzɪt] відкладення, осад  
**depress** [diˈpres] пригнічувати; понижувати, ослаблювати  
**deprive** [diˈpraɪv] позбавляти; відбирати  
**derive** [diˈrɪv] виводити; отримувати; добувати; породжувати; походити  
**derived** [diˈraɪvd] похідний, вторинний  
**dermis** [ˈdɜ:mɪs] дерма, власне шкіра  
**describe** [diˈskraɪb] описувати, характеризувати  
**destroy** [diˈstrɔɪ] руйнувати; знищувати  
**destruction** [diˈstrʌkʃən] руйнування; знищення  
**detect** [diˈtekt] помічати, виявляти  
**deterioration** [diˈtɪəriəˈreɪʃən] погіршення  
**determine** [diˈtɜ:mɪn] визначати  
**detoxification** [diˈtɒksɪfɪˈkeɪʃən] детоксикація  
**device** [diˈvaɪs] прилад  
**devote** [diˈvoʊt] присвячувати  
**diabetes insipidus** [ˈdaɪəˈbi:tɪz] нецукровий діабет  
**diabetes mellitus** [ˈdaɪəˈbi:tɪzˈmelɪtʃəs] цукровий діабет  
**diaphragm** [ˈdaɪəfræɡm] діафрагма

**diagnosis** [ˈdaɪəɡnəʊsɪs] діагноз  
**diastole** [daɪˈstɒl] діастола  
**die** [daɪ] вмирати  
**diet** [daɪət] харчування, стіл; дієта  
**differentiation** [ˈdɪfərəntʃeɪʃən] модифікація, пристосування, видозмінення  
**digest** [dɪˈdʒest] перетравлювати; засвоювати; сприймати  
**digestion** [dɪˈdʒestʃən] травлення, травлення їжі  
**digestive** [dɪˈdʒestɪv] травний, такий, що стосується травлення  
**dilate** [daɪˈleɪt] розширювати; поширювати  
**dilute** [daɪˈlu:t] зниженої концентрації; розбавляти  
**dim** [dɪm] неяскравий, тьмяний  
**diminish** [dɪˈmɪnɪʃ] зменшуватися, послаблювати; знижуватися; скорочуватися  
**direct** [dɪˈrekt] прямий; безпосередній; спрямовувати; направляти  
**disable** [dɪsˈeɪbəl] робити нездатним; виводити з ладу  
**disappear** [dɪsəˈpɪə] зникати; пропадати  
**discharge** [dɪsˈtʃɑːdʒ] розряджати; виділяти, випускати; звільняти; виділення; звільнення  
**disclose** [dɪsˈkloʊz] розкривати, відкривати; виявляти; викривати  
**disease** [dɪˈziːz] захворювання  
**disintegration** [dɪsˈɪntɪɡreɪʃən] роздрібнення, роздвоєння  
**dislodge** [dɪsˈlɒdʒ] пересувати, переміщати, усувати  
**disorder** [dɪsˈɔːdə] захворювання  
**disperse** [dɪsˈpɜːs] розповсюджувати; диспергувати, розкидати, розсіювати частини  
**disposable** [dɪsˈpɒzəbəl] одноразовий  
**disrupt** [dɪsˈrʌpt] порушити  
**disseminate** [dɪsˈsemɪneɪt] розповсюджувати(ся), розсіювати  
**dissolved** [dɪsˈɒlvd] розчинений  
**distil** [dɪsˈtɪl] добувати  
**distinguish** [dɪsˈtɪŋɡwɪʃ] відрізняти, розрізняти; розпізнавати; відділяти  
**distortion** [dɪsˈtɔːʃən] відхилення, аномалія  
**distribute** [dɪsˈtrɪbjʊ:t] розподіляти **distribution** [ˈdɪstrɪbjʊʃən] розподіл  
**disturbance** [dɪsˈtɜːb(ə)ns] порушення, розлад, патологічне відхилення  
**diuretic** [ˈdaɪjʊrɪtɪk] діуретик; сечогінний засіб; сечогінний  
**diverse** [daɪˈvɜːs] різноманітний, різний; відмінний  
**division** [dɪˈvɪʒən] поділ, розподіл; ділення  
**dose** [doʊz] доза; давати дозами; дозувати  
**doubt** [ˈdaʊt] сумнів; сумніватися  
**drain** [ˈdreɪn] відводити, відкачувати; дренажувати; висушувати; витікання; дренаж, осушення  
**drum** [ˈdruːm] барабан  
**dressing** [ˈdresɪŋ] перев'язувальний матеріал  
**drop** [ˈdrɒp] крапля; зниження, падіння; крапати; падати, випадати; знижувати(ся); опускатися  
**droplet** [ˈdrɒplɪt] краплинка  
**dropsy** [ˈdrɒpsɪ] водянка  
**drug** [ˈdrʌɡ] ліки, лікарський засіб; наркотичний засіб  
**dry** [ˈdraɪ] сухий; сушити, висушувати  
**duct** [ˈdʌkt] канал, протока  
**duodenal** [ˈdjuːəˈdɔːnəl] дуоденальний, що стосується дванадцятипалої кишки  
**dura mater** [ˈdʒuːrəˈmeɪtə] тверда мозкова оболонка  
**duration** [ˈdjʊrəʃən] тривалість, довгість  
**dyspepsia** [dɪsˈpepsɪə] розлад травлення, диспепсія

## Е

**ear** [ɪə] вухо  
**eardrum** [ɪˈɑːdrʌm] барабанна перетинка  
**eat** [iːt] їсти  
**effect** [ɪˈfekt] наслідок, результат; дія, вплив; здійснення; виконувати, здійснювати, чинити  
**efficiency** [ɪˈfɪʃnsɪ] дієвість, ефективність; продуктивність; коефіцієнт корисної дії

**effort** [ˈɛfɔrt] зусилля, напруження  
**e.g.** (from L. exempli gratia) наприклад  
**egg** [ɛɡ] яйцеклітина  
**eject** [ɪˈdʒɛkt] викидати; вивергати; виганяти  
**elaborate** [ɪˈlæbrəreɪt] детально обдумувати, розробляти  
**elastin** [ɪˈlæstɪn] еластин  
**elbow** [ˈɛlbəʊ] лікоть  
**element** [ˈɛlɪmənt] елемент, складова частина  
**elevate** [ˈɛləveɪt] піднімати, підносити; підвищувати  
**eliminate** [ɪˈlɪmɪneɪt] знищувати, ліквідувати; усувати  
**elimination** [ɪˈlɪmɪneɪʃn] видалення, виведення  
**embryo** [ˈɛmbriəʊ] (pl. embryos) зародок, ембріон  
**embryonic** [ˈɛmbriənɪk] зародковий, ембріональний  
**emerge** [ɪˈmɜːdʒ] виходити; з'являтися; виявлятися; з'ясовуватися  
**empty** [ˈɛmptɪ] спорожнити; вилити; впадати, входити  
**enable** [ɪˈneɪbəl] давати змогу  
**enclose** [ɪnˈkloʊz] оточувати, обгороджувати; містити  
**encounter** [ɪnˈkɒntənt] наштовхнутися  
**encourage** [ɪnˈkɒrɪdʒ] стимулювати **endocrine** [ˈendokraɪn] ендокринний  
**enfold** [ɪnˈfəʊld] охоплювати; загортати  
**engage** [ɪnˈgeɪdʒ] залучати  
**engulf** [ɪnˈgʌlf] поглинати  
**enhance** [ɪnˈhɑːns] збільшувати, підсилювати, посилювати; поліпшувати  
**enlarge** [ɪnˈlɑːdʒ] збільшувати(ся); розширювати(ся)  
**ensure** [ɪnˈʃʊə] запевняти, гарантувати; забезпечувати  
**enter** [ˈɛntə] входити, вступати  
**enteritis** [ˈɛntəˈraɪtɪs] ентерит, запалення тонкої кишки  
**entry** [ˈɛntri] вхід; вступ  
**envelop** [ɪnˈvɛləp] обгортати; обкутувати; оточувати  
**enzyme** [ˈɛnzɑɪm] фермент, ензим  
**epidermis** [ˈɛpɪdɪˈmɪs] епідерма, епідерміс  
**epilepsy** [ˈɛpɪlɛpsɪ] епілепсія  
**epithelium** (pl. epithelia) [ˈɛpɪˈθiːliəm] епітелій  
**equalize** [ˈiːkwəlaɪz] вирівнювати, рівняти  
**eradicate** [ɪˈrædɪkeɪt] усувати, звільняти  
**erythrocyte** [ɪˈrɪθrəsaɪt] еритроцит  
**esophagus** [ɪˈsɒfəgəs] стравохід  
**estimate** [ˈestɪmeɪt] визначати, оцінювати  
**evaluate** [ɪˈvæljueɪt] оцінювати  
**evaporate** [ɪˈvæpəreɪt] випаровуватися  
**eventually** [ɪˈvenʧʊəlɪ] зрештою, нарешті, з часом  
**evident** [ˈɛvɪd(ə)nt] явний, очевидний **examine** [ɪɡˈzæmɪn] оглядати; обстежувати  
**except** [ɪkˈsept] виключати; заперечувати; за винятком, крім  
**excess** [ɪkˈses] надлишок; крайність  
**excitation** [ˈɛksɪteɪʃn] активізація, збудження  
**exchange** [ɪkˈtʃeɪnʒ] обмін; обмінювати(ся)  
**exclusively** [ɪkˈsklʊsɪvli] винятково, виключно  
**exclude** [ɪkˈskluːd] виключати, вилучати  
**excrete** [ɪkˈkriːt] виділяти  
**excretion** [ɪkˈkriːʃ(ə)n] виведення (речовини з організму), екскреція; виділення  
**excretory** [ɪkˈkriːtəri] вивідний, видільний, екскреторний  
**exhale** [ɪkˈheɪl] видихати; робити видих  
**exist** [ɪɡˈzɪst] існувати; жити  
**exit** [ˈɛksɪt] вихід  
**expand** [ɪkˈspænd] розтягувати(ся), розширювати(ся); збільшувати(ся) в об'ємі, в розмірах; поширювати(ся)

**expect** [ɪks'pekt] чекати, дожидатися  
**expectancy** [ɪks'pekt(ə)nəs] очікування, сподівання, погляди на майбутнє; ймовірність; life expectancy тривалість життя  
**expiration** [ɪk'spraɪ'reɪʃən] видих  
**exploration** [ɪk'splɔ:'reɪʃən] дослідження  
**expose** [ɪks'pəʊz] піддавати впливу  
**exposure** [ɪks'pəʊzə] зараження, контакт з джерелом зараження; стимуляція; експозиція; вплив  
**extend** [ɪks'tend] розповсюджуватися; простягати(ся); тягтися; продовжувати  
**extrinsic** [ek'strɪnsɪk] зовнішній  
**eye** [aɪ] око  
**eyeball** [aɪ'bɔ:l] очне яблуко  
**eyebrow** [aɪ'braʊ] брова  
**eyelid** [aɪ'lɪd] віко, повіка

## F

**face** [feɪs] обличчя; лице; лицьовий бік; бути поверненим (до чогось)  
**fascia** [fæʃɪə] фасція  
**fail** [feɪl] слабшати, перестати діяти; не вдаватися; зазнавати невдачі; бракувати  
**failure** [feɪljə] недостатність  
**fairly** [fɛəli] достатньо  
**fall** [fɔ:l] падати, опускатися; падіння; осінь  
**fall ill** [fɔ:l'ɪl] захворіти  
**false** [fɔ:ls] хибний, помилковий; фальшивий  
**familiar** [fə'mɪljə] добре відомий; звичайний  
**fasten** [fæ'stən] прив'язувати; прикріплювати  
**farther** [fɑ:ðə] віддалений  
**fat** [fæt] жир  
**fatigue** [fə'tɪg] втома, стомлюваність  
**fauces** [fɔ:sɪz] горло, зів  
**feed** [fi:d] харчувати(ся); жити(ся); годувати(ся); постачати; харчування; їжа  
**feel** [fi:l] відчувати, почквати  
**female** [fi:meɪl] жінка  
**ferment** [fɛ:mənt] фермент  
**fertilization** [fɛ:tɪlaɪz(ə)ʃ(ə)n] запліднення  
**fertilize** [fɛ'tɪlaɪz] запліднювати  
**fetus** [fi:təs] (утробний) плід  
**fever** [fi:və] жар, гарячка; лихоманка, підвищена температура; нервово збудження  
**fiber** [faɪbə] волокно  
**fibrinogen** [faɪbrɪnɔ:dʒɪn] фібриноген  
**fight** [faɪt] боротьба; боротися  
**filament** [fɪləmənt] філамент, тоненьке волокно або нитка  
**fill** [fɪl] наповнювати(ся); заповнювати  
**filtrate** [fɪl'treɪt] фільтрат; [fɪl'treɪt] фільтрувати  
**find** [faɪnd] знаходити; виявляти; знахідка  
**fine** [faɪn] тонкий; чудовий, прекрасний  
**finger** [fɪŋgə] палець  
**fit** [fɪt] придатний; відповідний; здатний; готовий; годиться; підходити; припасовувати; постачати  
**fix** [fɪks] укріплювати; закріплювати; встановлювати;  
**flank** [flæŋk] бік  
**flexible** [fɪksəbl] гнучкий, еластичний  
**float** [fləʊt] плавати  
**flow** [fləʊ] текти; лити(ся); течія, потік  
**fluid** [fluɪd] рідина; рідкий, текучий  
**flux** [flʌks] течія, потік; постійний рух; витікати; плавити  
**fold** [fəʊld] складати; згинати; загортати; складка, згин

**follicle** [ˈfɒlɪkl̩] фолікул  
**follow** [ˈfɒləʊ] дотримуватись, слідувати  
**food** [fuːd] їжа; харч  
**foot** [fʊt] (pl. feet) нога; ступня  
**force** [fɔːs] сила; міць; примушувати; змушувати  
**forearm** [ˈfɔːrɹm] передпліччя  
**forecast** [ˈfɔːkɹst] передбачати; завбачати  
**forehead** [ˈfɔːhd] лоб  
**foreign** [ˈfɔːrɹn] іноземний; чужорідний  
**forth** [ˈfɔːθ] вперед, далі  
**forward** [ˈfɔːwɹd] передній, передовий; уперед; далі; прискорювати; сприяти  
**fovea** [ˈfəʊvə] поглиблення, ямка  
**fracture** [ˈfrɹktʃɹ] перелом  
**fragment** [ˈfrɹgmənt] фрагмент  
**frame** [ˈfreɪm] каркас, кістяк, остов; структура, будова; система; споруджувати, будувати  
**free** [friː] вільний; безплатний; добровільний; визволяти  
**frequency** [ˈfriːkwənsɹ] частота; частотність  
**fulfil** [ˈfʊlˈfɪl] виконувати; здійснювати  
**full** [fʊl] повний  
**function** [ˈfʌŋkʃən] функція; призначення; функціонувати, діяти  
**fundamental** [ˈfʌndəˈmentl̩] основний; докорінний  
**fundus** [ˈfʌndʌs] дно  
**fungus** [ˈfʌŋɡʌs] (pl. fungi [ˈfʌŋɡə]) грибок  
**fuse** [fjuːz] об'єднувати (ся), переплітатися

## G

**gain** [geɪn] отримувати; здобувати, одержувати; домогтися; збільшення, приріст  
**gallbladder** [ˈgɔːlˈblɹdɹ] жовчний міхур  
**gargle** [ˈgɹɡl̩] полоскати (горло); полоскання  
**gate** [geɪt] вхід, вихід; ворота  
**gather** [ˈɡæθɹ] збирати; скупчуватися  
**gastric** [ˈɡestɹɹk] шлунковий, що стосується шлунку  
**general** [ˈɡenərl̩] загальний; звичайний; головний  
**germ** [ɡɹm] мікроорганізм  
**gestation** [ˈɡestəˈteɪʃ(ə)n] вагітність; період вагітності  
**get** [ɡet] діставати, одержувати; спіймати, схопити  
**girdle** [ˈɡɹdl̩] пояс  
**give** [ɡɹv] давати; віддавати; передавати; надавати  
**gland** [ɡlænd] залоза  
**glandular** [ˈɡlændjʌlɹ] гландулярний, залозовий, такий, що стосується залози  
**globulin** [ˈɡlɔːbjʊlɹn] глобулін  
**glomerular** [ˈɡlɔːmərəlɹ] клубочковий, гломерулярний  
**glue** [ɡluː] клей; скріплювальна речовина  
**go** [ɡəʊ] іти; ходити; діяти, працювати (про механізм); ставити, робитися  
**goal** [ɡəʊl] завдання, мета, ціль  
**goiter** [ˈɡəʊɹtɹ] зоб  
**gonad** [ˈɡɔːnɹd] статеві залози  
**gout** [ɡəʊt] подагра  
**grade** [ɡreɪd] градус; ступінь; ранг, чин; сорт, якість; сортувати  
**gradual** [ˈɡrædjʌl] поступовий  
**graft** [ɡrɹft] трансплантат  
**granule** [ˈɡrænjʌl] гранула  
**grasp** [ɡrɹsp] схоплювати; затискати; затиск, стиск  
**grind** [ɡraɪnd] молоти(ся), перемелювати(ся); розтирати (в порошок)  
**gripe** [ɡraɪp] стискувати; викликати біль у животі; затиск, стиск

**groin** [grɔɪn] пах  
**grow** [ɡrəʊ] рости; збільшуватися; вирощувати; ставити  
**growth** [ɡrəʊθ] зростання, ріст; збільшення  
**growth hormone** [ɡrəʊθ ˈhɔːmɒn] гормон росту  
**gullet** [ˈɡʊlət] стравохід  
**gum** [ɡʌm] ясна  
**gynaecologist** [ˈɡaɪnəˌdʒɪkɒləˌdʒɪst] гінеколог

## **H**

**habit** [ˈhæbɪt] звичка; схильність, склад; будова тіла  
**hair** [heɪr] волосся  
**half** [hɑːf] половина; половинний  
**hammer** [ˈhæmər] молоточок  
**hand** [hænd] кисть  
**hang** [hæŋ] вішати; підвішувати; висіти  
**hard** [hɑːd] твердий; тяжкий; сильно; наполегливо; важко, насилу  
**harmful** [ˈhɑːmfʊl] шкідливий, небезпечний  
**hasten** [ˈheɪstən] прискорювати  
**hazard** [ˈhæzərd] небезпека, джерело небезпеки  
**head** [hed] голова; верхня частина; прямувати; очолювати  
**headache** [ˈhedəʃk] головний біль  
**heal** [hiːl] виліковувати, зцілити; загоюватися  
**health** [helθ] здоров'я  
**hear** [heə] чути; слухати, вислуховувати  
**hearing** [ˈheərɪŋ] слух  
**heart** [hɑːt] серце  
**heat** [hiːt] теплота; жар, гарячка; нагрівати(ся)  
**heel** [hiːl] п'ятка, п'ята  
**height** [haɪt] висота; зріст; верх, верхівка, вершина  
**helminth** [ˈhelmɪnθ] глист, паразитний глист  
**hemisphere** [ˈhemɪsfiːr] півкуля  
**hepatic** [ˈheptɪk] печінковий  
**herb** [hɜːb] трава, рослина  
**hereditary** [ˈherɪdɪt(ə)rɪ] спадковий  
**hernia** [ˈhɜːniə] грижа  
**hide** [haɪd] ховати(ся)  
**high** [haɪ] високий; заввишки; у висоту; великий  
**hilum** хілус, ворота органу  
**hip** [hɪp] стегно  
**hold** [həʊld] тримати; держати; стримувати; затримувати; володіти; мати; містити; проводити  
**hollow** [ˈhɒləʊ] порожнистий; пустий; порожнина; западина  
**homeopathy** [ˈhəʊmɪəˈpæθi] гомеопатія  
**hormone** [ˈhɔːmɒn] гормон  
**however** [haʊˈevər] як би не; проте, однак, незважаючи на  
**huge** [hjuːdʒ] великий, величезний  
**human** [ˈhjuːmən] людський; людина  
**humoral** [ˈhjuːm(ə)rəl] гуморальний (що відноситься до рідких тканин організму)  
**hurt** [hɜːt] хворіти  
**hydrochloric** [ˈhaɪdrəˈklɔːrɪk] соляний, хлористий, хлористоводневий  
**hydrogen** [ˈhaɪdrədʒɪn] водень  
**hyoid** [ˈhaɪɔɪd] під'язиковий  
**hypertension** [ˈhaɪpərˈtenʃ(ə)n] гіпертонія  
**hypothalamus** [ˈhaɪpəˈθæləməs] гіпоталамус

## **I**

**identify** [aɪ'dentɪfaɪ] встановлювати  
**ill** [ɪl] хворий, недужий  
**illness** ['ɪlnəs] хвороба, захворювання **immature** [ɪ'mætʃə] cell незріла клітина **immediate** [ɪ'mɪdɪjət] негайний  
**impair** [ɪm'paɪə] погіршувати, ослаблювати, знижувати, зменшувати  
**improve** [ɪm'pru:v] поліпшувати(ся); удосконалювати  
**inability** [ɪn'æbɪlətɪ] неспроможність; неможливість  
**inaccuracy** [ɪn'ækjʊrəsɪ] неточність; помилка  
**inborn** [ɪn'bɔ:n] природжений  
**inch** [ɪnʃ] дюйм (= 2.5 см)  
**include** [ɪn'klu:d] включати; містити  
**inclusion** [ɪn'klu:ʒən] включення  
**incompatible** [ɪn'kæmpətəbəl] несумісний  
**increase** [ɪn'krɪ:s] збільшувати  
**incus** [ɪn'kʌs] ковадло (у внутрішньому вусі)  
**indicate** [ɪn'dɪkeɪt] вказувати; означати  
**indication** [ɪn'dɪkeɪʃən] показання  
**indigestion** [ɪn'dɪdʒes'tʃən] порушення травлення  
**indistinct** [ɪn'dɪstɪkt] неясний, невиразний  
**individual** [ɪn'dɪvɪdʒuəl] особистий, індивідуальний; окремих; особа, людина  
**infant** [ɪnfənt] дитина, немовля  
**infect** [ɪn'fekt] заражати  
**inferior** [ɪn'fɪərɪə] нижчий  
**inflammation** [ɪn'fleɪmə] запалюватися  
**influence** [ɪnfluəns] впливати  
**influenza** [ɪnflu'enzə] грип  
**influx** [ɪn'flʌks] впадіння  
**ingest** [ɪn'ɛst] ковтати, проковтнути  
**inherent** [ɪn'ɪnfrɪnt] властивий, притаманний  
**inherited** [ɪn'ɪerɪtɪd] спадковий  
**inhibit** [ɪn'ɪbɪt] пригнічувати, стримувати  
**inhibition** [ɪn'ɪbɪʃən] стримання, гальмування  
**injection** [ɪn'ɛkʃən] ін'єкція  
**injure** [ɪn'ɛdʒ] ушкоджувати, травмувати  
**injury** [ɪn'ɛdʒ(ə)rɪ] травма, пошкодження  
**innermost** [ɪn'ɪnəməst] той, що знаходиться глибоко усередині; внутрішній  
**insert** [ɪn'sɜ:t] вставляти  
**inside** [ɪn'saɪd] внутрішня частина; внутрішній; усередині; усередину  
**intact** [ɪn'tækt] непошкоджений  
**integrate** [ɪn'tɛgrɪtɪ] об'єднувати(ся)  
**integrity** [ɪn'tɛgrɪtɪ] ціліність; повнота,  
**integumentary** [ɪn'tɛgju'mentərɪ] покривний  
**interfere** [ɪn'tɛfə] заважати, бути перешкодою; перешкоджати; втручатися  
**interlobular** [ɪn'tɛləbʊlə] між частковий, такий, що розміщений між частками чи виникає між ними  
**internal** [ɪn'tɜ:nəl] внутрішній  
**interrupt** [ɪn'tɜ:pʌpt] переривати; заважати; втручатися  
**interstitial** [ɪn'tɜ:ʃɪəl] інтерстиційний, такий, що стосується чи розміщений між частинами або в дрібних проміжках тканини, внутрішньотканинний  
**intestine** [ɪn'testɪn] кишка; кишківник  
**intracavitary** [ɪn'trəkævɪtərɪ] внутрішньопорожнинний  
**intrathecal** [ɪn'trətʰekəl] внутрішньооболонковий  
**intravenous** [ɪn'trɪvɪnəs] внутрішньовенний  
**intrinsic** [ɪn'trɪnsɪk] внутрішній  
**introduce** [ɪn'trɒdʒu:s] вводити  
**invade** [ɪn'veɪd] уражати, захоплювати  
**invention** [ɪn'venʃən] винахід

**inward** [ˈɪnwɜːd] всередину  
**ion** [aɪən] іон  
**iris** [aɪrɪs] райдужка  
**irritability** [ˈɪrɪtəbɪləbɪləti] роздратованість  
**ischemia** [ɪsˈkiːmiə] ішемія  
**islet** [aɪlət] острівець  
**isolate** [ˈaɪsəleɪt] ізолювати; відокремлювати  
**itch** [ɪtʃ] свербіж; свербіти

## J

**jaw** [dʒɑː] щелепа; pl рот  
**jeune** [dʒuːn] худий  
**join** [dʒɔɪn] з'єднувати(ся), приєднувати(ся), об'єднувати(ся); межувати; зв'язок, з'єднання  
**joint** [dʒɔɪnt] суглоб; з'єднання; стик; з'єднувати; зв'язувати; з'єднаний; спільний  
**juice** [dʒuːs] сік  
**junction** [ˈdʒʌŋkʃən] з'єднання; сполучення; стик  
**just** [dʒʌst] саме (так), точно, якраз; щойно, тільки що

## K

**keep** [kiːp] тримати; зберігати; утримуватися (в певному стані); продовжувати  
**keratin** [ˈkerətɪn] кератин, рогова речовина  
**kidney** [ˈkɪdni] нирка  
**kidney disorder** [ˈkɪdniː dɪsˈɔːdə] захворювання нирок  
**kind** [kaɪnd] сорт, різновид; клас, розряд  
**knee** [niː] коліно  
**know** [nuː] знати; пізнавати; відрізнити  
**knowledge** [ˈnɔːlɪdʒ] знання

## L

**labial** [ˈleɪbiəl] губний  
**labyrinth** [ˈleɪbərɪnθ] лабіринт  
**lack** [læk] нестача, відсутність, брак; потреба; не мати; відчувати нестачу, потребувати, мати потребу  
**lacrimal gland** [ˈlækrɪməl] слюзова залоза  
**Langerhans islet** [ˈlɑːŋgəhɑːns ˈaɪlət] панкреатичний острівець, острівець Лангерганса  
**lamina** [ləˈmɪnə] тонка пластинка, тонкий шар  
**larynx** [ˈlærɪŋks] гортань  
**last** [lɑːst] тривати  
**laxative** [ləˈksətɪv] проносне (засіб)  
**lead** [liːd] вести, проводити; керувати  
**leak** [liːk] протікати; просочуватися; теча; витік  
**leg** [leg] гомілка; нога  
**lens** [lenz] кришталік ока  
**lesion** [ˈliːʒən] ураження  
**leukocyte (leucocyte)** [ˈluːkəsaɪt] лейкоцит **level** [ˈlevl] рівень  
**lie** [laɪ] лежати; бути розташованим, перебувати; положення  
**life-threatening** [ˈliːfθretnɪŋ] що загрожує життю  
**ligament** [ˈlɪɡəmənt] зв'язка  
**likelihood** [ˈlaɪkəlɪhʊd] вірогідність  
**limb** [lɪm] кінцівка  
**line** [laɪn] вистилати  
**lining** [ˈlaɪnɪŋ] слизова оболонка; прошарок  
**link** [lɪŋk] з'єднувати, зв'язувати  
**linking** [ˈlɪŋkɪŋ] зв'язок  
**lip** [lɪp] губа  
**lipid** [ˈlɪpɪd (ˈlɪpəɪd)] ліпід



**liquid** [ˈlɪkwɪd] рідина; рідкий  
**liver** [ˈlɪvə] печінка  
**lobe** [ˈlɒb] частка  
**lose** [lʊz] втрачати; губити; пропустити; упустити  
**lozenges** [ˈlɒzɪŋz] таблетки  
**lung** [lʌŋ] легень

## M

**main** [meɪn] головний; основне, головне  
**maintain** [meɪn'teɪn] підтримувати, утримувати, зберігати  
**maintenance** [meɪntənəns] підтримка, збереження  
**major** [ˈmeɪdʒə] головний  
**majority** [ˈmeɪdʒərɪtɪ] більшість  
**make** [meɪk] (made; made) робити; змушувати  
**malaria** [ˈmæləriə] малярія  
**male** [meɪl] чоловік  
**malignant** [ˈmælɪɡnənt] злоякісний  
**malleus** [ˈmælɪs] молоточок (вушна кісточка)  
**margin** [ˈmɑːdʒɪn] край; грань  
**mark** [mɑːk] знак; слід; позначка; відзначати; помічати  
**markedly** [ˈmɑːkɪdli] помітно; явно  
**masseter** [ˈmæsɪtə] жувальний  
**match** [mætʃ] підходити, відповідати  
**matrix** [ˈmætrɪks] матрикс, міжклітинний матеріал; основна речовина цитоплазми  
**mature** [ˈmætʃə] дозрівати, розвиватися  
**mean** [miːn] означати; призначати(ся); мати намір; думати  
**measure** [ˈmeʒə] міра; мірка; міряти, вимірювати  
**medial** [ˈmiːdiəl] медіальний, серединний  
**mediastinum** [ˈmiːdiəstɪnəm] середостіння  
**medicinal** [ˈmedɪkəl] лікарський; цілющий  
**medicine** [ˈmedɪsɪn] медицина; ліки  
**medulla oblongata** [ˈmedʊlə ˈɒblŋɡətə] довгастий мозок  
**measles** [ˈmiːzls] кір  
**measure** [ˈmeʒə] вимірювати  
**meninx (pl. meninges)** [ˈmenɪŋks] мозкова оболонка  
**mental** [ˈmentl] розумовий; психічний  
**mercury** [ˈmɜːkjʊəri] ртуть  
**microbe** [ˈmaɪkrəʊb] мікроб  
**microscope** [ˈmaɪkrəskəʊp] мікроскоп  
**midbrain** [ˈmɪdbreɪn] середній мозок  
**middle** [ˈmɪdl] середина; середній  
**mild** [maɪld] м'який; слабкий  
**mind** [maɪnd] розум; пам'ять; думка; погляд; мати на увазі; пам'ятати  
**minor** [ˈmaɪnə] незначний, другорядний; менший  
**minute** [ˈmaɪnjuːt] неістотний, незначний; дрібний; крихітний  
**mix** [mɪks] змішувати, перемішувати  
**modify** [ˈmɒdɪfaɪ] зм'якшувати; ослаблювати  
**moisten** [ˈmɒɪstən] зволожувати  
**moisture** [ˈmɒɪstʃə] волога  
**mold** [mɒld] пліснява; пліснявий грибок  
**molecule** [ˈmɒləkjʊl] молекула  
**mortality** [ˈmɔːtəlɪtɪ] смертність  
**morbidity** [ˈmɔːbɪdɪtɪ] захворюваність  
**motion** [ˈmoʊn] рух  
**mouth** [maʊθ] рот; вхід

**move** [mu:v] рухати(ся)  
**mumps** [mʌmpz] інфекційний паротит  
**muscular** [ˈmʌskjʊlə] м'язовий  
**murmur** [ˈmɜ:mɜ:] шум (серцевого або судинного походження)

## N

**nail** [neɪl] ніготь  
**narrow** [ˈnærəʊ] звужувати(ся); вузький; обмежений  
**nausea** [ˈnɔ:sjə] нудота  
**nearby** [ˈnɛəbɑ:] близький, суміжний  
**neck** [nek] шия  
**need** [ni:d] потреба; нужда; потребувати; мати потребу  
**needle** [ni:dəl] голка  
**neighbour** [ˈneɪbɔ:] сусід; межувати  
**nerve** [nɜ:v] нерв  
**nervous** [ˈnɜ:vəs] нервовий  
**network** [ˈnetwɜ:k] сітка, мережа  
**neural** [ˈnju:qrl] нервовий; що стосується нервової системи  
**neuron** [ˈnju:qrən] нейрон  
**nevertheless** [ˈnevəð(q)lɪs] проте, однак, однак  
**norepinephrine** [ˈnɔ:repɪˈnefrɪn] норепінефрин, норадреналін  
**nose** [noʊz] ніс  
**note** [noʊt] записувати; помічати, звертати увагу; примітка, посилання  
**notice** [ˈnɒtɪs] відзначати, помічати  
**noticeable** [ˈnɒtɪsəbəl] примітний  
**notify** [ˈnɒtɪfaɪ] сповіщати, повідомляти  
**nourish** [ˈnʌrɪʃ] жити; годувати  
**nourishment** [ˈnʌrɪʃmənt] годування, харчування; підтримка  
**nucleus** (pl. nuclei) [ˈnju:kliəs] ядро (клітини)  
**numbness** [ˈnʌmnəs] нечутливість, оніміння  
**nurse** [nɜ:s] медична сестра  
**nutrient** [ˈnju:trɪənt] поживний; поживна речовина

## O

**obesity** [əˈbi:siəti] ожиріння  
**object** [ˈɒbʃekt] предмет, річ; об'єкт; мета  
**oblique** [əˈblɪ:k] косий, похилий  
**obscure** [əbˈskjʊə] неясний  
**observation** [əˈbzəʊ(ː)veɪʃ(ə)n] обстеження, нагляд; спостереження  
**Obstetrics** [əbˈstetɪks] акушерство  
**obstruct** [əbˈstrʌkt] блокувати, ускладнювати прохідність  
**obtain** [əbˈteɪn] отримувати; одержувати; здобувати; домагатися  
**obvious** [əˈbvɪʃ] очевидний; явний  
**occipito-frontal** [ˌɒkɪpɪˈtɒˈfrʌntəl] потилично-лобовий  
**occupy** [ˈɒkjʊpaɪ] займати (місце і т. ін.)  
**occur** [əˈkɜ:k] виникати, відбуватися; траплятися  
**occurrence** [əˈkʌr(ə)ns] наявність  
**offer** [ˈɒfə] пропонувати; траплятися; пропозиція; спроба  
**ointment** [ˈɒɪntmənt] мазь  
**opposite** [əˈpɒzɪt] протилежний; протилежність; проти, напроти  
**orbicular** [ˌɒːbɪkjʊlə] круговий, коловий  
**orbit** [ˈɒːbɪt] очна западина  
**order** [ˈɔ:də] замовляти; приводити до ладу; призначати; порядок; наказ, розпорядження; замовлення  
**ordinary** [ˈɔ:dɪnəri] звичайний  
**organ** [ˈɔ:gən] орган

**organic** [ˈɔːɡənɪk] органічний  
**origin** [ˈɔːrɪdʒɪn] джерело; початок; походження  
**originate** [ˈɔːrɪdʒɪneɪt] брати початок, походити, виникати  
**ossicle** [ˈɔːsɪkəl] кісточка  
**otherwise** [ˈɔːðəwaɪz] інакше; або ж, у протилежному разі  
**ounce** [aʊns] унція (= 28.3 г)  
**outbreak** [aʊtbreɪk] спалах; раптова поява, початок  
**outburst** [ˈaʊtbɜːst] вибух, спалах  
**outcome** [ˈaʊtkʌm] наслідок  
**outlook** [ˈaʊtlʊk] вид; точка зору; перспектива  
**out-patient department** [ˈaʊtpeɪʃnt] амбулаторне відділення  
**output** [ˈaʊtpʊt] об'єм; викид, вихід  
**ovary** [ˈoʊvəri] яєчник  
**over** [ˈoʊvə] над, на, через; понад, більше  
**overwhelm** [ˈoʊvəwelm] перевищувати, вражати  
**oxygen** [ˈɒksɪdʒ(ə)n] кисень

## **P**

**pad** [pæd] подушечка; м'яка прокладка  
**pain** [peɪn] біль  
**palate** [ˈpælət] піднебіння  
**pale** [peɪl] блідий; бліднути  
**palm** [pɑːm] долоня  
**palpation** [ˈpælpəʃ(ə)n] пальпація  
**pancreas** [ˈpæŋkrɪəs] підшлункова залоза  
**pandemic** [ˈpændemɪk] пандемічний  
**papilla** [ˈpæpɪlə] (pl. papillae) сосочок  
**parasite** [ˈpærəsɪt] паразит  
**parathyroid (gland)** [ˈpærəθaɪrɔɪd] прищитоподібна залоза  
**parietal** [ˈpeəriətəl] парієтальний, пристінковий; тім'яний  
**parotid** [ˈpærətɪd] привушний  
**part** [pɑːt] частина; частка; сторона  
**partial** [ˈpɑːʃiəl] частковий  
**participate** [ˈpɑːtɪsɪpeɪt] брати участь  
**particular** [ˈpɑːtɪkjələ] окремих; особливий  
**pass** [pɑːs] проходити; здавати  
**passage** [ˈpæsɪdʒ] прохід, протока  
**passageway** [ˈpæsɪdʒweɪ] прохід  
**patient** [ˈpeɪʃ(ə)nt] пацієнт  
**pattern** [ˈpætərn] зразок, модель  
**pectoral** [ˈpektərəl] грудний  
**peculiarity** [ˈpeɪkjʊəlɪtɪ] особливість  
**pediatrician** [ˈpiːdɪətrɪʃ(ə)n] педіатр  
**pelvic** [ˈpelvɪk] тазовий  
**pelvis** [ˈpelvɪs] таз  
**penetrate** [ˈpenɪtreɪt] проникати всередину, проходити скрізь, пронизувати; просочувати(ся)  
**perceive** [ˈpɜːsɪv] сприймати, розуміти  
**per cent** [pɜːsent] процент, відсоток  
**percentage** [ˈpɜːsentɪdʒ] процентне відношення  
**percussion** [ˈpɜːkʌʃ(ə)n] вистукування, перкусія  
**perform** [ˈpɜːfɔːm] виконувати; здійснювати  
**persist** [ˈpɜːsɪst] утримуватись, зберігатися **peritoneal** [ˈperɪtəkuːnɪəl] очеревинний **peritoneum** [ˈperɪtəkuːnɪəm]  
очеревина **permeability** [ˈpɜːmjəbɪlɪtɪ] проникність  
**permeable** [ˈpɜːmjəbəl] проникний, прохідний, негерметичний  
**persist** [ˈpɜːsɪst] зберігати, утримувати; продовжувати

**pharmacist** [ˈfɑːmɑːsɪst] фармацевт **pharmacy** [ˈfɑːməsi] аптека  
**pharmaceutical** [ˈfɑːməˈsjuːtɪkəl] фармацевтичний  
**phlegm** [ˈfleɪm] мокротиння, мокрота, слиз  
**physician** [ˈfɪzɪʃ(ə)n] лікар  
**pia mater** [ˈpaɪəˈmeɪtə] м'яка мозкова оболонка  
**pineal gland** [ˈpaɪnɪəl] шишкоподібна залоза  
**pinna** [ˈpɪnə] вушна раковина  
**pint** [ˈpaɪnt] пінта (0,568 л)  
**pituitary gland** [ˈpɪtju(ə)ˈrɪəri] гіпофіз  
**plague** [ˈpleɪɡ] чума  
**plasma** [ˈplæzmə] плазма  
**platelet** [ˈpleɪtlet] тромбоцит, кров'яна пластинка  
**plaque** [ˈplɑːk] бляшка  
**plexus** [ˈpleksəs] сплетіння  
**pleura** [ˈpluːrə] плевра  
**pneumonia** [njuˈmeɪniə] пневмонія  
**pons** [ˈpɒnz] міст  
**porta** [ˈpɔːtə] ворота органа  
**portion** [ˈpɔːʃn] частина; частка; доля  
**possess** [ˈpɒzəs] мати, володіти  
**posterior** [ˈpɒstɪərɪəl] задній  
**posture** [ˈpɒstʃə] постава  
**potassium** [ˈpɒtəsɪəm] калій  
**powder** [ˈpaʊdə] порошок  
**practitioner** [ˈpræktɪʃən] практикуючий лікар  
**pressure** [ˈpreʃə] тиск  
**pregnancy** [ˈpregnənsɪ] вагітність  
**pregnant** [ˈpregnənt] вагітна  
**preliminary** [ˈprelɪmɪnəri] попередній  
**premature** [ˈpreməˈtʃʊə] передчасний  
**prepare** [ˈpreɪpə] готувати(ся), підготувлювати(ся)  
**prescribe** [ˈprezkrɪb] призначати; прописувати; приписувати  
**preserve** [ˈprezəv] зберігати  
**pressure** [ˈpreʃə] тиск  
**prevalence** [ˈprevələns] поширення  
**prevent** [ˈprevent] запобігати; перешкоджати  
**prevention** [ˈprevenʃn] запобігання  
**previous** [ˈpriːvjəs] попередній; передчасний  
**primarily** [ˈpraɪmərɪli] здебільшого, головним чином  
**primary** [ˈpraɪməri] первинний; початковий; основний  
**principal** [ˈprɪnsɪpəl] головний, основний  
**private** [ˈpraɪvət] приватний  
**procedure** [ˈprɒsədʃə] процедура  
**proceed** [ˈpriːsiːd] розвиватися  
**process** [ˈprɒses] відросток, виріст; процес; обробляти; переробляти  
**processed** [ˈprɒsɪst] оброблений, перероблений  
**produce** [ˈprɒdʃuːs] виробляти; створювати  
**prohibit** [ˈprɒhɪbɪt] забороняти  
**project** [ˈprɒdʒekt] проєктувати  
**prolong** [ˈprɒlɒŋ] продовжувати  
**promote** [ˈprɒməʊt] сприяти, допомагати, підтримувати  
**propel** [ˈprɒpel] просувати вперед; приводити в рух  
**proper** [ˈprɒpə] належний, необхідний; відповідний; власний; правильний  
**properly** [ˈprɒpəlɪ] відповідним чином, відповідно  
**prophylactic** [ˈprɒfɪləktɪkəl] профілактичний

**protect** [ˈprɒtɛkt] захищати; охороняти; оберігати  
**protein** [ˈprəʊtɪn] білок, протеїн  
**protuberance** [ˈprɒtjuːbrəns] опуклість; пухлина  
**prove** [pruːv] доводити; засвідчувати; виявлятися  
**provide** [ˈprɒvʌd] забезпечувати  
**psychiatric** [ˈsaɪkɪətrɪk] психіатричний  
**puffy** [ˈpʊfi] одутлий; що має задишку  
**pull** [pʊl] притягувати, втягувати; тягти; натягувати; смикати; витягувати; розтягувати; розривати  
**pulse** [pʊls] пульс  
**pump** [pʌmp] нагнітати  
**puncture** [ˈpʌŋktʃə] укол; пункція  
**pupil** [ˈpjʊpl] зіниця  
**pure** [pjʊə] чистий; бездоганний  
**purpose** [ˈpɜːps] намір; мета; мати за мету; мати намір  
**purulent** [ˈpjʊərələnt] гнійний  
**pus** [pʊs] гній  
**push** [puʃ] проштовхувати, штовхати; поштовх; тиск, напір; зусилля; спонукання  
**put** [pʊt] покласти, класти; поставити, ставити; приводити (в певний стан); визначати  
**pyloric** [ˈpaɪlərɪk] пілоричний

## Q

**quality** [ˈkwɒlətɪ] якість; характерна особливість  
**quantity** [ˈkwɒntəntɪ] кількість  
**quarantine** [ˈkwɒr(ə)ntɪːn] карантин  
**quick** [kwɪk] швидкий; жвавий  
**quinsy** [ˈkwɪnzɪ] ангіна

## R

**raise** [reɪz] підвищувати; піднімати  
**range** [reɪŋdʒ] коливатися (в певних межах); ряд; лінія; сфера; коло; межа; діапазон  
**rare** [rɪə] рідкісний; незвичайний  
**rash** [ræʃ] висип  
**rate** [reɪt] норма; темп; розряд, сорт; швидкість; частота; відношення; оцінювати  
**rather** [ˈræðə] досить; дещо; до деякої міри; краще  
**ratio** [ˈreɪʃo] (спів)відношення  
**rawness** [ˈrɔːnɪs] хворобливість  
**reach** [riːtʃ] досягати; простягатися; доходити; діапазон; різноманітність  
**react** [riːkt] реагувати  
**reason** [ˈriːzn] причина; підстава; міркувати; переконувати  
**receipt** [riːsɪt] рецепт  
**receive** [riːsɪv] отримувати; знаходити; приймати, акумулювати, вміщувати, збирати  
**recognition** [ˈrekəgnɪʃən] (роз)пізнання; визнання  
**record** [rɪˈkɔːd] реєструвати  
**recover** [rɪˈkʌvə] відновлювати, видужувати  
**recovery** [rɪˈkʌvəri] видужання, одужання  
**recur** [rɪˈkɜː] повторюватися, відбуватися знову, рецидивувати  
**reduce** [rɪˈdʒuːs] послаблювати, знижувати, скорочувати, зменшувати  
**refer** [rɪˈfɜː] відносити, приписувати; належати; стосуватися; посилатися  
**reflect** [rɪˈflekt] відобразити, відбивати  
**reflux** [rɪˈflʌks] відтікання, відплив, рефлюкс  
**refract** [rɪˈfrækt] заломлювати  
**regenerate** [rɪˈdʒenəreɪt] відроджуватися  
**regime** [reɪˈʒiːm] режим  
**relapse** [rɪˈlæps] рецидив; знову захворіти  
**relay** [rɪˈleɪ] передавати

**release** [rɪˈliːs] виділяти, випускати; звільняти; звільнення  
**relief** [rɪˈliːf] полегшення; допомога  
**relieve** [rɪˈliːv] полегшувати; звільняти  
**renal** [rɪˈn(ə)] нирковий  
**remain** [rɪˈmeɪn] залишатися, перебувати, знаходитися  
**remedy** [ˈremɪdi] ліки  
**remind** [rɪˈmaɪnd] нагадувати  
**removal** [rɪˈmuːv(ə)] видалення; усунення  
**remove** [rɪˈmuːv] видаляти; усувати  
**renal** [rɪˈn(ə)] нирковий  
**repair** [rɪˈpeɪr] відновлення, регенерація  
**replace** [rɪˈpleɪs] заміщати  
**replenish** [rɪˈplɛnɪʃ] поповнювати(ся), оновлювати  
**represent** [ˈreprɪzɛnt] означати; символізувати, зображувати; являти (собой), бути  
**request** [rɪˈkwest] прохання; запит; просити; запитувати  
**require** [rɪˈkwaɪr] вимагати  
**research** [rɪˈsɜːtʃ] (наукове) дослідження; ретельні пошуки  
**resemble** [rɪˈzembəl] бути схожим, подібним, походити, мати схожість  
**respect** [rɪˈspekt] відношення; повага; поважати  
**respective** [rɪˈspektɪv] відповідний **respiration** [ˌresprəˈreɪʃ(ə)n] дихання  
**respiratory** [rɪsˈpraɪrətɔːri] дихальний  
**respond** [rɪˈspɒnd] реагувати; відповідати  
**resist** [rɪˈzɪst] чинити опір; протидіяти  
**rest** [rest] решта  
**restraint** [rɪˈstreɪnt] обмеження; стримувати; утримувати  
**result** [rɪˈzʌlt] впливати; виходити; результат  
**result in** [rɪˈzʌltɪn] мати результатом; призводити до; закінчуватися  
**result from** [rɪˈzʌltfrɒm] відбуватися в результаті, бути наслідком  
**retain** [rɪˈteɪn] утримувати; зберігати  
**retard** [rɪˈtɑːd] уповільнювати; затримувати  
**retina** [rɪˈteɪnə] сітківка, сітчаста оболонка  
**retraction** [rɪˈtrækʃən] стягування, скорочення; утягування  
**return** [rɪˈtuːn] вертатися, йти назад  
**reveal** [rɪˈviːl] показувати, виявляти; відкривати  
**rib** [rɪb] ребро  
**rib cage** [rɪbˈkeɪʃ] грудна клітка  
**rigid** [rɪˈdʒɪd] жорсткий, твердий, негнучкий  
**rigidity** [rɪˈdʒɪtɪ] задубіння, ригідність  
**rinse** [rɪns] полоскати; полоскання  
**rough** [rʌf] нерівний; шершавий; грубий; приблизний  
**route** [raʊt] шлях, напрям  
**row** [raʊ] ряд  
**rubella** [ruːˈbɛlə] краснуха  
**rudiment** [ˈrʌdɪmənt] рудимент, зачаток **runny nose** [ˈrʌnɪˈnəʊz] нежить

## S

**sac** [sæk] мішечок, мішок  
**safe** [seɪf] захищений; безпечний; неушкоджений  
**saliva** [səˈlɪvə] слина  
**salivary gland** [səˈlɪvəriˈɡlænd] слинна залоза  
**salve** [sɜːv] цілюща мазь  
**same** [seɪm] той самий, однаковий  
**sample** [ˈsɑːmpəl] мазок  
**save** [seɪv] рятувати; берегти  
**scar** [skɑː] шрам, рубець; залишати рубці, шрами; зарубцьовуватися

**scarlet fever** [*ˈskɑːlɪt ˈfɛːvə*] скарлатина  
**scientist** [*ˈsaɪəntɪst*] учений  
**sclera** [*ˈsklɪərə*] склера, білкова оболонка ока  
**scapula** [*ˈskæpjʊlə*] лопатка  
**segment** [*ˈseɡmənt*] ділянка, сектор  
**sedative** [*ˈsedətɪv*] заспокійливий засіб; заспокійливий  
**seem** [*si:m*] здаватися  
**segment** [*ˈseɡmənt*] частина; частка; сегмент  
**seizure** [*ˈsiːzə*] напад, епілепсія  
**seldom** [*ˈseldəm*] рідко  
**select** [*sɪˈlekt*] вибирати, відбирати, добирати  
**senior** [*ˈsiːnjə*] старший; старшокурник  
**sense** [*sens*] чуття; почуття; відчуття; свідомість; здоровий розум; почувати, відчувати; розуміти  
**sensitive** [*ˈsensɪtɪv*] чутливий; уразливий  
**separate** [*ˈsepəreɪt*] окремий; ізольований; [*ˈsepəreɪt*] відділяти(ся), розділяти(ся); роз'єднувати; розкладати  
**serum** [*ˈsɛrəm*] сироватка  
**serve** [*sɜːv*] служити; виконувати; сприяти  
**service** [*ˈsɜːvɪs*] служба; сфера діяльності; обслуговування, сервіс; послуга  
**set** [*set*] ставити, класти; розміщувати; визначати, установлювати; ставити; подавати; стискувати, зіплювати; приводити в певний стан; вправляти (суглоб, кістку)  
**severe** [*ˈsɪvɪə*] тяжкий, серйозний  
**severity** [*ˈsɪvərɪtɪ*] тяжкість  
**sex** [*seks*] стать  
**shape** [*ˈʃeɪp*] форма, обрис; вигляд; образ; надавати форми; утворювати, робити  
**sharp** [*ˈʃɑːp*] гострий, різкий  
**sheath** [*ˈʃeɪθ*] оболонка  
**shortage** [*ˈʃɔːtɪdʒ*] нестача, недолік; дефіцит  
**shoulder** [*ˈʃəʊldə*] плече; плечовий суглоб  
**sick** [*sɪk*] хворий; що відчуває нудоту  
**sight** [*sɑɪt*] зір  
**sign** [*saɪn*] ознака, прикмета  
**significance** [*ˈsɪɡnɪfɪkəns*] значення; важливість  
**similar** [*ˈsɪmɪlə*] схожий, подібний  
**simultaneously** [*ˌsɪm(ə)lˈteɪnjəsli*] разом, одночасно, спільно  
**since** [*sɪns*] з, після  
**skilled** [*ˈskɪld*] кваліфікований  
**skin** [*skɪn*] шкіра  
**sleep** [*slɪp*] сон  
**smell** [*smel*] запах; нюх; відчувати запах; нюхати  
**smooth** [*smuːð*] гладенький, рівний  
**soak** [*səʊk*] просякнути; вимочувати; поглинати(ся)  
**sodium** [*ˈsəʊdɪəm*] натрій  
**solid** [*ˈsɒlɪd*] твердий  
**soluble** [*ˈsɒljubl*] розчинний  
**solute** [*ˈsɒljʊt*] розчинена речовина  
**solution** [*səˈluːʃn*] розчин  
**solvent** [*ˈsɒlv(ə)nt*] розчинник  
**soreness** [*ˈsɔːnəs*] біль, болісність  
**sore throat** [*ˈsɔːˈθroʊt*] хворе горло  
**sound** [*saʊnd*] звук; шум; міцний; здоровий  
**spastic** [*ˈspæstɪk*] спастичний, спазматичний  
**spasticity** [*ˈspæstɪsɪtɪ*] спастика, спастичність  
**specialize** [*ˈspeʃəlaɪz*] адаптуватися, пристосовуватися  
**sphincter** [*ˈsfɪŋktə*] сфінктер  
**spinal** [*ˈspaɪnəl*] спинний

**spinal cord** [ˈspɑːlnəl ˈkɔːd] спинний мозок  
**spine** [spaɪn] хребет  
**spleen** [spliːn] селезінка  
**spongy bone** [ˈspɒndʒi baʊn] губчаста кісткова речовина  
**spot** [spɒt] пляма; ділянка ураження; місце  
**sprain** [sprɑɪn] розтягнення зв'язок; розтягувати зв'язки  
**spread** [sprɛd] поширювати(ся); простягатися, розкинутися; поширення  
**sputum** [ˈspjuːtəm] мокротиння  
**squamous** [ˈskweɪməs] сквамозний, покритий лусочками  
**stapes** [steɪpɪːz] стремінце  
**stature** [ˈstɜːtʃə] зріст; статура  
**steady** [ˈstedʒ] стійкий; міцний; постійний, сталий; рівномірний  
**sterilizing drum** [ˈsterɪlaɪzɪŋ drʌm] стерилізаційний бікс  
**sticky** [ˈstɪki] липкий  
**stiffness** [ˈstɪfnɪs] нерухливість; жорсткість  
**stirrup** [ˈstɪrʌp] стремінце (слухова кісточка середнього вуха)  
**stomach** [ˈstʌmək] шлунок  
**storage** [ˈstɔːrɪdʒ] накопичення; акумулювання; зберігання  
**store** [stɔː] берегти, зберігати; запас  
**strain** [streɪn] штам  
**strand** [strænd] ланцюг, нитка; молекулярний ланцюжок  
**strengthen** [ˈstreŋθən] зміцнювати  
**streptococcus** (pl. streptococci) [ˈstreptəˈkɒkəs] стрептокок  
**striated** [ˈstraɪeɪtɪd] посмугований  
**strike** [straɪk] вдаряти(ся)  
**stroke** [streɪk] інсульт, порушення мозкового кровообігу  
**stuffy** [ˈstʌfi] утруднюючий дихання, закладений  
**subcutaneous** [ˌsʌbkjuːˈteɪnjəs] підшкірний **subdivision** [ˌsʌbdɪˈvɪʒən] послідовне ділення  
**subject** [ˈsʌbdʒɪkt] предмет  
**sublingual** [ˌsʌblɪŋˈɡw(ə)l] під'язиковий  
**successfully** [s(ə)kˈsesfʊlɪ] удачно  
**sudden** [ˈsʌdn] раптовий  
**suffer (from)** [ˈsʌfə] хворіти, страждати  
**suggest** [səˈdʒest] пропонувати; наводити на думку; натякати  
**suitable** [ˈsjuːtəbəl] підходящий, придатний, відповідний  
**superficial** [ˈsjupərˈfɪʃəl] зовнішній; поверховий, неглибокий  
**superior** [sjuːˈpɪərɪəl] верхній, розташований вище  
**support** [səˈpɔːt] підтримувати  
**suppository** [səˈpɔːzɪt(ə)rɪ] супозиторій  
**suppress** [səˈpres] припиняти; стримувати **surface** [ˈsqːfɪs] поверхня  
**surgeon** [ˈsɜːdʒən] хірург  
**surgery** [ˈsqːdʒərɪ] хірургія; хірургічне втручання  
**surround** [səˈraʊnd] оточувати  
**survive** [səˈvaɪv] вижити; пережити  
**suspect** [səˈspekt] підозрювати, робити припущення; вважати  
**susceptible** [səˈseptəbəl] сприйнятливий, вразливий  
**susceptibility** [səˈseptəbɪlɪtɪ] схильність; сприйнятливість, чутливість  
**suspect** [səˈspekt] підозрювати  
**suspend** [səˈsɛnd] висіти, плавати; підвішувати, схилитися; удержуватися, утримуватися  
**suture** [ˈsjuːtʃə] шов  
**sweat** [swet] потовиділення; піт; пітніти  
**swallow** [ˈswɒləʊ] ковтати  
**swell** [swel] опуклість; пухлина; збільшуватися; пухнути  
**swollen** [ˈswɒləʊn] запалений; припухлий  
**syllabus** [ˈsɪləbəs] програма



**synapse** [ˈsɑːnsɪps] синапс  
**syringe** [ˈsɪrɪndʒ] шприц  
**systole** [ˈsɪstəli] систола

## T

**take** [teɪk] брати, взяти; оволодівати; споживати, приймати (їжу тощо)  
**target** [ˈtɑːɡɪt] мішень  
**taste** [ˈteɪst] смак; проба; пробувати на смак  
**tear** [tɪə] сльоза  
**temple** [ˈtempəl] скроня  
**temporal** [ˈtemp(ə)r(ə)l] скроневий  
**tendon** [ˈtendən] сухожилля  
**term** [tɜːm] період, строк, термін; семестр; термін, слово  
**testicle** [ˈtestɪkl] яєчко  
**thalamus** [ˈθæləməs] таламус  
**therapist (therapist)** [ˈθerəˈpɪst] терапевт  
**therapy** [ˈθerəpi] терапія  
**thereby** [ˈðeəˈbaɪ] за допомогою цього; таким чином; у зв'язку з цим; поблизу  
**therefore** [ˈðeəˈfɔː] тому, отже  
**thick** [θɪk] товстий; густий  
**thigh** [θaɪ] стегно (частина нижньої кінцівки)  
**thin** [θɪn] тонкий; рідкий, розріджений; робитися тонким, тоншати  
**thirst** [θɜːst] спрага  
**thoracic** [θəˈræksɪk] грудинний  
**thorax** [ˈθɒræks] грудна клітина  
**though** [ðəʊ] все-таки, однак, проте; хоч, хоча  
**threat** [θret] погроза, загроза  
**throat** [θrəʊt] горло  
**thrombocyte** [ˈθrɒmbəsaɪt] тромбоцит  
**through** [θruː] через, крізь  
**throughout** [θruːˈaʊt] у всіх відношеннях; усюди  
**thumb** [θʌm] великий палець (руки)  
**thymus gland** [ˈθaɪməs ˈɡlænd] тимус, загрудинна залоза, тимус  
**thyroid (gland)** [ˈθaɪrɔɪd] щитоподібна залоза  
**tiny** [ˈtaɪni] дуже маленький, крихітний  
**tissue** [ˈtɪʃjuː, ˈtɪʃuː] тканина  
**toe** [tuː] палець на нозі  
**tongue** [tʌŋ] язик  
**tonsil** [ˈtɒnsəl] мигдальовидна залоза  
**top** [tɒp] верхівка; вершина; вищий ступінь; верхній  
**tough** [tʌʃ] щільний  
**trace** [treɪs] слідкувати  
**trachea** [ˈtrækiə, ˈtreɪkiə] трахея  
**transfusion** [ˌtrænsˈfjuːʒ(ə)n] переливання  
**transparent** [ˌtrænsˈpær(ə)nt] прозорий  
**treat** [tri:t] лікувати; обробляти, піддавати дії  
**treatment** [ˈtri:tment] лікування; обробка  
**tremor** [ˈtreɪmər] тремтіння, тремор  
**trial** [ˈtraɪ(ə)l] випробування, дослід  
**trouble** [ˈtrʌbl] турбувати  
**trunk** [ˈtrʌŋk] тулуб  
**tube** [tjuːb] труба  
**Eustachian tube** [juːˈsteɪʃjən] евстахієва труба  
**tuberculosis** [tjuː(ː)ˈbʊkjʊˈlɪkʊsɪs] туберкульоз  
**tubule** [ˈtjuːbul] судина, канадець

**tuft** [tʌft] пучок  
**tumor** [ˈtjuːmə] неоплазма, новоутворення; пухлина  
**tunic** [ˈtjuːnɪk] покриття; оболонка  
**tunica** [ˈtjuːnɪkə] оболонка  
**tunica adventitia** [ˈtjuːnɪkə ˈædvenˈtɪʃɪʃə] адвентиціальна оболонка  
**tunica intima** [ˈtjuːnɪkə ˈɪntɪmə] внутрішня оболонка  
**typhus** [ˈtaɪfəs] висипний тиф  
**typical** [ˈtɪpɪkəl] типовий

## U

**ulcer** [ˈʌlsə] язва  
**underlying** [ˌʌndəˈlaɪɪŋ] лежачий, розташований  
**unevenly** [ˈʌnɪˈvɛnli] нерівно, нерівномірно **upset** [ˈʌpˈset] порушення, розлад  
**urea** [ˈjuːrɪə] сечовина  
**ureter** [ˈjuːrɪtə] сечовід  
**urethra** [ˈjuːrɪˈθrɪə] уретра, сечівник  
**urinary** [ˈjʊrɪnəri] сечовий  
**urinary bladder** [ˈjʊrɪnərɪ ˈblædər] сечовий міхур  
**urination** [ˈjʊrɪneɪʃən] сечовипускання **urine** [ˈjuːrɪn] сеча  
**utilize** [ˈjuːtɪləʊz] використовувати, вживати

## V

**vary** [ˈveɪəri] відрізнятись, змінювати(ся)  
**vault** [vɔːlt] склепіння  
**vein** [veɪn] вена  
**ventricular** [venˈtrɪkjʊlə] шлуночковий, відносящийся до шлуночку, вентрікулярний  
**vernix** [ˈvɛːnɪks] сировидна змазка, першородна змазка  
**vessel** [ˈvesl] судина  
**via** [ˈviːə] через, крізь  
**villus** (pl. villi) [ˈvɪljʊs] ворсинка  
**virus** [ˈvaɪrəs] вірус, збудник захворювання  
**viscera** [ˈvɪʃərə] внутрішні органи  
**visceral** [ˈvɪʃərəl] вісцеральний, внутрішній  
**vitamin** [ˈvɪtəmɪn; ˈvaɪtəmɪn] вітамін  
**volume** [ˈvɔːljʊm] обсяг, об'єм  
**voluntary** [ˈvɔːlɪnt(ə)rɪ] довільний  
**vomiting** [ˈvɔːmɪtɪŋ] блювання  
**vulnerable** [ˈvʌlnərəbəl] уразливий

## W

**ward** [wɔːd] палата  
**warning** [ˈwɔːnɪŋ] попередження; застереження  
**waste** [weɪst] непотрібний, зайвий, непридатний, некорисний  
**watch** [wɔːtʃ] спостереження; спостерігати; стежити  
**wave** [weɪv] хвиля; хвилястість; колихатися  
**wax** [wɒks] сира  
**way** [weɪ] дорога; шлях; засіб; відстань; характерна риса  
**weakness** [ˈwiːknɪs] слабкість  
**weight** [weɪt] вага  
**wet** [wet] мокрий, вологий; зволожувати  
**whooping cough** [ˈhuːpɪŋ ˈkɔːf] кашлюк  
**wink** [wɪŋk] моргання; кліпання; моргати; кліпати  
**wipe** [waɪp] витирати; утирати  
**within** [wɪˈdɪn] в, у межах, всередині; протягом  
**wound** [waʊnd] рана

**wrinkle** [ˈrɪŋkəl] зморшка; морщити(ся)

**wrist** [ˈrɪst] зап'ясток

## **X**

**X-ray** [ˈeksˈreɪ] рентген; рентгенівське випромінювання

## **Y**

**yawn** [jɔːn] позіхати; позіхання

**yeast** [jɛːst] дріжджі

**yellow** [ˈjɛləʊ] жовтий

**yolk** [jɔːk] жовток

## **Z**

**zinc** [zɪŋk] цинк

**zone** [zəʊn] зона, пояс; смуга; район; поділяти на зони; оточувати

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