Orthopedic treatment of the patient implies not only the restoration of the anatomical shape of the crown parts of the teeth, dentition, but also the rehabilitation of the functions of biting, chewing, swallowing, aesthetic norms of smile, face and diction.

Articulation refers to all the positions of the lower jaw relative to the upper jaw that occur during natural movements of the lower jaw.

The main options for the positions of the lower jaw, which are of decisive importance in the clinic of orthopedic dentistry, are called positions:

a) functional rest;

b) the central ratio or central occlusion.

c) functional, eccentric occlusions, eccentric ratios.

The position of functional rest of the lower jaw is the position it occupies when the muscles that raise and lower the jaw are in a state of functional rest – a variant of articulation.

The state of functional rest of the muscles is, specific to the chewing muscles, a state of functional and tonic balance of the muscles that raise and lower the lower jaw, which occurs after the completion of chewing - swallowing, talking.

The muscles that raise and lower the lower jaw return to a state of functional balance every time after the end of the conversation: counting out loud.

The height of functional rest is the distance between two points plotted above and below the oral slit of the patient in the position of functional rest of the lower jaw.

Occlusion refers to the closure or contact between the dentition or individual teeth of the upper and lower jaws – a variant of articulation.

The central ratio is the position of the lower jaw, which corresponds to the central occlusion, provided there is a sufficient number and appropriate location of the antagonist teeth.

If the defects of the dentition are arranged in such a way that there is not a single pair of antagonists, that is, with group 3, or with complete adentia, with the 4th group of defects of the dentition according to Betelman, it is more correct to talk not about central occlusion, but about the central ratio.

The height of the central ratio or central occlusion is the distance between the alveolar processes or two points located above and below the oral slit, in the position of the central ratio of the lower jaw.

Central occlusion is a closure of the teeth, in which the maximum number of contacts between antagonists is noted. At the same time, there is a maximum and uniform contraction of the muscles that lift the lower jaw. In this position, the articular heads of the temporomandibular joints are located at the bases of the slopes of the articular tubercles in the so-called occlusal points.

Based on this definition of central occlusion by E.I.Gavrilova, the following are distinguished: <dental>, <muscular> and <articular> signs of central occlusion.

The position of the central jaw ratio of the patient in the clinic is determined in order to reproduce it between plaster models of prosthetic beds and fix this position in the articulator.

Eccentric occlusions are all types of occlusions except the central one.

Eccentric ratios of the mandible – all positions of the mandible except the central ratio and functional rest.

Occlusion is called a type of spatial position of the dentition in the central occlusion.

One of the most important clinical stages of orthopedic treatment of a patient is to determine the position of the central ratio (CC) of the central occlusion (CO) of the patient's mandible.

Depending on the complexity of determining the position of the Central Bank, CA

A.I. Betelman identified four options:

- in the first case, when there are three or more pairs of antagonist teeth in the alveolar processes of the upper and lower jaws, arranged as follows: at least one in the front, and the other two in the side sections, as a rule, determine only the height from the parameters of the central control unit position. Plaster models of prosthetic beds at the laboratory stage are compared in the position of the central nervous system by dental signs and facets of erased occlusal surfaces of antagonist teeth or using occlusal impressions;

- starting from the second variant of the difficulty of determining the position of the central nervous system, when less than three pairs of antagonists are located in the alveolar processes of the upper and lower jaws, it is necessary to produce bite patterns at the laboratory stage and determine the position of the central nervous system at the clinical stage.

And only then, with the help of bite patterns, to compare models of prosthetic beds in the position of the central ratio.

 The most difficult way to determine the position of the jaw CA is the third, when there are no pairs of antagonists or they are located only in two areas of the jaws) and the fourth (with complete adentia) variants of the location of dentition defects.

In the second, third and fourth variants of the location of defects in the dentition of the upper and lower jaws, in order to determine the position of the CA, it is necessary in all cases, i.e., always make bite patterns (PS).

The PS consists of a base, which can be made of base wax or plastic, and a roller, which is prepared from base wax or a mixture of wax with carborundum.

The requirements for the PS are as follows:

- the PS base should fit snugly to the working surface of the prosthetic bed model;

- the edge of the PS base should not have sharp edges and should be located in accordance with the boundaries of the prosthetic bed;

- if the PS base is made of wax, then for the upper jaw it should be made of one, and for the lower jaw from two plates of base wax

- the PS base made of wax should be reinforced with wire from the oral surface;

- the PS roller must be made monolithic from molten wax;

- the PS roller should be securely connected using boiling wax to the base of the bite pattern;

- the middle of the arc of the PS roller should coincide with the top of the model of the alveolar process, except for the anterior segment of the upper jaw. In this area, the PS roller should be located 1/3 of the way forward from the middle of the alveolar process;

- the height of the PS roller in the front segment should be 1.5—2.0 cm, in the side — 0.8—1.0 cm;

- the roller of the upper PS in the distal segments should be beveled at an angle of 45 ° with respect to its occlusal surface.

The logical sequence of the clinical stages of determining the position of the central ratio of the jaws in the 3rd and 4th variants of the location of dentition defects according to A.I. Betelman is as follows:

- at the very beginning, the height of the CA position is determined;

The sequence of steps for determining the position of the jaw CA:

- place the patient in a dental chair in a comfortable position.

- apply two points above and below the patient's oral slit with a felt-tip pen or pen: one on the tip of the nose - the second on the protruding part of the chin.

- bring the muscles that raise and lower the lower jaw into a state of functional balance. To do this, involve the patient in a short conversation or ask him to count out loud and then offer to close his lips without tension.

- measure the distance between these points and thus determine the height of the functional rest of the mandible. Then reduce this height by 2.0 mm, thus obtaining the height of the CA.

Then next:

- model the vestibular surface of the upper PS roller; - determine the location of the level of the prosthetic surface of the upper PS roller;

- model the prosthetic surface of the upper PS roller;

- control the location of the prosthetic surface using two spatulas, or a Sapozhnikov ruler, or a Larin apparatus, or a Zmiev apparatus;

- an imprint of the prosthetic surface of the roller of the upper occlusion template is obtained on the roller of the lower PS;

- adjust the height of the lower PS roller under the control of the height of the CA position;

- model the vestibular surface of the lower PS roller;

- determine and fix the position of the jaw CA using

PSH;

- identify and draw on the vestibular surfaces of the rollers of the PS lines: the cosmetic center of the face, smile, canines;

- select the material, color, style of teeth for removable plate prostheses or the color of the lining of a non-removable structure.

Determining the position of the central ratio of the jaws (CS) is a clinical stage of orthopedic treatment of patients (OL) suffering from complete adentia, the authors interpret it differently and call it the definition of occlusion, the definition of central occlusion, the definition of the central ratio of the jaws (Betelman L.I., Bynin B.N., 1947; Kurlandsky V.Yu., 1953; etc.).

B.R. Weinstein (1974) called this clinical stage "the definition of landmarks for the construction of bite elements."

During life, the height of the central occlusion varies and depends on the presence and abrasion of chewing teeth. These conditions are combined with changes in the temporomandibular joints.

Central occlusion is characterized by maximum contact of all cutting and chewing surfaces of teeth; muscles in the position of central occlusion develop maximum traction. During the experiment conducted at the Department of Hospital Orthopedic Dentistry of the Moscow State Medical University, this position could not be confirmed. It is possible to record a decrease in muscle traction between the position of the central occlusion and a decrease in its height, and with an increase in the height of the central occlusion (up to a certain limit), the difference in muscle traction is not determined (Voronov A.P., 1986).

In the position of the central occlusion, the most effective chewing occurs, the chewing and temporal muscles on both sides contract simultaneously and evenly, the middle line of the face coincides with the line passing between the central incisors of the upper and lower jaws, the articular heads are located at the base of the slopes of the articular tubercles.

Brill et al. (1959) there is also a retroactive (extremely posterior) position of the lower jaw, from which the jaw cannot be displaced distally, since its displacement is limited by the ligaments of the joint.

In the retroactive position, the lower jaw shifts posteriorly from the position of the central occlusion by 0.5—1 mm and in 90% of cases does not coincide with the central occlusion.

L.V.Ilyina-Markosyan also notes the "habitual occlusion", which can occur with defects in the dentition, pathological abrasion, or when the patient has plate prostheses with toothless jaws and erasure of the tubercles and cutting edges of the teeth.

The positions of the lower jaw listed above in relation to the upper one must be known, since in the clinical practice of orthopedic dentistry, the doctor has to constantly deal with these concepts.

 In OL patients with toothless jaws, the central ratio of the jaws is determined, and not the central occlusion.

To determine the position of the CA of the jaws means to determine the position of the lower jaw in relation to the upper one in three mutually perpendicular planes — vertical, sagittal, transversal.

All methods for determining jaw CA can be divided into static and functional.

Static methods are based on the principle of the constancy of the central ratio of the jaws. These include the Jupitz method, which proposed the "golden ratio compass"; the Wootsword method, which claimed that the distance between the corner of the eye and the corner of the mouth is equal to the distance between the tip of the nose and chin in the position of central occlusion; the Geezy method, which determines the height of the lower face by the severity of nasolabial folds. All these methods are inaccurate and mostly overestimate the size of the lower part of the face.

METHODS FOR DETERMINING THE CENTRAL RATIO OF THE JAWS

Haber suggested using rigid bases and determining the height of the jaw CA using a gnathodynamometer. Because the muscles in the central occlusion position develop the greatest strength.

Haber was guided by the highest indicators of the gnathodynamometer. According to the Gisi method, a small pin is strengthened in front of the upper occlusion roller, and a metal plate with a recording table covered with a thin layer of wax is mounted on the roller of the lower jaw. The pin must touch the surface of the table.

The patient is offered to make movements of the lower jaw to the sides until fatigue. An angle of approximately 120 degrees is outlined on the table. The location of the pin at the top of the angle will indicate the central ratio of the jaws.

There is also an intraoral method for registering the central ratio of the jaws, described by B.T.Chernykh and S.I.Khmelevsky (1973). The essence of the method lies in the fact that the recording plates are strengthened with wax on the rigid bases of the upper and lower jaws.

A pin is fixed on the upper metal plate, and the lower one is covered with a thin layer of wax. With various movements of the lower jaw, a clearly defined angle is outlined on the lower waxed plate, in the area of the apex of which the position of the jaw CA should be searched. Then a thin celluloid plate with depressions is applied on top of the lower plate, combining one of the depressions with the top of the corner, and pour it with wax.

The patient is again offered to close his mouth and, if the support pin falls into the recess of the plate, the bases are fixed on the sides with plaster blocks, removed from the oral cavity and transferred to plaster models of prosthetic jaw beds.

All of these methods for determining the central ratio of the jaws have not been widely used due to the complexity or inaccuracy of the definition, therefore, the anatomical and functional method is used in daily practice.

Anatomical and functional method

It is known from anatomy that with the correct shape of the face, the lips close freely, without tension, the nasolabial and chin folds are slightly pronounced, the corners of the mouth are slightly lowered.

The physiological basis of this method is the position of functional rest of the mandible and the fact that the height of the CA is less than the height of functional rest by 2-3 mm. Physiological rest is the free position of the lower jaw, in which the distance between the front teeth is 2-3 mm and the chewing muscles are in a state of functional tonic balance.

First, the models are examined, on which the boundaries of the basis of the complete prosthesis of the prosthesis, incisor papilla, palatine fossa, torus, midline of the alveolar process, maxillary tubercles, median lines, mandibular mucous tubercle should be marked with a pencil. The middle line and the line of the middle of the alveolar process should be displayed on the base of the model.

 Bases with occlusal rollers attached to them are called occlusion patterns (PS).

Basses are made of base wax or plastic. Rigid bases should be preferred to avoid possible deformation, especially in the anatomical conditions of the prosthetic bed that are difficult to stabilize the prostheses.

The bases should tightly cover the model, and their edges should correspond exactly to the boundaries of the prosthesis. It is necessary to ensure that the edges of the bases are not sharp.

Then the correction of the PS rollers is carried out. On the upper jaw, the height of the roller should be approximately 1.5 cm in the anterior section, and 5-7 mm in the area of the chewing teeth. In the anterior section, the upper roller should protrude slightly forward, its width should be 3-4 mm, in the lateral sections the roller should protrude from the top of the alveolar ridge by 5 mm and reach 8-10 mm in width.

Thus, the PS roller of the upper jaw along the perimeter and shape should correspond to the dentition.

PS is applied to the prosthetic bed of the upper jaw and the position of the upper lip is determined: she shouldn't be stressed or depressed. Lip position correction is performed by cutting or increasing wax on the vestibular surface of the roller. Then its height in the anterior section is determined.

At the same time, it must be remembered that since the length of the upper lip can be different, depending on this, the edge of the upper roller can protrude from under the lip by 2 mm (3), be at its level (2) or be located above the edge of the upper lip by 2 mm or more (1) (Fig. 1).

Having determined the level of the prosthetic surface, they begin to model it first in the anterior section, and then in the lateral ones. Modeling consists in creating a plane on the roller in the anterior section parallel to the pupillary line, and in the lateral ones - the nasolabial one, it is carried out by cutting or building wax on the occlusal surface of the PS roller.

When modeling the roller, the occlusal surface of the anterior roller is oriented towards the pupillary line. At the same time, two rulers are used. One is placed under the upper roller, the second is placed along the pupil line. These rulers should be parallel (Fig. 2). Then proceed to create a prosthetic surface in the lateral sections. For this purpose, one ruler is installed under the upper roller, and the other at the level of the lower edge of the wing of the nose and ear canal (Camper line). They should also be parallel. If necessary, the wax is cut off or increased in the lateral sections.



Варианты положения верхнего валика верхнего прикусного шаблона

по отношению к верхней губе.

 

Anatomical landmarks for determining the central ratio of the jaws on the face



After the parallelism of the roller surfaces along the pupillary and nasolabial lines is achieved, it is necessary to make the created prosthetic plane smooth. For this purpose

, it is advisable to use the Naisha apparatus (Fig. 3) or A.P. Voronov (Fig. 4).

The Naisha apparatus

The device of A.P.Voronov consists of two disks connected to each other and a wax collector. There is a spiral between the discs that heats the surfaces of the discs. One surface of the discs is smooth, for smoothing the wax occlusal roller, and the opposite one with protruding needles for instant heating of the entire surface of the PS roller when fixing the jaw CA, i.e. for manipulation, which is usually performed using a heated spatula. A toggle switch on an electric cord allows you to dose the heating temperature of the surfaces of metal discs.

 Then the vertical size of the lower part of the face is determined in a position of functional rest. Two points are marked on the patient's face with a pencil: one above the oral slit, the other below.

Most often, one point is placed on the tip of the nose, the other on the chin and the height of the lower part of the face is determined in the position of the lower jaw in a state of functional rest. The distance between the points is fixed on paper, on a wax plate or with a caliper. The latter method should be evaluated as the simplest and most accurate. When determining the height of functional rest, make sure that the patient's head is correctly positioned and the muscles are relaxed. They suggest making swallowing movements and after a while (2-3 seconds) fix the height.

However, Slavicek (Austria) writes that the height of functional rest changes with age (decreases), although no one says that 80-year-olds need to make prostheses with the same height as they were at a young age. it is necessary to check their stability, and to prevent deformation, cool them regularly in cold water.

The next stage is the packing of the lower roller to the upper one.

Usually, when the lower PH is inserted into the oral cavity, contact is noted only in the lateral sections, therefore, in this area the roller is cut off with a spatula or a Nisha device is used.

The height of the lower roller must be stored in such a way that when the jaws close, the distance between the marked points is less than at functional rest, by 2-3 mm. Along the perimeter, the lower occlusal roller should be identical to the upper one. One of the main points that ensure the success of the work is the uniform, planar contact of the rollers when they close.

 There are many ways to fix the rollers (brackets, separation discs, fixing with a heated spatula, liquid gypsum, etc.).

The following method of fixing the central ratio of the jaws is more often used. On the upper roller, in the area of the first premolars and molars, two incisions are made with a sharp spatula, not parallel to each other, and a well-heated strip of wax is applied to the lower occlusal roller.

The doctor places his fingers in the area of chewing teeth, suggesting that the patient touch the back third of the hard palate with the tip of his tongue and close his jaws in this position. Heated wax enters the incisions of the upper jaw, creating locks, and the heated wax plate is squeezed out from under the rollers, as a result of which there is no overestimation of the height of the lower part of the face. Then the occlusal rollers are removed from the oral cavity, cooled and the excess crushed wax is cut off. Several times, the correctness of fixing the central ratio of the jaws is checked. At this stage, phonetic tests can be performed. When pronouncing vowel sounds, the distance between the upper and lower occlusal rollers should be 2 mm, and when speaking — 5 mm.

When determining the central ratio, special attention should be paid to the point that we put on the chin. Sometimes patients involuntarily pull up their chin and the point may shift up or down to I cm. It is necessary to measure and check the distance between the points on the nose and chin with a relaxed lower lip.

In cases where there is a small interalveolar distance and it is not possible to put the teeth "on the groove" or when the tubercles of the upper jaw are lowered and rest against the top of the alveolar ridge on the lower jaw, and women are not satisfied with the configuration of the face (pronounced folds, wrinkles), it is possible to increase the interalveolar distance by 2-3 mm, i.e. by the height of the physiological peace.

Anthropometric landmarks and

placement of front teeth along anthropometric

lines

The last stage is the application of orientation lines for setting the six upper teeth.

Focusing on these lines, the technician chooses the size of the teeth. The middle line, the line of fangs and smiles must be applied to the upper roller. The first one is carried out vertically as a continuation of the median line of the face, dividing the tray groove of the upper lip into equal parts.

This line cannot be drawn along the bridle of the upper lip, which is quite often shifted to the side.

The median line is located between the central incisors. The line of canines running along their bumps descends from the outer wing of the nose. A line running horizontally is drawn along the border of the red border of the upper lip when smiling. Artificial teeth are placed in such a way that their necks are above the marked line (Fig. 5). With such an arrangement of artificial teeth, their necks and artificial gums will not be visible during a smile. In the event that the patient has prostheses, they are used to determine the height of functional rest and the perimeter of the vestibular edge for correct orientation.

With significant atrophy of the alveolar processes of both the upper and lower toothless jaws, with poor fixation of wax bases with occlusive rollers, with microstomy or inadequate behavior of the patient, it is advisable to determine the central ratio of the jaws on rigid bases that are much better fixed, do not deform, do not shift on the prosthetic beds of the jaws, and on which in the future it is possible to design dentitions by the method of setting artificial teeth.

Functional and physiological method

The human body is a complex constantly changing biological system, the regulation and development of which are carried out on the principle of feedback. As the body ages, tooth loss, and jaw atrophy, the functional capabilities of the entire complex of muscle, bone, and vascular tissues change. In this regard, the use of static methods, as well as methods that allow us to reflect in specific numerical values those functional and physiological features that are characteristic of the dental system at the time of orthopedic treatment, leads to a number of errors and a decrease in the quality of treatment.

It is known that a muscle can develop maximum effort only when the distance between the attachment points and the area of the muscle fiber are optimal for performing the function. This function is under the control of the central nervous, enzymatic and endocrine systems, which regulate according to the feedback principle.

The feedback signal can be registered during the operation of the dental system and reflect the effort that the entire muscle complex is capable of developing. However, the feedback signal is formed not only from the muscles and areas where food is ground, but also from the mucous membrane, tongue, etc.

The research conducted in 1984-1985 with V.Kharchenko, A.P.Voronov, N.K. Lyubomirova, K.A.Redotova, D.S.Aksenov, T.S.Petrova, V.P.Zaitsev allowed a new approach to solving this issue. They proposed to register the feedback signal, expressed in the amount of effort that the muscular apparatus of the maxillary system is capable of developing, with its balanced state and fixed position of the jaws, in which the muscles are able to develop maximum effort. The device used for this purpose allows you to simulate future loads on the mucous membrane of the prosthetic bed.

Fig. 6. Apparatus for determining the central ratio of the jaws (AOC)

Based on this approach, a special device was developed for determining central occlusion (AOC) with an intraoral device that allows you to determine the central ratio of the jaws, taking into account all the above factors and with an accuracy within +0.5 mm (Fig. 6). The device contains

 Apparatus for determining the central ratio of the jaws (AOC)

a device for recording signals coming from a special force sensor, which is placed on a support plate in the oral cavity. The set of the device includes a set of support plates for jaws of various sizes, as well as support pins and force sensor simulators.

Work with the device is carried out as follows. The manufactured rigid individual spoons are stored in the mouth. After shortening the edge by 1-2 mm, it is edged with an orthocore and functionally modeled.

On the lower individual spoon, a support plate with a force sensor is reinforced parallel to the pupil line, and on the upper one there is a special metal support pad included in the device kit.

The spoons prepared in this way are inserted into the oral cavity and a support pin is installed on the force sensor, which corresponds to the distance between the jaws in a state of functional rest.

With this ratio of jaws, the distance between them is obviously overestimated. The force sensor is connected to the recording part of the AOC device with access to the recorder and the patient is offered to close his jaws several times.

At the same time, the force is recorded, which develops the entire complex of the muscular apparatus, taking into account the malleability of the mucous membrane and other indicators, since the ratio of the jaws is simulated by a support pin, which not only limits the closure of the jaws, but also transfers the force to the prosthetic bed.

After registering this force, the pin is replaced with another smaller one at intervals of 0.5 mm, after which the patient is offered several times again

close your jaws as much as possible.

By changing the size of the pin, the position in which the muscles are able to develop maximum effort is recorded. At the same time, it should be noted that as soon as the distance between the jaws becomes less than required for optimal function, even by 0.5 mm, the force immediately developed will decrease.

It is this vertical ratio of the jaws that is the starting point from which all other parameters of the central ratio are counted. On the orthogram, a change in the distance of 0.5 mm is clearly recorded according to the indicators of the signal recorder.

Having determined the vertical ratio of the jaws, the lower one is extracted

Determination of the position of the lower jaw in relation to the upper jaw in a horizontal plane

the spoon is the basis, the pressure sensor is replaced with its simulator with a pin, which is selected based on the measurement results, and the spoon is reintroduced into the oral cavity. Molten wax is applied to the base plate of the upper base spoon with a thin layer and, placing the spoons on the jaws, they offer the patient to close his jaws and make several movements with the lower jaw forward and to the sides. At the same time, the pin will leave a trace in the form of an arrow tip on the support platform of the upper jaw (Fig. 7).

The top of this figure will be the extremely posterior position of the lower jaw in relation to the upper one. This point does not always correspond to the central ratio of the jaws. Therefore, the patient is offered to open and close the horn several times and observe where the pin rests.

As a rule, this point is located 0.5—1.0 mm in front of the tip of the arrow. Then, a perforated plexiglass plate is mounted on the support platform and again check which perforation the pin falls into.

If this is the same point, then in this position the lower jaw is fixed in relation to the upper one.

The next step is to determine the occlusal surface. It can be determined using both traditional methods, under the control of a support pin, and with the help of wax - carborundum rollers, which allow to achieve an optimal effect.

After strengthening these rollers on spoons with support pads with a sensor simulator and a pin, they are inserted into the oral cavity, while the rollers are made so that the pin does not reach the upper support pad by 1.5 – 2 mm. Lapping of the rollers is carried out according to the procedure described earlier, however, lapping is carried out under strict control of the pin, when using which it is impossible to reduce the height of the CA, and the central ratio of the jaws is easy to control by the location of the pin relative to the figure on the support platform of the upper jaw.

It is advisable to use this intraoral device also to obtain functional impressions under pin pressure. This will allow not only to take into account the pliability of the mucous membrane, but also to simulate the load on it during the use of the prosthesis and reflect the features of the prosthetic bed that arise during operation in the impression, and, consequently, the model according to which the prosthesis is made. The subsequent steps in the manufacture of prostheses are carried out in an articulator.

Thus, the proposed method and apparatus are the most accurate for determining the central ratio of the jaws, since all other methods make it possible to achieve success in two mutually perpendicular planes (front-back, left-right), and this method also includes the correct determination of height, i.e. the correct determination of the position of the lower jaw relative to the upper one in three mutually perpendicular planes.

 Diagram of a device for modeling a spherical surface when placing teeth on a sphere:

1- intraoral part; 2 — shank; 3 — extraoral part

Unfortunately, it should be noted that all the landmarks that we use when designing prostheses in the complete absence of teeth: the Frankfurt and Camper horizontals, the definition of functional rest, finding the incisor point by dividing the distance between the transitional folds of the upper and lower jaws in half, determining the posterior edge of the prosthetic plane are quite approximate.

For the purpose of setting artificial dentitions on spherical surfaces of the center, the vertical ratio of the jaws is determined using a device developed by A.L.Sapo zhnikov, M.A.Atak. It consists of an extraoral facial arch-ruler and an intraoral forming plate, the front part of which is flat, and the distal sections have a spherical surface (Fig. 8).

 In the usual way, the front part of the upper PS roller is modeled and, using it as a stop area, the pre-softened lateral sections of the roller are formed by the intraoral part of the device so that its extraoral part is parallel to the nasolabial and pupillary lines.

Then, with a hot spatula, the roller of the lower jaw is heated and the lower jaw is placed on the prosthetic bed of the lower jaw.

A pre-cooled upper PH and the intraoral part of the device are injected into the patient's mouth and the patient is asked to close his mouth, while making sure that the height of the PH rollers and the intraoral part of the device located between them corresponds to the height of the lower face when the lower jaw is in a position of functional rest. After removing the device having a thickness of 1.5-2 mm, the height of the central ratio of the jaws is obtained on the rollers formed on spherical surfaces. The correctness of the modeling of the PS rollers is checked by the presence of tight contact between them with various shifts of the lower jaw.