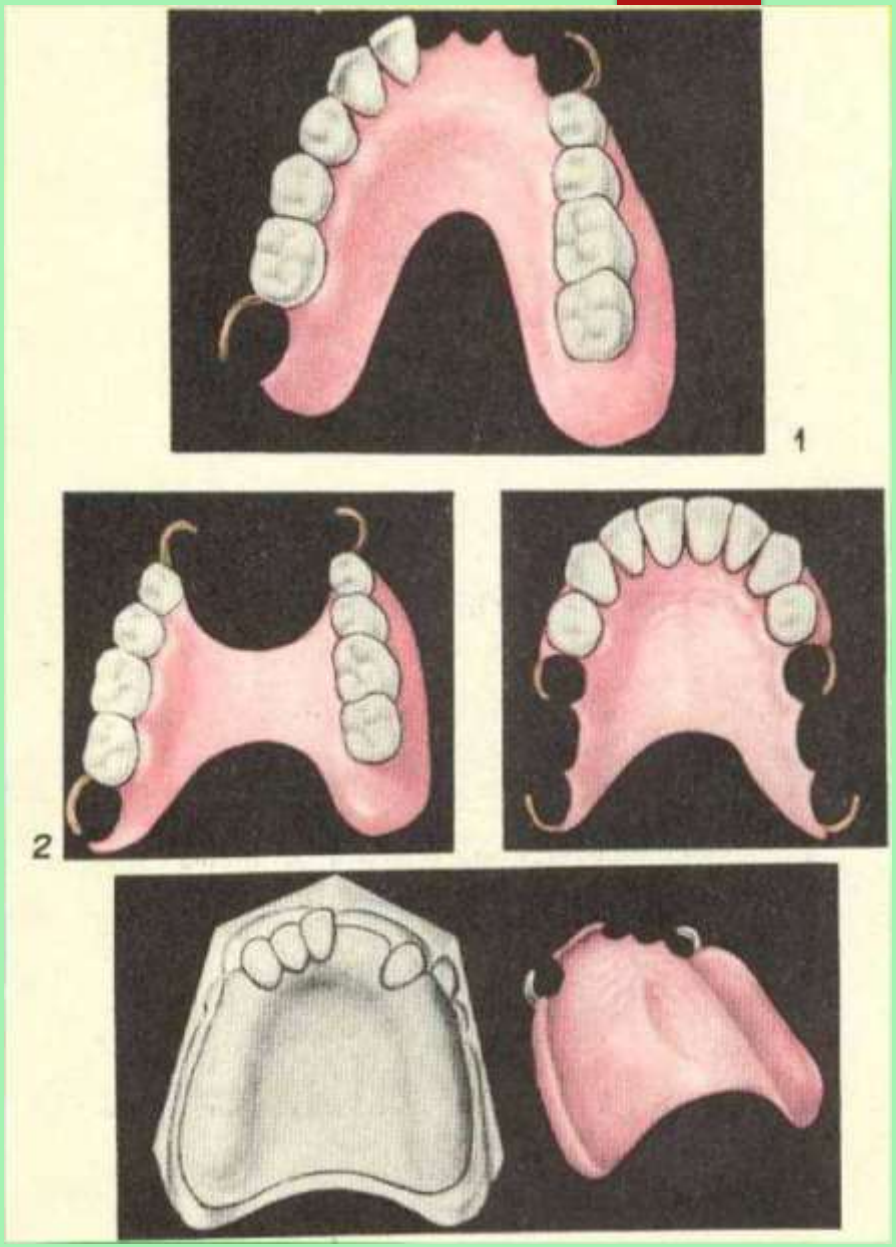
Ukrainian Medical Dental Academy
Department Propedeutics of Prosthetic Dentistry

RPD
INDICATIONS FOR MANUFACTURE, CLINIC-LAB STAGES.

Removable partial dentures

Intended to replace defects in dentition of considerable length.

The prosthesis consists of:
-basis, based on the alveolar process;
- retaining elements;
- artificial teeth;



Indications for manufacturing:

1.1 and 2 class of dentition defects according to the Kennedy classification;

2.3 and 4 class, if the chewing efficiency of the abutment teeth is less than the chewing efficiency recoverable;

3. A small number of supporting teeth and their mobility;

Contraindications:

1. Allergic conditions;

2. Optional precancerous conditions of the oral mucosa: leukoplakia; lichen planus; pemphigus.

Positive *CHSP properties:*

- restoration of the integrity of the dentition with significant defects in length;
- restoration of an aesthetic defect;
- hygiene;
- prevention of the occurrence of secondary deformities of the dentition;
- unification by the basis into a single system, the remaining teeth in the oral cavity;

Negative properties of the prosthesis:

- the processes of atrophy of the mucous membrane and bone tissue of the alveolar process proceed faster due to the pressure of the base on the tissue of the prosthetic bed;
- violation of the regeneration of the oral cavity;
- disturbances in heat transfer processes under the base of the prosthesis;
- trauma to the enamel of permanent teeth with clasps;
- sensitization of the body as a whole;
- the use of clasp fixation, which leads to increased resorption of the bone tissue of the alveolar process in the area of the abutment teeth.

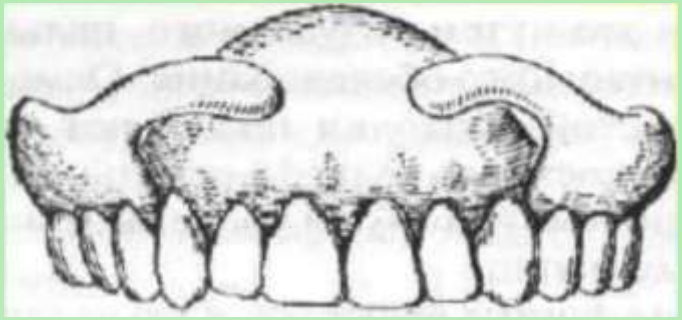
Fixation - holding the dentures on the jaw using mechanical devices or anatomical retention at rest.

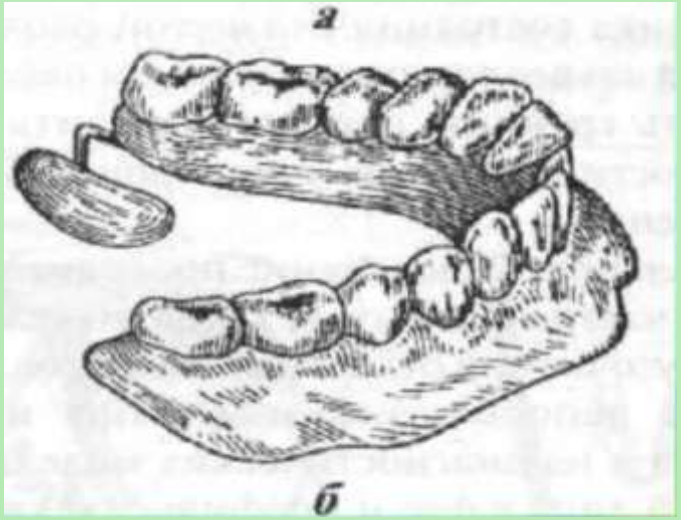
Stabilization - this is the stability of the prosthesis during the performance of the function of the prosthesis (chewing, talking), it is achieved due to the correct choice of the impression material, correctly conducted clinical and laboratory stages.

Methods for fixing and stabilizing partial removable plate prostheses (according to Bayanov).

one. Mechanical: clasps, pilots, telescopic crowns, locks (attachments), beam system, push-button system (anchor).

2. Biomechanical - anatomical retention with well-defined alveolar tubercles, alveolar processes (gingival clasps), expansion of the prosthesis base in the sublingual space...





3.Physical - adhesion, use of magnets, weighting of the prosthesis on the lower jaw.

4. Biophysical - functional suction, suction cup.

Clammer - this is the part of the removable denture that provides its fixation. Consists of: shoulder, body and process.

Clasp classification

By function:
a) supporting, b) holding, c) combined.

By type of cross-section: a) flat, b) round, c) semicircular, d) tape.

By the location of the clasp shoulder:
a) alveolar,
b) dento-alveolar, c) dental.

By the number of links:
a) single-link,
b) circular, c) multi-link.

By material:
a) metal,
b) plastic.

By type of support:
a) tape,
b) two-armed, By manufacturing method:
c) clasps with a) bent,
an occlusal patch. b) cast,
c) brazed.

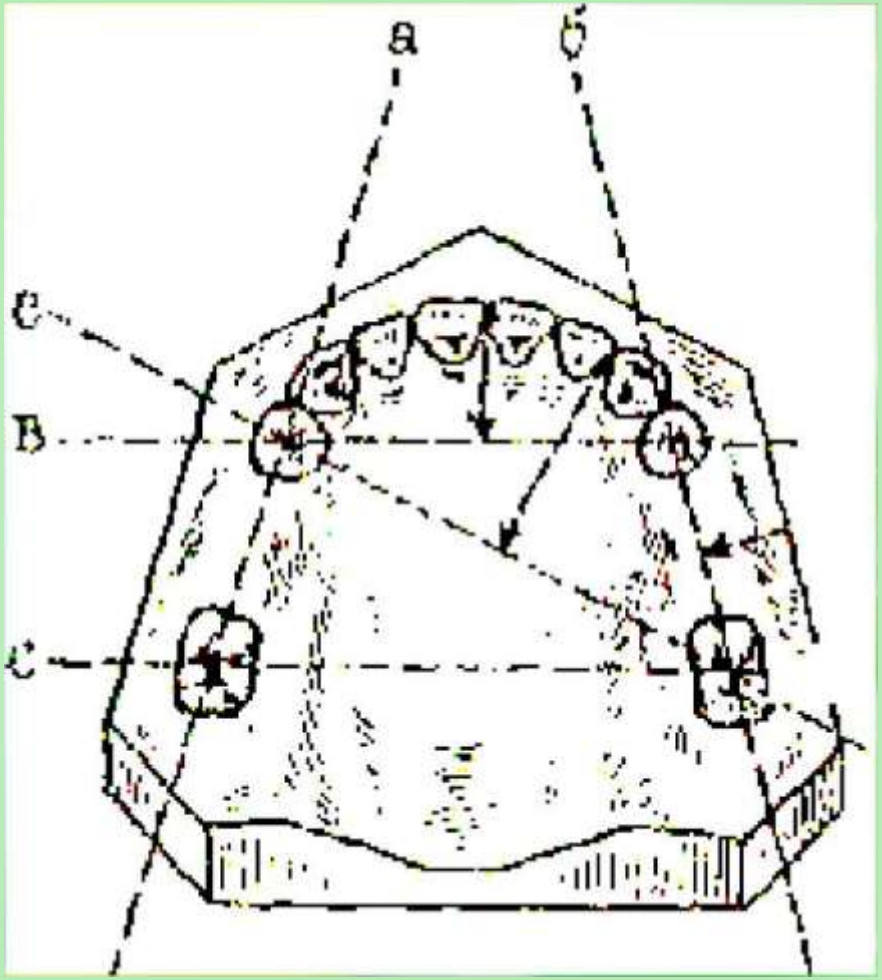
By mounting method: a) hard, b) semi-labile, c) labile.

The line connecting the teeth on which the clasps are located is called *clasp line*... If the abutment teeth are located on one side of the jaw, then the clasp line has *sagittal direction*, and when the abutment teeth are located on opposite sides of the jaw - *transversal* or *diagonal*...

Types of denture attachment:

- point - when using one tooth as a support;
- linear - when using two teeth;
- planar - three or more teeth;

Types of direction of clasp lines: a, b - sagittal; c, c - transversal; e - diagonal.



The boundaries of the base of the prosthesis on the upper jaw on the buccal and labial sides of the edentulous portion of the alveolar process, the border of the prosthesis runs 0.5-1 mm below the transitional fold, bypassing the movable buccal-alveolar cords of the mucous membrane and the frenum of the lips. The distal edge of the prosthesis does not extend slightly to the "A" line. The tubercle of the upper jaw must be covered by the prosthesis. Anterior teeth with orthognathic occlusion are overlapped by the base by the thickness of the wax base plate (1.8 mm). The lateral teeth are overlapped by the base of the prosthesis by 2/3 of the height of their crown.

CLINICAL STAGES OF PRODUCTION OF CHSP

I. Obtaining complete anatomical impressions from both jaws.

II. Determination of central occlusion.

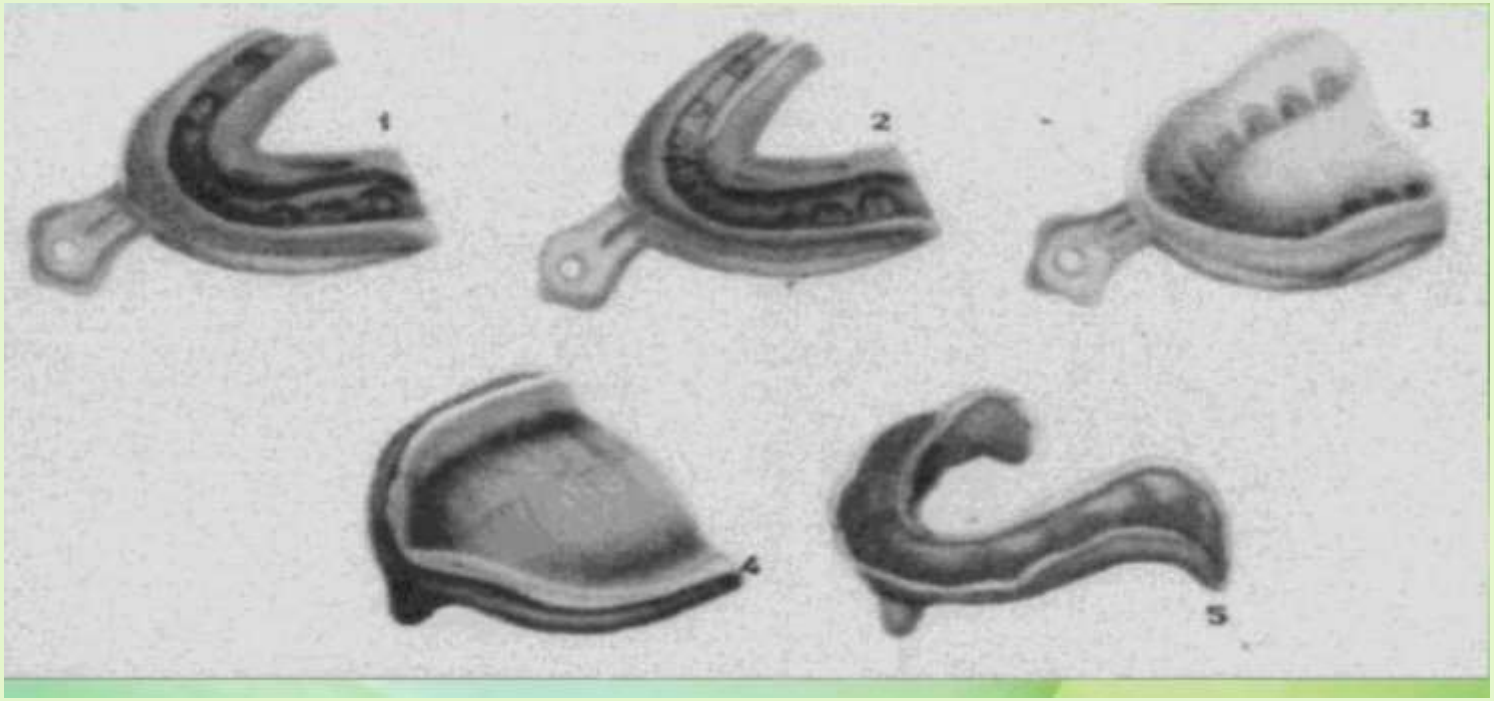
III. Checking the design of the prosthesis, the correctness of the CO determination and the setting of the teeth in the baseline.

IV. Correction and delivery of CHSP.

FIRST VISIT:

(first clinical stage) ***GETTING FULL ANATOMICAL IMPRESSIONS FROM BOTH JAWS***

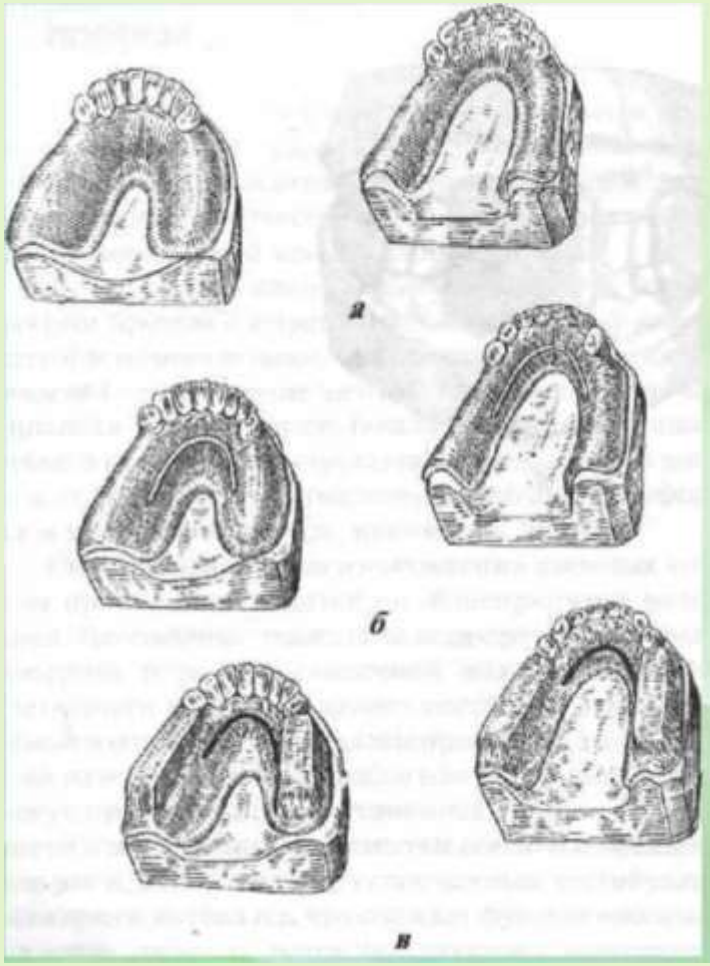
(WORKING AND AUXILIARY)

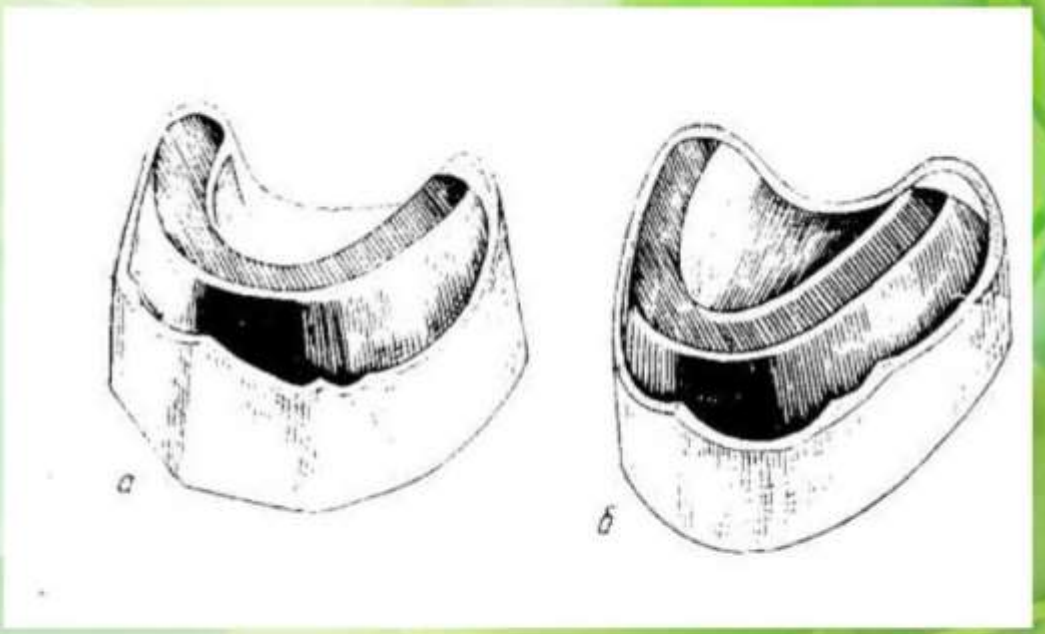


First laboratory stage:

1. Manufacturing of plaster models;
2. Making wax templates with bite rolls

Making wax templates with bite rolls





The wax base should:

1. Fit snugly to the model throughout;
2. Reinforced with wire to prevent deformation;
3. The edges are rounded, without sharp protrusions, exactly pressed on the model;
4. The width of the roller is 1-2mm larger than the adjacent natural teeth, height 2cm, width 8-10mm;
5. The rollers are monolithic, do not delaminate;
6. Upper occlusal roller in the area 717 cut at an angle towards the maxillary tubercles…

SECOND VISIT:
DEFINITION OF CENTRAL OCCLUSION

***Methods for determining central occlusion*: - with wax templates - by the method of gypsum blocks**

Betelman distinguished 4 groups of dentition defects according to the presence of antagonizing pairs:

1st group - there are three pairs of antagonists in the oral cavity, located in the frontal and lateral regions. Models can be matched in CO position, (fixed bite height);

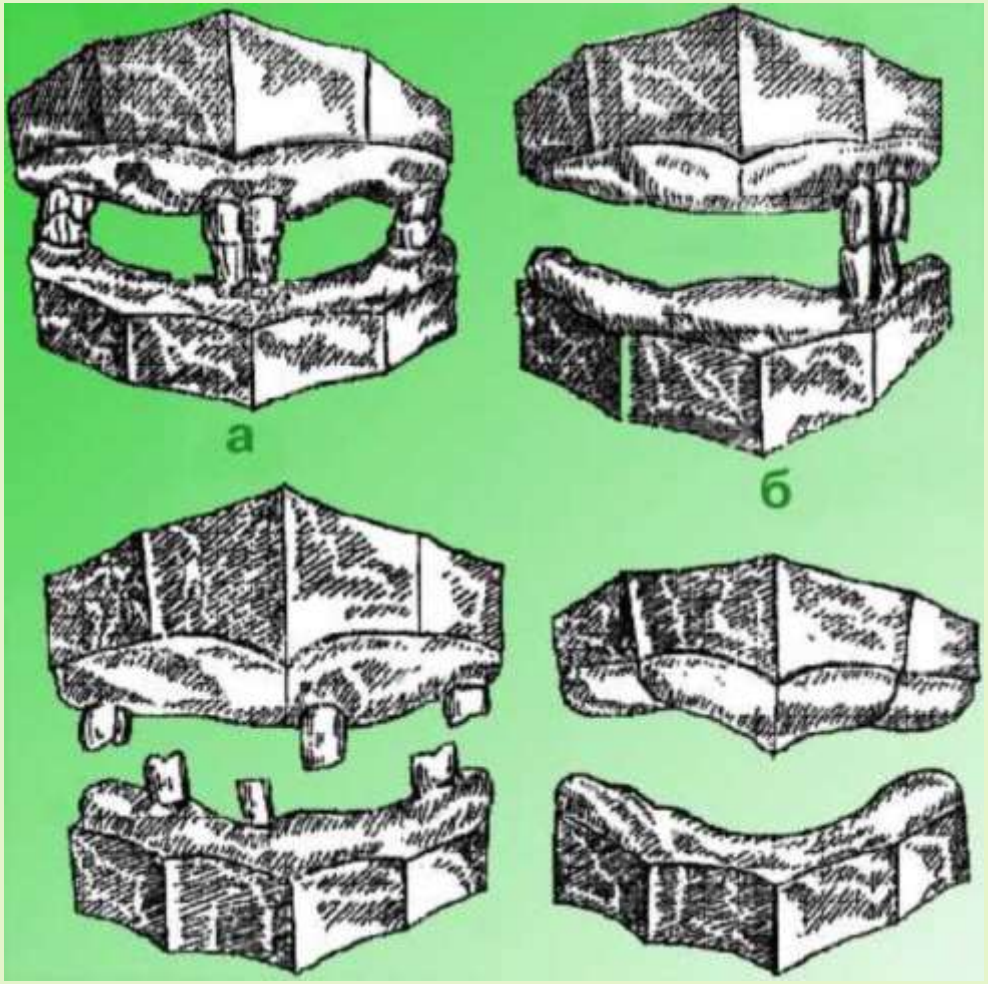
2nd group - the presence of one or more pairs of antagonists, which are located so that to make models in the CO position impossible;

Group 3 - there are teeth, but there are no antagonists;

4 group - toothless jaws.

Groups 3 and 4 require, in addition to determining the CO, the determination of the interalveolar height (CO height).

Groups of dentition defects, distinguished when determining central occlusion:



a - the first group, b - the second group; c - the third group; d - fourth group.

IN

STAGES OF DETERMINATION OF AC

1. Definition of prosthetic plane;
2. Determination of the CO height;
3. Determination of the central (mesio-distal) position of the lowerto her jaw;
4. Drawing wax rollers.

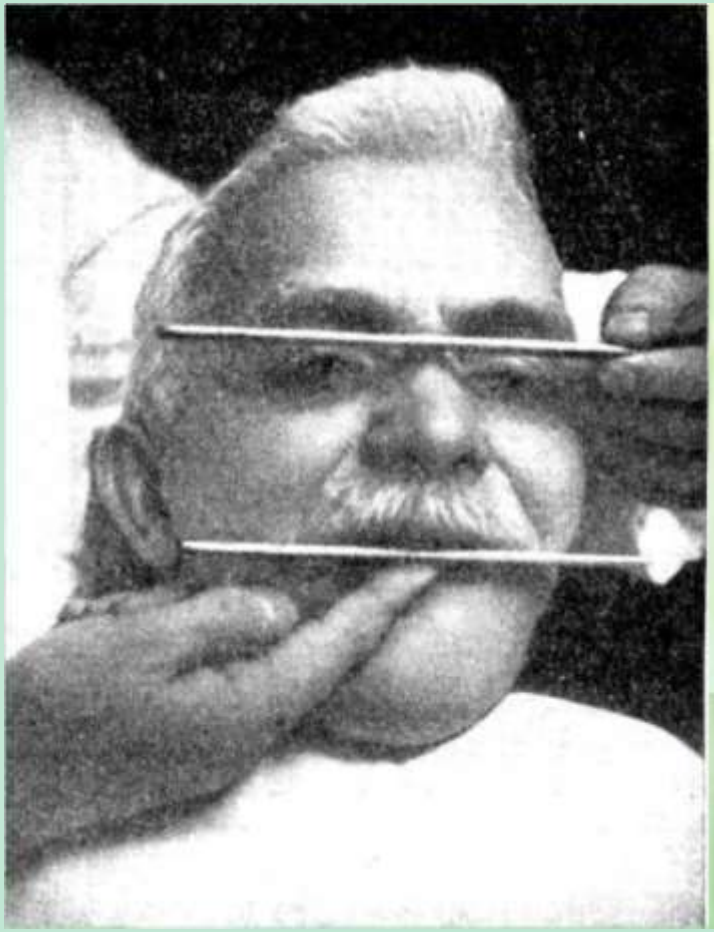
•**Prosthetic** or **occlusal** or **chewing** the plane goes along
chewing and cutting surfaces of teeth...

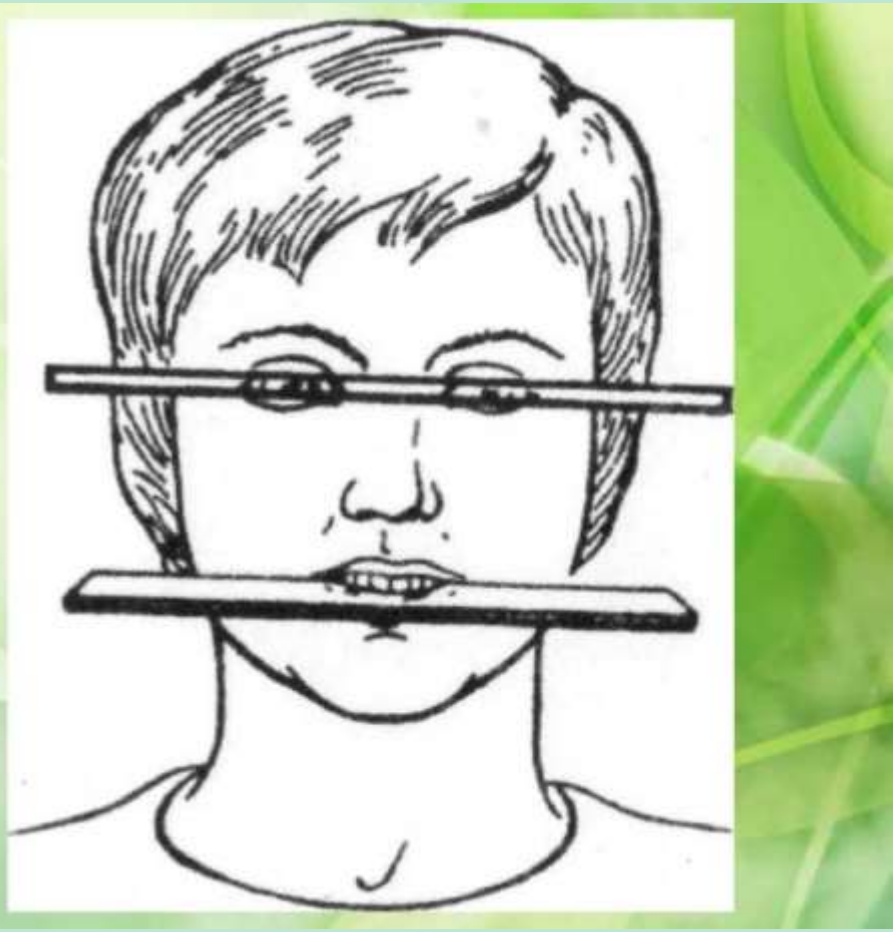
- **Central heating height** (interalveolar height) - the distance between the alveolar processes in the CO position.
- **Position of physiological rest**
(neutral position n.h.) - calm,
relaxed state of ALL chewing muscles. The lips close freely**2-3 mm gap between teeth**... '"> 2 ^
- **Physiological rest height** - the distance between the alveolar processes in the resting position. More than the central center height by 2-3 mm.

Methodology for determining central occlusion using wax templates with bite rollers:

one. **Definition of prosthetic plane**: on the upper roller, a plane is built parallel to
the frontal part of the pupillary line, in the lateral - the nasal (Kamperovskaya) line. The lower roller is cut before the contact of the antagonist teeth. ■

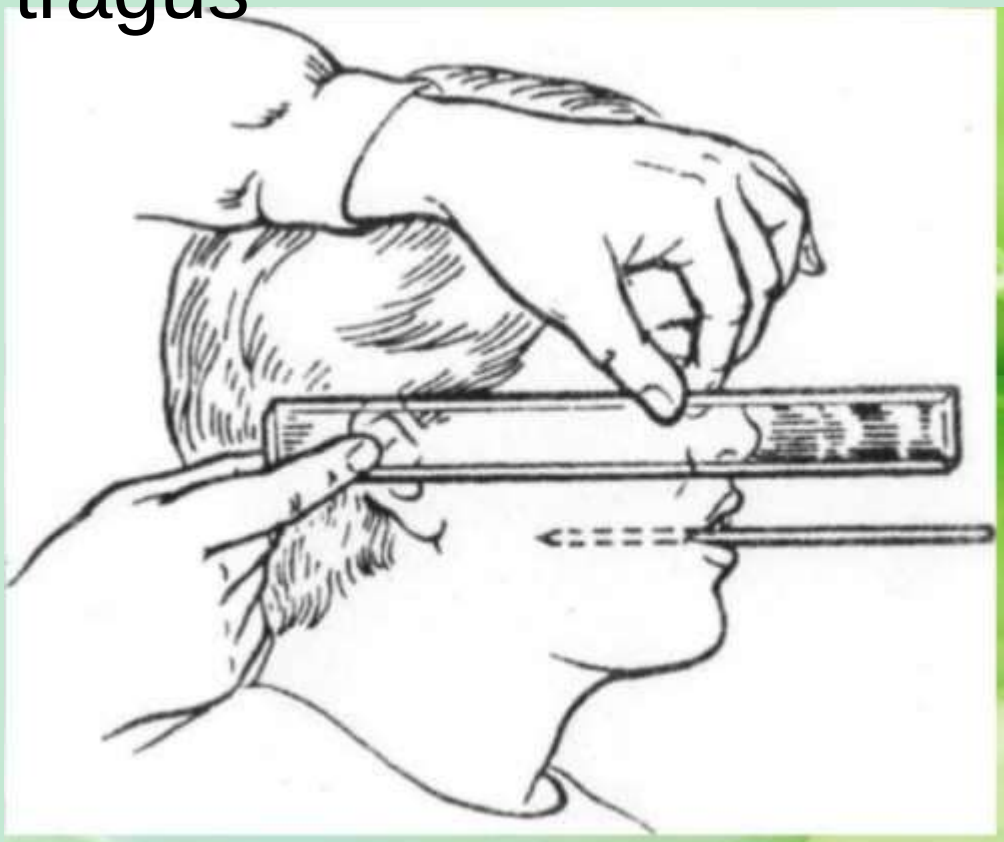
Determination of the prosthetic plane in the frontal area





Determination of the Camper horizontal or naso-ear line

- On the face from the base of the wing of the mid-ear tragus



2. Determination of interalveolar height (central heating heights).

Anatomical and physiological method... **Determine the height *relative***

physiological rest. **Two points are applied to the patient: at the base of the nasal septum and on**

chin. The patient is involved in an arbitrary short conversation, at the end of which the lower jaw is set in*resting position.* Measure the distance ^ between the marked points, subtract 2-3 mm and remember this value - this will be the height of the central center.

H. Determination of the central position of the lower jaw

For this, one of the tests is carried out:

- finger;
- swallowing;
- ball;
- test of "throwing the head back";
- Kantarovich method (doctor on my own (violently) exposes the patient's lower jaw in the CO position).

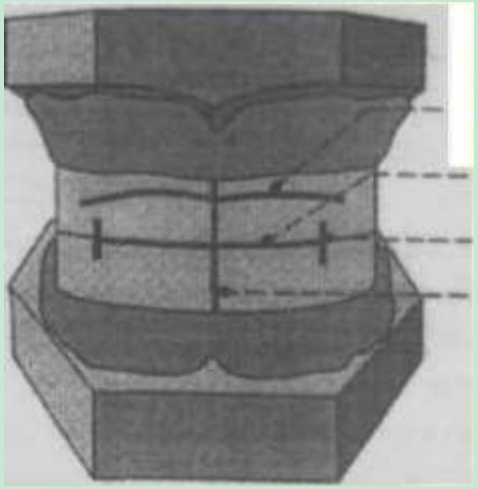
Having determined the central position of the lower jaw, it is necessary to fix it. To do this, on the occlusal surface of the upper roller, non-parallel notches are applied with a spatula, the lower one is softened with a hot spatula, the template is inserted into the oral cavity and the patient is asked to close his jaws, applying all the above techniques. The heated wax enters the wedge-shaped notches and fixes the rollers.

After that in daylight determine the color of the teeth.

4. Drawing rollers

Horizontal - teeth closing line, smile line (tooth height)

Vertical - median and canine line.



Third visit: *CHECKING THE DETENTION ON THE WAX BASIS OF THE CHSP, THE CORRECT DETERMINATION OF THE CH:*

- Model quality assessment
- Construction check in the occluder
- Checking the setting of the teeth on a wax basis in the oral cavity *
- Identification of errors and methods of their elimination

Workers ***model*** visually assessed for:

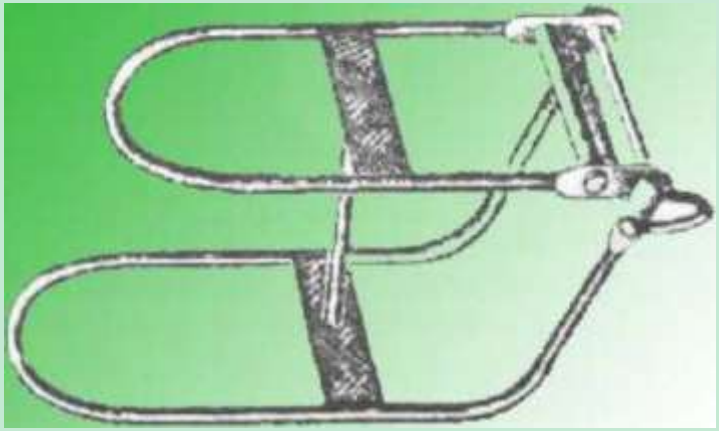
- presence of cracks;
- lubrication of the contours of the prosthetic bed;
- the presence of pores.

On a wax basis:

- thickness;
- borders;
- density of pressing to the model;
- the location of the elements of the wire clasp;
- the position of the appendix in the base of the prosthesis.

When checking the structure in the occluder, attention is paid to the size, size of the teeth, the depth of the incisal overlap (by 1/3). If the amount of overlap is changed, then the fixation and stabilization of the prosthesis is impaired.

Check the position of the teeth in relation to the alveolar ridge, guided by the following rules: the teeth in the lateral areas of the upper and lower jaw and in the frontal area of the lower jaw must be located strictly in the middle of the alveolar process.



Metal occluder

To check the design of the CSP in the oral cavity, it is removed from the model, wiped with alcohol and introduced into the oral cavity.

Check:

- stability of the prosthesis (balancing);
- baseline boundaries;
- location of clasps;
- matching the color and size of the teeth.

Then the correctness of the CH installation is determined.

If all antagonistic teeth (both artificial and ^natural) closely and evenly close, then the CO is defined correctly.

Errors in determining the central occlusion are possible, methods for their elimination: a) errors in the vertical plane: *overestimation of the central heating height*

- On examination, there is an elongation of the lower third of the face, smoothness of the nasolabial and chin folds, tense closing of the lips.
- When examining the oral cavity - no contact in the natural teeth area (vertical slit).

understatement of the central heating height*...*

- On examination, the underestimation of the lower 1/3 of the face, excessive severity of the nasolabial and chin folds, the lips will appear bulging.
- When examining the oral cavity - an increase in the depth of overlap (more than 1/3).

To fix the error - redefining the height of the central occlusion.

b) <u>in the transversal plane</u>

(fixation of lateral occlusion):

during an external examination, asymmetry of the face will be noted with a shift of the lower jaw to the right or left.

In the oral cavity, there will be a shift in the midline between the central incisors of the upper and lower jaw.

In the side sections it will be noted:

on the one hand, the eponymous tubercle contact,

on the other hand, there is a reverse tubercle overlap or no contact. Correction is possible only by redefining the CO. I

in) <u>in the sagittal plane</u> (establishment of anterior occlusion): during external examination, there will be an excessive protrusion of the chin, smoothness of the chin fold. When examining the oral cavity - the sagittal slit, reverse overlap, in the lateral areas - the eponymous tubercle contact.

The fix is to redefine the CO.

Fourth visit: *CHECKING, CORRECTION AND OVERLAY OF CHSP* Before checking the prosthesis in the oral cavity, visual control is carried out: - estimate the thickness of the base;

- the state of the base edges and their surface;
- quality of polishing and grinding;
- presence of graininess:
- the clasps have no sharp edges.

Terms of use and care of the prosthesis

Lack of proper care of the prosthesis is a possible cause of inflammation of the mucous membrane of the prosthetic field

Care rules:

- after eating, it is necessary to clean the prosthesis with a toothbrush and rinse with running water;
- it is not recommended to use a prosthesis when taking solid food (nuts, crackers), which requires a significant chewing load;
- keep the prosthesis in a glass of water;
- in case of pain during the performance of the function, it is necessary to go to the clinic, but do not remove the prosthesis before this at least for several hours;
- in case of prosthesis breakage, pigmentation of artificial ZU6ov go to the clinic.

Mechanisms of addiction to dentures according to V.Yu. Kurdlyansky:

one period- irritation. It starts from the moment the prosthesis is applied. In this case, a denture is an unusual irritant and is felt as a foreign body, at the same time, salivation (hypersalivation) increases, the appearance of a gag reflex, speech changes. This indicates the occurrence of a reflex as a result of the transmission of excitation along the reflex arc from the receptors of the oral mucosa through the central nervous system. There is also a decrease in chewing efficiency.

2 period- partial inhibition, 1-5 days after delivery of the prosthesis. In this case, the response to irritation begins to subside: the feeling of sensation of a foreign body decreases, salivation decreases, and the vomiting reflex disappears. at

3 period- complete inhibition, 5-33 days after delivery of the prosthesis. At the same time, the sensation of a foreign object disappears, and the ligamentous apparatus is completely accustomed to the new function. Chewing efficiency is fully restored.

Mechanisms of addiction to dentures According to I.S. Rubinov

Addiction as an organ, based on the development of new conditioned motor reflexes.

Mechanisms of addiction to dentures According to G.B. Shilova

1. Addiction as a foreign body based on limited braking,
2. Habituation as an organ, on the basis of conditionally unconditioned connections with the formation of a motor-dynamic stereotype of the act of eating.

THANKS FOR ATTENTION!