

Lexical and Grammar Features of Academic Writing in Medical English

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English as a Global Language in Science and Technology

- The prevalence of English as not only the *lingua franca*, but as an important transmission medium of scientific knowledge in our time compels the professionals in all spheres of science and technology to render their research results in English in order to be understood and acknowledged, and ultimately to succeed in the wider English-speaking world.
- In order to achieve this, it is necessary to acquire the so-called “*academic literacy*” in the English language.
- Therefore, PhD students are expected to be not only fluent in English, but also well-versed in the academic style and standards of the English language.

Academic English as a Foreign Language

- Academic writing in English possesses a number of features and norms that are **different** from those of Ukrainian or Russian.
- It is crucial for medical professionals to know the peculiarities of academic writing in English in order to be able to produce effective English language academic discourse and thus share their knowledge and findings with fellow researchers from all over the world.
- It is well established that transfer of academic norms of a person's first language (mother tongue) to a foreign language often significantly impairs the quality of academic writing and speaking (Crandall & Peyton, 1993; Swales, 2012).
- Therefore, the major challenge for Ukrainian researchers is the difficulty in **transition to academic standards of a foreign language.**

In this lecture, we will:

- Consider such genres of academic discourse as Abstract, Research Article, and Case Report.
- Review the most important English grammar structures which are used in academic writing.
- Discuss the English vocabulary, essential for improving the quality of academic style.
- Analyze the samples of academic discourse from *PubMed* database.
- Identify the common errors in English medical writing.
- Trace the modern tendencies of English medical discourse.

ABSTRACT

(Adapted from: *How to write a good abstract for a scientific paper or conference presentation* by C. Andrade. *Indian J Psychiatry*. 2011; 53(2): 172–175)

- An **abstract** is a short description of the **purpose** of a piece of work, research paper, report etc. It is always at the beginning of a paper.
- Most international, peer-reviewed journals require abstracts to conform to their own, set structure within a word count of 200–250 words. The usual sections are **Background**, **Methods**, **Results**, and **Conclusions**.
- Other headings may be used, e.g., **Introduction** or **Rationale** (in place of **Background**) or **Findings** in place of **Results**.
- Some journals include additional sections, such as **Objectives** (between **Background** and **Methods**) and **Limitations** (at the end).

ABSTRACT

- - **Background.** This should be the shortest part of the abstract and very briefly outline: what is already known about the subject, related to the paper; and what is not known and thus what the study examined or the paper presents.
- - **Methods.** This should contain enough information to enable the reader to understand what was done and how.
- - **Results.** This is the most important part of the abstract. It will therefore be the longest part and should contain as much detail about the findings as the journal word count permits.
- - **Conclusions.** This section contains the key message of the study, expressed in a few precisely worded sentences. It is customary, but not essential, for the authors to express an opinion about the theoretical or practical implications of the findings, or the importance of their findings for the field.

Contextual Use of Verb Tenses in Abstracts

- **The present tense** is appropriate for the Background section of abstracts (“The prevalence of pre-diabetes mellitus and its consequences in patients with heart failure and reduced ejection fraction **are not known**”).
- **The present perfect tense** can also be used in the Introduction section of abstracts (“This method of treatment **has been considered** inappropriate for these disorders”).
- The actual research (the Methods and Results sections) is written in **the past tense** (“Saliva flow in patients **was measured** by sialometry”; “We **examined** clinical outcomes in 8399 patients with heart failure and reduced ejection fraction”).

Active/Passive Voice

- The passive is often used in academic writing, as some people consider it to be impersonal and thus more objective (e.g., “the tolerability of this surgical technique **was examined**”).
- In general, passive voice is used to describe a **process**, the **results** of study, or similar material which is **objective** in nature. Active voice is used to describe **actions**.
- The choice of active/passive voice depends on the context. Clarity of meaning is paramount in medical research. The aim must be to avoid any possibility of confusion in the written and spoken meaning.
- Therefore, it is usually appropriate to use **a good balance** of passive and active forms within academic writing.

Research Article (RA)

(definition by *Swales 1990: 93*)

- RA is a written text, usually limited to a few thousand words, that reports on some investigation carried out by its author or authors.
- In addition, the RA will usually relate the findings within it to those of others, and may also examine issues of theory and/or methodology.
- It is to appear or has appeared in a research journal or, less typically, in an edited book-length collection of papers.



A word cloud centered around the words "Academic" and "Writing". The word "Academic" is in a large, green, serif font, and "Writing" is in a large, brown, serif font. Surrounding these are various smaller words in different colors and orientations, including: vocabulary, punctuation, referencing, quoting, synthesising, reflection, originality, spelling, structure, purpose, grammar, paraphrasing, style, audience, summarising, language, and punctuation.

An illustration of the hourglass metaphor of RA organization

- A commonly used metaphor when trying to describe the organization of RA is the **hourglass** (Hill et al. (1982), Swales (1990: 134)). The hourglass has a wide top and bottom, and a more narrow middle part:
- The idea behind the hourglass model is that a transition is made between the general field of study, to the particular study reported in the article, and then another transition at the end of the article, where a move is made from the findings in the particular study to implications for the general field.

INTRODUCTION

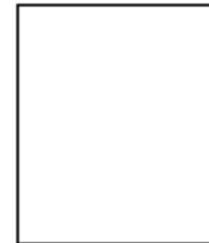


general



particular

PROCEDURE



particular



general

DISCUSSION



Tense Choice in RA

Structural elements of research	Tense(s)	Examples
Introduction	Present simple tense	<p><i>Diabetes mellitus is a group of diseases associated with various metabolic disorders, the main feature of which is chronic hyperglycemia due to insufficient insulin action. Its pathogenesis involves both genetic and environmental factors. The long-term persistence of metabolic disorders can cause susceptibility to specific complications and also foster arteriosclerosis.</i></p>
Relevance and novelty (referring to previous research)	Present perfect tense	<ul style="list-style-type: none"> • <i>Later prospective studies have proved that lowering this trigger to $10 \times 10^9/L$ in stable patients with cancer or blood disorders is still safe.</i> • <i>Some case reports have described platelet normalization shortly after starting antibiotic therapy without a need for platelet transfusion.</i> • <i>Other authors have noted that the latency period ranges from 3.5 to 33 years (median 10 years).</i>

Tense Choice in RA

Structural elements of research	Tense(s)	Examples
Methods	Past simple tense	<ul style="list-style-type: none"> • We <u>studied</u> the effects of a melatonin-aluminum oxide-polymethylsiloxane complex (complex M) on the expression of apoptosis regulators. • We <u>examined</u> clinical outcomes in 8399 patients with heart failure and reduced ejection fraction according to history of diabetes mellitus and glycemic status. Patients with a history of diabetes mellitus <u>had</u> a higher risk of the primary composite outcome of heart failure hospitalization. The benefit of valsartan compared with enalapril <u>was</u> consistent across the range of HbA1c in the trial.
Diagrams and figures	Present simple tense	Table 1 above <u>demonstrates</u> the success of cloning in various animal species. Figure 2 below <u>shows</u> methylation in mouse 2-cell embryos.

Tense Choice in RA

Structural elements of research	Tense(s)	Examples
<p>Results</p>	<p>Past simple tense</p>	<p>Overall, 2907 (35%) patients had a history of diabetes mellitus. A total of 4013 (49%) patients were, therefore, defined as having diabetes mellitus based on history (n=2907). Results indicated that the median follow-up in patients with normal HbA1c was 26 months, and it was 27 months in both patients with pre-diabetes mellitus and diabetes mellitus.</p>
<p>Discussion</p>	<p>Present simple tense</p>	<p>This study has 3 key findings. First, although it is known that the prevalence of diabetes mellitus is high in patients with HF-REF, it seems that both pre-diabetes mellitus and undiagnosed diabetes mellitus are also common in these patients. Second, non-diabetic dysglycemia (pre-diabetes mellitus) is associated with a substantially increased risk of adverse outcomes in HF-REF. Finally, LCZ696 (sacubitril/valsartan) is superior to enalapril, irrespective of glycemic status.</p>

Tense Choice in RA

Structural elements of research	Tense(s)	Examples
<p>Conclusion</p>	<p>A combination of tenses</p>	<p><i>Recent interventional trials have shown that lifestyle modifications and/or antidiabetic medications have metabolic benefits, such as reducing postpartum diabetes, but these interventions were not as effective as they were in the non-gravid population. Type 2 diabetes mellitus is still rare in childhood and adolescence, but recent reports indicate an increasing prevalence around the world possibly due to increasing prevalence of obesity in children and adolescents. It is becoming increasingly clear that obese children and adolescents with clinical signs of insulin resistance should be screened for type 2 diabetes mellitus.</i></p>

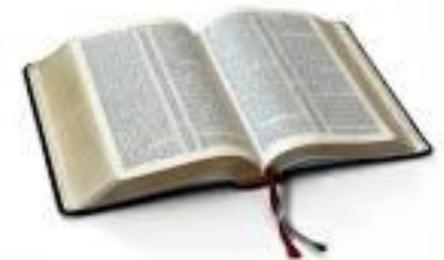
Impersonal “it”-constructions

(“it seems / it appears / it is clear that / it is important to point out / it is necessary to bear in mind”, etc.)

- The “it”-constructions depersonalize text and create an impression of the writer’s distance and objectivity.
- *E.g.*, in *Type 2 diabetes mellitus in children and adolescents* by Thomas Reinehr (*World J Diabetes*. 2013; 4(6): 270–281.):
 - ✓ “**It is well recognized** that insulin resistance to insulin-stimulated glucose uptake is a characteristic finding in patients”;
 - ✓ “**...it is not surprising** that the peak age at presentation of type 2 diabetes mellitus in children coincides with the usual age of mid-puberty”;
 - ✓ “**It is interesting to note** that adipose tissue expanding in the obese state synthesizes and secretes metabolites”;
 - ✓ “**...it is likely** that type 2 DM is a common condition in childhood”;
 - ✓ “**It is unclear** whether foot examinations are important in children”;
 - ✓ “**It is questionable** that the traditional techniques used to optimize glycemic control in patients with type 1 diabetes mellitus are also useful in children”;
 - ✓ “**...it is debatable** whether the most appropriate context for therapy is a pediatric hospital”.

Adverbial Clauses

- Adverbial clauses are used for reallocation of data in order of importance: the most important information goes into the main clause, and secondary information goes into the adverbial clause:
 - **cause and effect** (e.g., clauses with “because”, “as”, “since”, “so”, “in order that”, “now that”, “inasmuch as”).
 - **conditional clauses** (e.g., “if”, “in case”, “unless”, “provided that”).
 - **concession clauses** (e.g., clauses with “although”, “though”).
 - **contrast** (e.g., clauses with “though”, “although”, “while”, “whereas”, “even though”).



Reporting Verbs

- Reporting verbs are widely used for paraphrasing, writing reviews, and citing information from other sources.
- *E.g.:* The author **acknowledges, adds, advocates, affirms, agrees, alleges, analyses, argues, asserts, assures, believes, claims, comments, concludes, confirms, contends, describes, discusses, emphasizes, explains, expresses, identifies, indicates, maintains, mentions, observes, points out, questions, remarks, reports, states, underscores**, etc.



Formality levels

(Adapted from: C.B. Norris. *Academic Writing in English*, 2014)

Avoid these

a bit

a couple

a lot, a lot of, lots of

anyhow

anyway

besides; too

enough

fix (verb)

give (verb)

Choose among these

a little, slightly, somewhat

two, a pair (for people, “couple” implies man and woman)

several, many, multiple

in any case, in any event, nevertheless, nonetheless

although, thus, however

• also, in addition, likewise; furthermore, moreover

sufficient

arrange, manage, handle

supply, furnish, offer, provide, yield



Formality levels



Avoid these

gone; none

hard

let (v)

little (= few)

look for (v)

make

plenty of

pretty; quite

quite X

so

start (v)

Choose among these

lacking, absent; missing

difficult, demanding, laborious, time-consuming

allow, permit, give permission for

few, insufficient, lacking, rare, scarce, sparse

try to find, seek (sought), search for

produce, construct, form, compose, build, create, originate, constitute

abundant, ample (vs. sparse), numerous, frequent (occurring over time)

somewhat, almost, moderately, not uncommon, not infrequent

very (a weak word), rather, considerably, noticeably, notably, markedly

therefore, thus, hence

begin, initiate, undertake

Formality levels

Avoid these

take (v)

think X is

though

so

start (v)

take (v)

think X is

though

too

try (to)

turn out (v)

way

work out (v)

Choose among these

adopt (100%), adapt (with changes), transfer, possess

consider X to be, judge X to be, deem X to be

even though, although, notwithstanding

therefore, thus, hence

begin, initiate, undertake

adopt (100%), adapt (with changes), transfer, possess

consider X to be, judge X to be, deem X to be

even though, although, notwithstanding

also, in addition, as well as, likewise

attempt to / endeavor to

prove/proven to be X (show by evidence; "It proved to be a wise choice.")

means, approach, method, procedure, manner

solve, resolve, determine, devise, OR clarify, elucidate

ACADEMIC VOCABULARY:

General explaining

- 1. ***In order to***

“In order to” can be used to introduce an explanation for the purpose of an argument.

- 2. ***In other words***

Use “in other words” when you want to express something in a different way (more simply), to make it easier to understand, or to emphasise or expand on a point.

- 3. ***To put it another way***

This phrase is another way of saying “in other words”, and can be used in particularly complex points, when you feel that an alternative way of wording a problem may help the reader achieve a better understanding of its significance.

- 4. ***That is to say***

“That is” and “that is to say” can be used to add further detail to your explanation, or to be more precise.

- 5. ***To that end***

Use “to that end” or “to this end” in a similar way to “in order to” or “so”.

Additional information to support a point

- 1. **Moreover**

Employ “moreover” at the start of a sentence to add extra information in support of a point you’re making.

- 2. **Furthermore**

Usage: This is also generally used at the start of a sentence, to add extra information.

- 3. **Likewise**

Use “likewise” when you want to talk about something that agrees with what you’ve just mentioned.

- 4. **Similarly**

Use “similarly” in the same way as “likewise”.

- 5. **Another key point to remember**

Use the phrase “another key point to remember” or “another key fact to remember” to introduce additional facts without using the word “also”.

- 6. **Firstly, secondly, thirdly...**

This can be used to structure an argument, presenting facts clearly one after the other.

- 7. **Not to mention/to say nothing of**

“Not to mention” and “to say nothing of” can be used to add extra information with a bit of emphasis.

Words and phrases for demonstrating contrast

- 1. ***However***

Use “however” to introduce a point that disagrees with what you’ve just said.

- 2. ***On the other hand***

Usage of this phrase includes introducing a contrasting interpretation of the same piece of evidence, a different piece of evidence that suggests something else, or an opposing opinion.

- 3. ***Having said that***

Usage: Used in a similar manner to “on the other hand” or “but”.

- 4. ***By contrast/in comparison***

Use “by contrast” or “in comparison” when you’re comparing and contrasting pieces of evidence.

- 5. ***Then again***

Use this to cast doubt on an assertion.

- 6. ***Yet***

Use this when you want to introduce a contrasting idea.



Adding a proviso or acknowledging reservations

- 1. ***Despite this***

Use “despite this” or “in spite of this” when you want to outline a point that stands regardless of a shortfall in the evidence.

- 2. ***With this in mind***

Use this when you want your reader to consider a point in the knowledge of something else.

- 3. ***Provided that***

This means “on condition that”. You can also say “providing that” or just “providing” to mean the same thing.

- 4. ***In view of/in light of***

These phrases are used when something has shed light on something else.

- 5. ***Nonetheless***

This is similar to “despite this”.

- 6. ***Nevertheless***

This is the same as “nonetheless”.

- 7. ***Notwithstanding***

This is another way of saying “nonetheless”.



Signifying importance and summarizing

- 1. **Significantly**

This can be used to introduce a point that is loaded with meaning that might not be immediately apparent.

- 2. **Notably**

Can be used to mean “significantly” (as above), and it can also be used interchangeably with “in particular” (the example below demonstrates the first of these ways of using it).

- 3. **Importantly**

Use “importantly” interchangeably with “significantly”.

- 4. **In conclusion**

Typically used to introduce the concluding paragraph or sentence of an essay, summarising what you’ve discussed in a broad overview.

- 5. **Above all**

Can be used to introduce a point that is loaded with meaning that might not to signify what you believe to be the most significant point, and the main takeaways from the essay.

- 6. **Persuasive**

This is a useful word to use when summarising which argument you find most convincing.

- 7. **Compelling**

Use in the same way as “persuasive” above.

- 8. **All things considered**

This means “taking everything into account”.



Medical case report (MCR)

- MCRs are traditionally structured in abstract, introduction, case presentation, discussion, conclusion, informed consent and references.
- **Brevity** and **conciseness** are usually the most distinctive features of MCRs as a genre. In general, the author's aim is to transfer the maximum amount of important information using the minimal linguistic tools.
- Other unique characteristics of MCRs as compared with other genres of medical discourse are their **narrative style**, **personal tone**, **educational** and **instructive** intentions. That is to say, the major objective of MCRs is to “narrate”, to describe an interesting case to fellow researchers in order to warn them or to improve treatment techniques.
- These stylistic features determine the entire structure of MCRs, as well as the choice of lexical units.

- Our recent research (Lysanets Yu. et al. **Stylistic Features of Case Reports as a Genre of Medical Discourse**. *Journal of Medical Case Reports*, 2017) focused on grammar and lexical structure of the published material in this journal.
- *Journal of Medical Case Reports (JMCR)* is a peer-reviewed open access journal, published by BioMed Central (the United Kingdom), and indexed in Scopus.
- We found that the above-mentioned communicative features of MCRs (i.e., narrative style, personal tone, etc.) determine the choice of lexical units and grammatical structures: the prevalence of **active voice sentences, past simple tense, personal pronouns, and modal verbs**.
- Our research has also detected the occasional use of the present perfect, present simple, future simple tenses and the passive voice which also serve the particular communicative purposes of MCRs.

Key features of MCRs

(in: Lysanets Yu. et al. Stylistic Features of Case Reports as a Genre of Medical Discourse. *Journal of Medical Case Reports* (2017) 11: 83)

- The use of **simple past tense** is a predominant feature of MCRs.
- This peculiarity results from the very nature of MCRs as narrative (that is, “storytelling”) texts: their primary aim is to give an account of past events.
- Another important aspect of MCRs is the use of **active sentences**, contrary to other medical scientific genres, such as research articles.
- This feature is also associated with the narrative style, as well as with the educational intention of MCRs as a genre: the authors of MCRs describe the unusual problem they have faced and handled, thus sharing their experience and a lesson they have learned from it.

MCRs are notable for their use of active sentences in the simple past tense:

- “**We maintained** anesthesia with inhaled desflurane at 5% and intravenously **administered** remifentanyl at 0.2 µg/kg/min in a fraction of inspired oxygen of 0.45 (...) At that moment, **we administered** 20 mg ephedrine, 300 µg phenylephrine, and 0.03 µg/kg/min norepinephrine to maintain adequate blood pressure (...) **We did not detect** any problems with his respiratory parameters (...) His systolic blood **pressure remained** at 40 mmHg for 10 min; **we performed** chest compressions to maintain his blood pressure”.
- “**We did not find** cases with such an evolution in the literature, but **we found** some cases of spontaneous expulsion of ileal lipoma per rectum”.
- “**We found** electrogram amplitude to be normal throughout the right ventricle (...) In this case **we used** cryoablation to avoid the pain associated with radiofrequency delivery”.

Less frequently, passive voice constructions are also observed in MCRs:

- In particular, they are used for the purpose of giving recommendations and warning other physicians (that is, implementation of the instructive function).
- In this context, the modal verb “should” plays a significant role: “The psychological aspect of this condition **should not be underestimated** because he was ashamed of his front teeth and was not able to smile”; “IMA malposition is a rare but potentially lethal complication of CVC that **should be considered** in risk factor assessments and the management of severe complications resulting from CVC”; “...however, the risk of infection **should be weighed** against the advantages of this procedure”; “We hypothesize that a difficult intubation **should be anticipated** in these patients”.

The present perfect tense

- The present perfect tense is occasionally used to render the author's reflections on the problem in a broader context (for instance, the results of other research, which occur primarily in the "Background" section of MCRs):
 - "There ***have been*** a number of previous reports of CVC malpositioning in the internal mammary vein";
 - "Other studies ***have demonstrated*** the ability of ablation to prevent recurrence of VF in patients with a structurally normal heart, but these studies also ***have been*** of small patient cohorts followed only for a few years".

The past perfect tense

- The past perfect tense can be applied to describe earlier events from the case history:
 - “Of note, he ***had undergone*** a THA 31 days prior to his transfer...”.
 - “Four months later, his proteinuria *had reduced* to 1.4 grams/day, creatinine ***had improved*** to 155 $\mu\text{mol/L}$ ”.
 - “A computed tomography (CT) of her abdomen ***had shown*** nonspecific findings suggestive of colitis”.
 - “Two weeks previously, she ***had given*** birth at 40 weeks ... there had been no antenatal symptoms ... our patient ***had complained*** of dysuria ... the baby ***had not required*** hospitalization”.

Other tenses

- Our research (2017) has demonstrated the relatively seldom use of the **future tense** in MCRs.
- Occasionally, the authors use it in the “Conclusions” section to provide a perspective for further research or a prognosis: “An ultrasound-guided approach rather than the use of a landmark technique to insert CVC **will help**”; “Patients **will tolerate** the procedure with adequate airway preparation using topical anesthesia”; “The tooth **will preserve** the remaining alveolar ridge and help the adolescent psychologically”.
- The use of the **present simple tense** is also comparatively infrequent and it is generally used only in the opening section of MCRs: “**We report** a rare case of a CVC tip malpositioned in the right internal mammary artery (IMA)”; “**We describe** the case of a 30-year-old man from the north of Morocco with no medical or surgical history and no family history of rectal disease”.

Narrative style

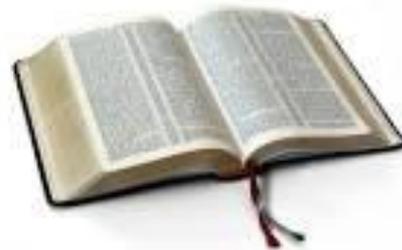
- The direct manner and personal style of MCRs are vividly embodied in the wide use of the **first person plural personal pronoun**.
- The use of “we” emphasizes the fact of joint authorship: “sole authorship should rarely be undertaken, instead the support and critical appraisal of a number of colleagues, as well as clinical mentors, offers the most likely team to ensure a strong contribution to literature” (Aitken L.M., Marshall A.P., 2007).
- Patients are usually referred to as **third person pronouns**. This narrative strategy is aimed primarily at the protection of patients’ personal information: “**He** presented with a 1-year history of rectorrhagia and constipation (...) **He** was hospitalized in our surgical department when he defecated spontaneously the tumor mass. (...) At the end of radiotherapy, **he** had follow-up consultation every 3 months (...) After 1 year of surveillance, **he** has not presented any clinical symptoms and pelvic magnetic resonance imaging was normal”.

Major takeaways:

- Each genre of medical discourse has its own unique features which must be taken into account.
- Within each particular genre (RA, MCR, etc.), there are traditional lexical structures and grammar rules, which must be respected as well.
- The features of academic writing in English are different from those of Ukrainian or Russian. One of the most important differences is a less frequent use of Passive Voice in the English academic writing.
- Translation of research results into English without consideration of academic norms of the English language can result in a low-quality written work.

Academic Vocabulary in Medical English: Difficulties in Spelling and Use

- Spelling differences in British and US English.
- Commonly misspelled words in the language of medicine and healthcare.
- The use of Latin terminology in medical English.
- The use of eponyms in medical English.
- Translator's "false friends" and internationalisms with multiple meanings in the language of medicine and healthcare.





Spelling Differences in British and US English



- There are several areas in which British and American spelling are different.
- The differences often come about because British English has tended to keep the spelling of words it has absorbed from other languages (e.g. Latin), while American English has adapted the spelling to reflect the way that the words actually sound when they're spoken.

NB! Follow the consistency principle: Spell as journals prefer – US or UK style, – never a mixture.

*Pay
attention*



Spelling Differences in British and US English



Br	US
ageing	aging
aluminium	aluminum
counsellor	counselor
dependant (noun), depende <u>n</u> t (adjective)	dependent
fulfil	fulfill
intervertebral disc	intervertebral disk
leucocyte	leukocyte
to license <u>s</u> e (verb), licenc <u>e</u> (noun)	license (verb and noun)
mould	mold
to practis <u>e</u> (verb), practic <u>e</u> (noun)	practice (verb and noun)
programme	program



Spelling Differences in British and US English



“-ise”
(Br)

“-ize”
(US)

organise

organize

recognise

recognize

realise

realize

“-yse”
(Br)

“-yze”
(US)

analyse

analyze

catalyse

catalyze

paralyse

paralyze



British and US English



Endings: “our” (Br) and “or” (US)

“our” (Br)	“or” (US)
behaviour	behavior
colour	color
favour	favor
humour	humor
labour	labor
tumour	tumor



British and US English



Endings: “re” (Br) and “er” (US)

“re” (Br)	“er” (US)
centimet re	centimeter er
cent re	center er
fib re	fiber er
lit re	liter er
theat re	theater er
tit re	titer er



British and US English: the Latin diphthong “ae”



<u>Br</u>	<u>US</u>
aetiology	etiology
anaemia	anemia
anaesthetic	anesthetic
caesarean	cesarean
defaecation	defecation
dyslipidaemia	dyslipidemia
glycaemic	glycemic
gynaecology	gynecology
haemoglobin	hemoglobin
haemorrhage	hemorrhage
ischaeemic	ischemic
leukaemia	leukemia
orthopaedic	orthopedic
paediatric	pediatric



British and US English: the Latin diphthong “oe”



“oe” (Br)	“e” (US)
diarrhoea	diarrhea
coeliac	celiac
dyspnoea	dyspnea
foetus	fetus
manoeuvre	maneuver
oedema	edema
oesophagus	esophagus
oestrogen	estrogen

Commonly Misspelled Words in Medicine

- **enuresis** (inability to control urination) and **anuresis** (retention of urine in the urinary bladder)
- **elicit** (to get (a response, information, etc.) from someone) and **illicit** (not legally permitted or authorised; unlicensed; unlawful)
- **exacerbate** (to increase the severity, bitterness, or violence of (disease, ill feeling, etc.)) and **exasperate** (to irritate; to annoy greatly; to make very angry or impatient)
- **perineal** (pertaining to groin) and **peroneal** (pertaining to fibula)
- **occur** – **occurring** – **occurrence**
- **persiste**nt (NOT persistant)
- **indispensa**able (NOT indispensable)



Commonly Misspelled Words in Medicine

- **afferent** neurons (convey the sensory stimulus to the brain, the efferent neurons) and **efferent** (convey the motor stimulus to the muscles)
- **callus** (noun) and **callous** (adjective)
- **ileum** (the gut) and **ilium** (the bone)
- **mucus** (noun) and **mucous** (adjective)
- **regime** (a form of government) and **regimen** (a systematic approach to diet, medicine, or exercise)
- **sagitt**al (NOT **saggital**)
- **tonsil**, but **tonsillectomy**
- **vesicle** (noun) and **vesical** (adjective)



Latin Plural Endings in English Medical Vocabulary

Singular	Plural
vertebra	vertebrae
atrium	atria
bacterium	bacteria
curriculum	curricula
datum	data
dorsum	dorsa
erratum	errata
labium	labia
medium	media
septum	septa
stratum	strata
symposium	symposia
criterion	criteria
ganglion	ganglia
phenomenon	phenomena

Singular	Plural
bacillus	bacilli
bronchus	bronchi
focus	foci
fungus	fungi
nucleus	nuclei
stimulus	stimuli
analysis	analyses
apex	apices
appendix	appendices
axis	axes
crisis	crises
diagnosis	diagnoses
index	indices
paralysis	paralyses
thesis	theses

Latin Plural Endings in English Medical Vocabulary

- Pluralizing Latin terms can sometimes be quite a challenge.
- For instance, a common mistake occurs when deriving the plural form of the Latin word “*septum*”. This lexical unit belongs to the 2nd declension of Latin nouns, neuter gender. Therefore, the correct plural form in Latin (and in English) is “*septa*”.
- However, the plural form “*septa*” is quite often mistaken for a singular form, and consequently is erroneously pluralized as “*septae*” (on the model of “*vertebra*” – “*vertebrae*”). As a result, a misspelling (“*septae*”) occurs.
- In our research (Lysanets Yu., Bieliaieva O.M. **The Use of Latin Terminology in Medical Case Reports: Quantitative, Structural and Thematic analysis**, 2017), we found 20 papers in *JMCR* containing the incorrect plural form of this word, for example: “...surgical drainage of the hepatic abscess (that contained many **septae** septa) was performed”; “Alveolar **septae** septa were inflamed, thickened and fibrotic”, etc.

Latin Plural Endings in English Medical Vocabulary

- A similar error may occur with the word “dorsum” which also belongs to the 2nd declension of Latin nouns, neuter gender.
- We found 3 papers in *JMCR* with this misspelling (“dorsae”): “Her dermographism was improving but she had developed confluent erythema and slight hyperkeratosis between and over the ~~dorsae~~ dorsa of her fingers”, etc.
- Another challenging aspect of using Latin in MCRs is the subject-verb agreement in number. We detected this type of error in the words “bacterium” (singular) – “bacteria” (plural), and “labium” (singular) – “labia” (plural): “The next closest ~~baeteria~~ bacterium was *H. parainfluenzae* with a 97% similarity score”; “Right ~~labia~~ labium was asymmetrically enlarged” .

Commonly Misspelled Eponyms

(in: Lysanets Yu. et al. Medical Eponyms as a Subject of Controversies in the Modern Terminology Studies // Актуальні проблеми сучасної медицини : Вісник Української медичної стоматологічної академії. – Полтава, 2017. – Том 17. – Вип. 4 (60). – С. 225–227)

- Eponym (from Greek *eponymos* – “giving one’s name to something”) is the name of a disease, structure, operation, or procedure, usually derived from the name of a person who discovered or described it first.
- Eponyms that are pronounced or written in a similar way but have different lexical meanings may be quite confusing:

- *Meigs’ syndrome* (ovarian fibroma with ascites and pleural effusion)
- *Meige’s syndrome* (blepharospasm with oromandibular dystonia)
- *Meige’s disease* (lymphoedema praecox)

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- *Meniere’s disease* (cochlear hydrops)
 - *Menetrier’s disease* (hyperplastic hypersecretory gastrophyl)

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- *Wermer’s syndrome* (multiple endocrine neoplasms, type 1)
 - *Werner’s syndrome* (hereditary premature aging)

Nazi-Associated Eponyms and their Replacements

• One of the most hotly debated topics, associated with the usage of eponymous terms nowadays, is the group of medical eponyms named for doctors, involved in Nazi atrocities. In the last decade, there has been a dramatic decline in the usage of such eponyms and they are replaced with the following descriptive terms:

Nazi-associated term	Replacement term
Asperger syndrome	high-functioning autism
Beck-Ibrahim disease	congenital cutaneous candidiasis
Cauchois-Eppinger-Frugoni syndrome	portal vein thrombosis
Clara cells	club cells
Eppinger's spider naevus	spider naevus
Hallervorden-Spatz disease	pantothenate kinase-associated neurodegeneration
Reiter's spirochete	Treponema forans
Reiter's syndrome	reactive arthritis
Seitelberger disease	infantile neuroaxonal dystrophy
Spatz-Stiefler reaction	paralysis agitans reaction
Van Bogaert-Scherer-Epstein syndrome	cerebrotendinous xanthomatosis
Wegener's granulomatosis	granulomatosis with polyangiitis

TRANSLATOR’S “FALSE FRIENDS” in the Language of Medicine and Healthcare

(in: Lysanets Yu. et al. Pseudo-Internationalisms in the Language of Medicine and Healthcare as a Challenge for Translation Studies // Актуальні проблеми романо-германської філології та прикладної лінгвістики : науковий журнал. – Чернівці, 2017. – Вип. 2(15). – С. 46–49)

- “Translator’s false friends”, also known as pseudo-internationalisms, are words in two languages that look or sound similar, but have different meanings.
- Pseudo-internationalisms are frequently found in the language of medicine. They can significantly impede the communication process, resulting in the misleading actions in diagnosis and treatment.
- Therefore, it is important to be aware of the potential “false friends” in order to avoid mistakes and misunderstanding in a foreign-language clinical setting.

- The table given below represents the English pseudo-internationalisms that have **entirely different lexical meanings** in Ukrainian:

“False friend” and its correct translation into Ukrainian	Possible mistake and reverse translation
accurate: <i>точний</i>	акуратний, охайний: <i>tidy</i>
actual: <i>дійсний, реальний, фактичний;</i> actually: <i>насправді</i>	актуальний: <i>relevant, topical;</i> актуально: <i>smth. is of current interest</i>
angina: <i>стенокардія, грудна жаба</i>	ангіна: <i>quinsy, tonsillitis</i>
complexion: <i>колір обличчя</i>	комплекція, статура: <i>bodily constitution</i>
delicate: <i>тонкий, ніжний, тендітний</i>	делікатний (тактовний): <i>tactful, considerate</i>
expertise: <i>професійна компетентність</i>	експертиза: <i>expert examination</i>
glands: <i>залози</i>	мигдалики (рос. “гланды”): <i>tonsils</i>
insult: <i>образа</i>	інсульт: <i>stroke</i>
plaster: <i>гінс</i>	пластир: <i>band aid, adhesive patch</i>
receipt: <i>квитанція, чек;</i> recipe: <i>кулінарний рецепт</i>	медичний рецепт: <i>prescription</i>

Internationalisms with Multiple Meanings

- The table given below presents English internationalisms from medical settings, some lexical meanings of which coincide with corresponding meanings of borrowed words in the Ukrainian language (“genuine international meanings”). However, numerous pseudo-internationalisms may have, along with these coincidences, other quite “unexpected” meanings (which are referred to as “pseudo-international meanings”), depending on the context.

Polysemantic words	Genuine international meaning	Pseudo-international meaning
aggressive , <i>adj</i>	агресивний	інтенсивний, наполегливий
activity , <i>n</i>	активність	діяльність
arrest , <i>n</i>	арешт	зупинка (<i>серця</i>)
attack , <i>n</i>	атака	напад (<i>серцевий</i>)
argument , <i>n</i>	аргумент	суперечка
Caucasian , <i>n</i>	кавказець	представник європеїдної раси
comfort , <i>n, v</i>	комфорт	втішати, заспокоювати
complex , <i>adj</i>	комплексний	складний

INTERNATIONALISMS: Words with Several Meanings

Polysemantic words	Genuine international meaning	Pseudo-international meaning
compromise , <i>v</i>	йти на компроміс; компрометувати	піддавати ризику
dramatic , <i>adj</i>	драматичний	різкий, неочікуваний
episode , <i>n</i>	епізод	напад (хвороби), криз
thesis , <i>n</i>	тези	дисертація
figure , <i>n</i>	фігура	рисунок; число
medicine , <i>n</i>	медицина	ліки
phenomenon , <i>n</i>	феномен	явище
realise , <i>v</i>	реалізувати	чітко уявляти, усвідомлювати
regular , <i>adj</i>	регулярний	нормальний, звичайний, стандартний
specific , <i>adj</i>	специфічний	конкретний; питомий
suspended , <i>adj</i>	суспендований, у стані суспензії	тимчасово припинений; ідсторонений від виконання обов'язків
sympathy , <i>n</i>	симпатія	співчуття

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**Thank you for your
attention!**

