

THE MINISTRY OF HEALTH OF UKRAINE  
THE HIGHER STATE EDUCATIONAL INSTITUTION OF UKRAINE  
"UKRAINIAN MEDICAL STOMATOLOGICAL ACADEMY"

Approved  
at the meeting of orthodontics department  
«\_\_\_\_»\_\_\_\_\_20\_\_\_\_y.  
protocol №\_\_\_\_ by \_\_\_\_\_  
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**METHODICAL RECOMMENDATION**  
**for independent work of students during the preparation**  
**to practical lessons and on the lessons**

Academic discipline	Orthodontics
Module № 1	Orthodontia. Diagnostic of dentognathic anomalies and deformations.
The theme of the lesson № 6	Clinical methods of examination of patients with malocclusion. Subjective examination. Objective examination data.
Course	III
Faculty	Preparation of foreign students

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**1. The relevance of the topic.** Clinical examination is the primary method of examination in orthodontics. By interviewing the patient and conducting the examination, the doctor determines a preliminary diagnosis of the disease. Clinical examination allows to properly executing the clinical history of the patient. After the patients will need to fill accounting documents, which in addition to the medical history include piece of daily patient registration, statistical card, the card dispensary supervision, and the like. Therefore, knowledge of the characteristics of orthodontic examination and filling the accounting documentation is important in the training of a dentist-orthodontist.

## **2. Specific objectives:**

To analyze the results of a survey of orthodontic patients and their parents.

To analyze the results of the collection of complaints.

To analyze the results of the determination data of the anamnesis of life and disease.

To analyze the results of the clinical examination of orthodontic patient.

## **3. Basic knowledge's, abilities, skills necessary for studying the topic (interdisciplinary integration)**

Name of previous disciplines	Skills
1. Anatomy	to describe the features of structure of bones of the facial skeleton; to depict schematically the structure of the temporomandibular joint in different age periods; to determine the anatomical characteristics of different groups of temporary and permanent teeth; group identity the temporary and permanent teeth.
2. Prevention of dental diseases.	to describe timing, order, sequence of eruption of permanent teeth; the number of teeth in periods of temporary, removable and permanent occlusion.
3. Propaedeutics of therapeutic dentistry.	to describe the difference between the structure of temporal and permanent teeth.

## **4. Tasks for independent work during preparation to the lesson and on the lesson**

4.1. A list of the main terms, parameters, characteristics that need to learn by the student during the preparation to the lesson:

Terms	Definition
1. Subjective examination	A stage of clinical survey in which interview of the patient.
2. Passport (chronological or calendar) age	This is the period from birth to any particular moment of life.
3. Biological or anatomical and physiological age	Is determined by the set of metabolic, structural, functional, and regulatory characteristics of adaptive opportunities of an organism and is a required function of time, but unlike a passport, is characterized by less distinct intervals of time, during which irreversible age-related biological changes in the body.
4. Bone age	The age of a person is determined by the condition of the bone system.
5. Objective examination	A stage of clinical survey in which carried out examination of the patient (posture, face, maxillofacial area). The main admission objective of the examination of the orthodontic patient includes a general examination, determination of Constitution and characteristics of the face structure, the examination of the oral cavity.

#### 4.2. Theoretical questions to the lesson:

1. What parts do clinical methods of examination consist of?
2. What is the biological age of a person?
3. The dates of determining the bone age of a person.
4. What etiological factors influence the development of the dentognathic apparatus in the antenatal period?
5. What is the meaning of the natural feeding of a baby?
6. The classification of tongue frenula by F.Y. Khoroshilkina.
7. Write the dental formula of permanent teeth by FDI-ISO.
8. Write the dental formula of temporary teeth by FDI-ISO.
9. In what directions is the examination of occlusion conducted?
10. On the basis of what evidence is the provisional diagnosis put?

#### 4.3. Practical works (task) which are executed at the lesson:

- to build the abstract structure stages of clinical examination;
- to sketch in the album a flow diagram of the three planes (vertical, sagittal, transversal);
- to record of clinical functional tests;
- to record the classification of types of bridles upper lip and tongue;

- to sketch in the album a diagram of the three divisions of the face;
- to sketch in the album schematic of the three profile types (direct, concave, convex).

### **The content of the topic:**

In orthodontic practice, at dentognathic anomalies and deformations detected, clinical and additional methods of examination are to be conducted to solve the question of the choice of treatment method.

Physical examination is the main in giving orthodontic diagnosis and consists of subjective and objective methods of investigation. Subjective investigation methods include the passport part and obtaining anamnesis. Objective methods include external examination and oral cavity examination, i.e. detecting facial and intraoral signs of anomalies.

In the passport part there are noted: the surname, name, and patronymic name of the patient; sex; age; the place of residence of the patient and his/her parents; the place of studying or work; means of contacting the patient or his/her parents.

There are distinguished the passport, biological, dental, and bone age. *The passport* (calendar) age is the period from birth to a definite moment. *The biological* (somatic, anatomico-physiological) age is determined by a number of metabolic, structural, functional, adaptive abilities of the organism and is an obligatory function of time. The biological age may correspond to the passport age, outdo or be behind it. *The bone* age is detected by the state of the skeletal system, hand roentgenograms are used to detect it.

Comparison of the passport age with the somatic, dental, and bone ones is necessary to ascertain the deviations in dentognathic apparatus growth and formation.

The address and telephone are needed for operative communication with the patient, because the duration of orthodontic treatment demands many visits of the doctor, and remoteness of the place of residence influences the choice of orthodontic treatment means.

The anamnesis data is obtained from the words of the patient or his/her parents. During interrogation it is important to define the reason which made them appeal for orthodontic help. Most often the child's parents fix attention on an esthetic drawback and more seldom connect local changes (mastication violations, teeth absence, etc.) with the general development of the child's organism. It is worth finding out the mother's state of health during pregnancy; if it was not the first pregnancy, how the previous ones ended; whether there were attempts of interrupting the pregnancy; toxicosis, its character and in what period of pregnancy; if the mother had any metabolic derangements or hormonal disorders; whether rhesus-factor was observed.

The presence of pharmacological, chemical, radiative and other factors influence, and also infectious and virus diseases the patient had (measles and

German measles in particular), stresses, smoking, hazardous employment, daily routine violations, unbalanced diet, as such factors may be the reason for congenital anomalies and deformations.

Also it should be found out if there have been abnormalities of fetal lie, if the fetus had any mechanical thermal injuries, how the labor passed, if the child was born full-term or premature, with what weight.

A birth injury (forceps delivery or vacuum obstetrics) may adversely affect the general development of the child and become the reason for deviations in dentognathic apparatus growth and development.

Heredity is very important in dentognathic anomalies development. In the clinical practice the so-called *family circumstances of development* are often met; these are deviations present in one or both parents or close relatives. The child inherits some peculiarities of dentognathic apparatus and face development from parents. This concerns the size, form, number of teeth, jaws location, sometimes their size, peculiarities of muscles and functions of soft tissues. The child can inherit all the peculiarities from one parent or, for instance, teeth sizes and form from the father and jaws sizes and form from the mother, which might cause the violation of teeth and jaws sizes correlation.

Hereditary diseases and malformations lead to a significant change in the structure of the facial skeleton: congenital nonunion of the upper lip, alveolar process, hard and soft palate, Pierre Robin's, Crouzon's, and Franceschetti–Klein's syndromes. Changes of enamel (enamel dysplasia), dentin (dentinogenesis imperfecta), and an abnormality of enamel and dentin known as Steinton–Capdepon's syndrome may be hereditary. Anomalies of sizes of teeth (macro- and microdentia) and jaws (macro- and microgenia), their position in the skull (prognathism and progenia) can also be hereditary. As it is known, hereditary diseases are subject to continuous care and demand big experience and attention of the orthodontist, huge patience and obedience from the patient.

When obtaining anamnesis special attention should be paid to the character of feeding (breast, artificial or mixed, till what time).

A child is born with unconditioned sucking reflex, the lower jaw relative to the upper one is located distally (infantile retrognathia). Such location of the lower jaw, first of all, facilitates the passing of a child along the maternal passages, and secondly, together with other peculiarities (flat palate, gingival membrane, transversal palatine folds, sucking pads, the absence of articular tubercle) the oral cavity of an infant promotes natural breast feeding. As a result of the functional activity of the maxillofacial muscles, which define the rhythm of lower jaw movements along the sagittal plane, the active growth of the lower jaw takes place, and by the end of the 1<sup>st</sup> year of life retrognathia turns to orthognathia.

Natural feeding promotes regular development not only of the dentognathic apparatus but of the whole organism, because a child gets full-value nutrition with the mother's milk, which strengthens immunity.

At artificial feeding (especially when a big opening is made in the nipple) swallowing movements prevail over the sucking ones. At wrong (overturned)

position of the head the maxillofacial muscles do not take active part in the act of sucking and the lower jaw delays in its development, which promotes dentognathic pathologies formation. Besides, an artificially fed child more frequently falls ill with infectious and allergic diseases.

Dentognathic anomalies can be a consequence of feeding a child older than 3 years with soft ground food. At that the dentognathic apparatus does not get enough load, which may result in the absence of diastemas and diastems between temporary teeth before their replacement and further dense teething and irregular position of permanent teeth as mechanic load is one of the factors of jaws' growth and development.

Of great importance are the terms of temporary teeth eruption and their quantity by the 1<sup>st</sup> year of life, diseases of teeth and mouth cavity, the time when a child begins to walk and talk. By this data the child's growth and development are judged. It is found out what diseases – infectious, allergic, systemic – and at what age the child has had, how often they repeated. It is important to find out the way of breathing during the day- and nighttime (nasal or oral), if the child sleeps with the mouth open or closed, favorite position during sleep, if there has been adenotonsillectomy or stomatological interventions and at what age, the state of the ENT organs at the time of anamnesis obtaining, the presence of bad habits with no adaptive meaning (sucking fingers, lips, cheeks, tongue, different objects) or with compensatory adaptation character (dentognathic apparatus functions violation), which may cause dentognathic anomalies.

The time and reasons for premature loss of temporary or permanent teeth are made more exact. When obtaining anamnesis attention is paid to the disturbances of the locomotorium, diseases of the cardiovascular, pulmonary, endocrine, and nervous systems, congenital anomalies of the soft tissues and facial bones of the patient.

After obtaining anamnesis the objective examination of the patient begins. Orthodontic patient examination includes general inspection, face structure study, examination of the mouth cavity, dentitions and jaws, occlusion, detecting functional violations.

Objective examination begins with general inspection. At that attention is paid to the general development of the child and its correspondence to the age, height, body weight, constitution, the form of hands, head; attention is paid to the physical development and carriage. Besides, the doctor pays attention to the color and integrity of the cutaneous coverings of the face, checks the state of TMJ (palpation during lower jaw movements). After that the state of the submandibular, sublingual, and parotid lymph nodes is checked. During general external examination deformations and defects connected with congenital malformations, abnormalities, and operative measures are detected.

The face and head are examined en face and in profile. The type of face is influenced by the maturity of the cerebral cranium, respiratory system, mastication muscles or musculoskeletal system. Therefore the form of the head and face can resemble the form of a circle, square, rhomb, truncated cone, triangular, with the

base directed upwards or downwards. Besides, they can be wide, average and narrow.

V. Bauer differentiates four face types:

- cerebral;
- respiratory;
- digestive;
- muscular.

*The cerebral type* is characterised by the excessive development of the brain and accordingly of the cerebral cranium. The high and wide forehead part of face sharply prevails over other parts – the face of pyramidal form with the base directed upwards.

*The respiratory type* is characterised by the prevailing development of the ventral part of face, because of what the facial part of head, neck and body acquire a number of peculiar features. The face is of rhomboid form, the nose is strongly developed lengthwise, its dorsum is not infrequently convex.

*The digestive type* is characterised by the prevailing development of the lower part of face. Both jaws are developed excessively. Because of the excessive development of the lower part of face at the relative narrowness of the forehead part the face sometimes acquires a characteristic form of trapezium.

*The muscular type* — the upper and lower parts of face are approximately equal, the hair margin is usually straight, the face is square.

S.I. Kryshab differentiated the configuration of face by constitution type:

- dolichocephalic;
- mesocephalic;
- brachycephalic.

To find out the correlation between the form of face and jaws it is also important to study the form of profile, which may be convex, straight, concave. During the study of face configuration attention is paid to the symmetry and proportionality of its parts. Special attention is paid to the configuration of the lower part, which has big diagnostic significance. Correct diagnosis can be based on the changes of the morphological peculiarities of this part. They include: nasolabial and mental folds; angles of mouth; oral fissure size; lips correlation and the line of their closure; lips configuration; the height of the lower part of face; chin appearance – chamfered to the back, protruding or neutral; lower incisors position relative to the lower lip; orbicular muscle of mouth condition.

The results of such investigation allow finding out how much the deformation has reflected on the patient's appearance. Visual and metric evaluation of the face at its various dynamic states has shown (V.A. Pereverzev) that during conversation the lower lip is more active. Mouth and fauces investigation presupposes sequential examination of their hard and soft tissues.

Oral cavity organs examination is conducted with the help of a mouth mirror, forceps, and a probe. First, the mucous tunic of the cheeks, alveolar processes, palate, mouth cavity floor, and tongue are examined. The tonsils and posterior pharynx wall are to be examined. The humidity and color (pink, pink-

pale, cyanotic) of the mucous tunic, density, sensitiveness, hemorrhage, swelling, injuries, and aphtae presence are marked. Pressure sensitivity and density of tissues are determined by means of palpation. The position of the frenula of the lower and upper lips is studied as they may cause diastems. Frenula anomalies are characterised by the place of attachment, form, and size.

H.Y. Pakalns divides frenula into:

a) firm frenula with attachment place on the apex of interdental small papilla; at pulling the lip with such a frenulum the interdental small papilla moves too;

b) average – attachment at the distance of 1 to 5 mm from the apex of interdental small papilla;

c) weak, which attach in the region of transitional fold.

Deviations from the normal location of lips frenula most often occurs in the region of the upper lip.

During tongue examination attention is paid to its size, lateral regions relief, and also position of the frenulum of tongue. A shortened frenulum of tongue, attached close to its apex, can be the reason for a number of morphological and functional disorders in the dentognathic apparatus, including that of newborns.

F.Y. Khoroshilkina differentiates 5 types of the frenulum of tongue.

*The 1 type* includes thin, almost transparent frenula, attached normally, but which limit tongue movements because of small length.

*The 2 type* includes thin, semitransparent frenula, which attach close to the apex of tongue and have small length. During tongue lifting a sulcus forms in the centre.

*The 3<sup>rd</sup> type* includes the frenula, which are a solid, short band, attached close to the apex of tongue. During tongue protruding the apex rolls down, and the back bursts because of tension. The lick of the upper lip is complicated, and sometimes impossible. Palpation of such a frenulum shows that tongue mobility limitation is conditioned by the fixation of its apex with a connective tissue band. Under the band, which has a form of a cord, thin mucous tunic duplication is located.

*The 4<sup>th</sup> type* includes the frenula, whose band, even though standing out, is inter-grown with the tongue muscles. Such frenula are often observed in children with congenital fissures of lip, alveolar process, and palate.

*The 5<sup>th</sup> type* includes frenula with a hardly noticeable band, but its fibers are located in the thickness of tongue, interwoven with its muscles and limit movements.

Tongue muscles functional state is interconnected with the sagittal dimensions of dentitions: the length of the anterior part of dental arch and its apical basis, the projective length of the whole dental arch. It has been detected that the narrower dental arch and the apical basis of the upper and lower jaws, the smaller volume of the mouth cavity and the higher biopotential of the tongue muscles.

The tongue is a strong muscle organ, which influences the formation of the dentognathic apparatus considerably. Tongue function violation may cause upper



incisors protrusion, distal, mesial, open or cross bite. When examining the oral cavity vestibule its depth is detected. The vestibule depth is the distance in millimeters from the middle of the gingival margin to the floor of the oral cavity vestibule.

According to Y.L. Obraztsov's (1992) classification, vestibule depth can be of 4 types:

- the 1<sup>st</sup> – up to 3 mm (very shallow);
- the 2<sup>nd</sup> – up to 5 mm (shallow);
- the 3<sup>rd</sup> – 5-10 mm (of medium depth);
- the 4<sup>th</sup> – more than 10 mm (deep).

A shallow vestibule of mouth may lead to the underdevelopment of the frontal part of the lower jaw and provoke congestion of the lower frontal teeth.

After the examination of the mucous tunic teeth examination begins: their color, size, form, position, relief, integrity, positional relationship in the dental arch, position relative to the margins of lips and other parts of face, proportionality relative to one another and the whole face and its parts, harmony of teeth form and face form, etc.

Teeth and dental arch examination is conducted in certain order, beginning from the upper jaw, and each tooth is examined one after another from the 3<sup>rd</sup> molar on one side to the similar tooth on the other side.

From the point of view of the orthodontist, attention is paid to the quantity of teeth in the first place. First of all, the dental formula is marked: temporary teeth – with Roman numerals:

V IV III II 1|1 II III IV V  
V IV III II 1|1 II III IV V

permanent teeth – by Zigmond:

87654321|12345678  
87654321|12345678

When describing the dental formula, these days the two-digit system of notation, offered by the International Dentists Organization FDI-ISO, is used, which consists in the digital notation of their location on the appropriate side of the upper or lower jaw. According to this system each tooth is marked with two Arabic figures. The first figure on the left marks the quadrant of tooth location. Notation begins from the upper right jaw and proceeds clockwise. The right upper jaw is marked with the figure 1, the left – 2, the left part of the lower jaw – 3, the right – 4. The sequence number of tooth is marked beginning from the central incisor (1) to the 3<sup>rd</sup> molar (8).

In temporary teeth occlusion the right upper jaw is conditionally marked with the figure 5, the left – 6, the left part of the lower jaw – 7, the right – 8. The sequence number of tooth is also marked with Arabic figures beginning from the central incisor (1) to the 2<sup>nd</sup> molar (5).

**Dental formula of permanent occlusion:**

18 17 16 15 14 13 12 11 21 22 23 24 25 26 27 28  
 48 47 46 45 44 43 42 41 31 32 33 34 35 36 37 38

### **Dental formula of temporary occlusion:**

55 54 53 52 51|61 62 63 64 65  
 85 84 83 82 81|71 72 73 74 75

To detect teeth quantity a certain rule is to be stuck to: teeth are counted beginning from the group of incisors, then the canine teeth are examined, the premolars and molars, beginning from the teeth of the upper jaw. The correspondence of the dental age to the passport one is judged by the dental formula.

Teeth examination allows detecting anomalies of their color, structure, form, and position: oral, vestibular, mesial or distal, supraocclusion and infraocclusion, tooth torsion, a diastem, some teeth congestion. After teeth examination dental arches investigation begins.

When examining dental arches, attention is to be paid to their form and dimensions, continuity.

The further stage is occlusion examination. At clinical examination dental arches closure in three mutually perpendicular directions (sagittal, vertical, and transversal) is investigated, the degree of present deviations expressiveness is found out, and according to this occlusion is characterised. Dental arches closure is an important clinical sign, which considerably defines indications to orthodontic treatment.

V.A. Pereverzev singles out the following signs of a harmoniously developed face: its three parts (upper, middle, and lower) are approximately equal in height; the nasolabial angle varies from 90° to 100°; the face convexity angle makes 160–170°; the sagittal inclination of the upper frontal teeth makes from 90° to 100°; the transversal inclination of the upper frontal teeth is from 5° to 10°; the same index for similar lower teeth makes 0°; the bend angles of the upper dental arch, upper lip, and horizontal profile of palpebral fissures are equal and vary within 170°; the filter width is equal to the width of two upper central incisors; the distance between eyes is equal to the width (length) of one eye, and both these indexes are identical to the width of upper incisors; the ear height equals to the height of every third of face, and in the sagittal plane is in harmony with the nose profile.

All listed above methods of clinical examination (anamnesis obtaining, external examination, oral cavity examination) allow giving provisional diagnosis to an orthodontic patient. Examination data are put down into the outpatient's card, which is the main medical document.

The team of the Chair of Orthodontics and Prosthodontics Propedeutics of the O.O. Bohomolets NMU has worked out the individual medical history of an orthodontic patient, which most completely describes the stages of patient's examination, is rather graphic and handy for the doctor.

### **Materials for self-control:**

A. Tasks for self-control (tables, diagrams, drawings, graphs):

1. To build in the album the structure of the stages of clinical examination.
2. To sketch in the album a flow diagram of the three planes (vertical, sagittal, transversal).
3. To record of clinical functional tests.
4. To record the classification of types of bridges upper lip and tongue.
5. To sketch in the album a diagram of the three divisions of the face.
6. To sketch in the album schematic of the three profile types (straight, concave, convex).

B. Tasks for self-control:

1. At direct evaluating an orthodontic patient face most important is:

the face parts proportionality

the form of the nose

the development of the auricles

the shape of the eyes

the shape of the chin

2. To note the most important in the assessment of the soft tissues of the oral cavity with dental anomalies:

the state of the frenulum of lips and tongue

mobility of the soft palate

index PMA

tongue state

the shape of the lips

3. What of next clinical signs is not related to the characteristics of the infantile swallowing?

unequal teeth abrasion

"lemon crust" symptom

shortened tongue frenum

placing the tongue apex between the dental arches

the tongue to lips pushing

4. Which points not use for posture assessment:

shoulder

scapula-shoulder

thigh

nape

heel - knee

5. Subjective examination of the patient consists of the following dates:

the passport dates , the patient complaints, anamnesis of life and disease

passport dates of the patient and external examination  
passport dates of the patient and complaints  
passport dates of the patient and the anamnesis of life  
passport dates of patient and anamnesis of disease

6. What types of age are distinguish:

passport, biological, dental, bone  
passport and dental  
biological and bone  
dental and bone  
passport and stomatological

7. The “dental age” can to determine:

development of the child  
the number of deciduous teeth  
state of deciduous teeth root resorption  
the stage of permanent teeth roots formation  
the sex of the child.

8. Examination of the orthodontic patient consists of:

general examination, posture definition, examination of the head, face and oral cavity  
examination of the head and oral cavity  
examination of the oral cavity  
examination of dentition and occlusion  
examination of the face and mouth

9. The oral exam starts with the inspection of:

the vestibule of the oral cavity  
the individual teeth.  
the dentition.  
the bite.  
the oral cavity

10. Normal or simple lip should be placed at such a distance from the gingival margin:

5 mm  
4 mm  
3 mm  
2 mm  
1 mm

11. Description of the bite in these planes makes:

sagittal, vertical and transversal

sagittal, vertical  
vertical, transversal  
transversal, sagittal  
horizontal, frontal

12. On clinical examination results possible the following part of the diagnosis to define:

morphological, etiological and aesthetic  
morphological and functional  
aesthetic and functional  
functional and etiological  
aesthetic and etiological

13. The etiological part of the diagnosis can be determine by:

the dates of life anamnesis and examination  
the history disease  
examination  
passport dates  
dental age

14. Define guidelines to describe malocclusion in a sagittal plane:

the over jet presence, the canines and molars relation  
the depth of incisal overlap, the canines and molars relation  
the presence of the vertical space, the canines and molars relation  
midlines coincidence, the canines and molars relation  
the buccal cusp of posterior teeth relation

15. Identify the guidelines to describe the dentition in the transversal plane:

midlines coincidence, the buccal cusp of posterior teeth relation  
the depth of incisal overlap, the canines and molars relation  
the presence of the vertical space, the canines and molars relation  
midlines coincidence, the canines and molars relation  
the over jet presence, the canines and molars relation

16. Define guidelines for the description of the malocclusion in the vertical plane:

the depth of incisal overlap, the presence of the vertical space  
midlines coincidence, the buccal cusp of posterior teeth relation, the canines and molars relation  
the presence of the vertical space, the canines and molars relation  
midlines coincidence, the canines and molars relation  
the over jet presence, the canines and molars relation

17. The biological age of the child is determined in the following way:

the complex of metabolic, functional and regulatory characteristics of the organism

the number of teeth that erupted  
the degree of hand bones mineralization  
from the moment of birth until the time of the survey  
with constitutional symptoms

18. Aesthetic component of the diagnosis is based on the definition:  
the proportionality of the face, the profile type, the severity of the folds, the shape of the face  
the proportionality of the face  
the profile type  
the severity of the folds  
the shape of the face

19. Physiological asymmetry considers the difference between the right and left sides of the face to:

2.0 mm  
1.0 mm  
1.5 mm  
0.5 mm  
2.5 mm

20. Determining the nose-labial folds depth is important in the diagnosis of malocclusion in a plane:

sagittal  
vertical  
transversal  
frankfurt  
orbital

21. Determining the depth of the mental fold is important in the diagnosis of malocclusion in these planes:

sagittal and vertical  
sagittal and orbital  
sagittal and transversal  
vertical and transversal  
vertical and orbital

22. During the individual teeth examination, allows to determine:

anomalies of size, shape and structure, color, number, eruption  
anomalies of size, shape and structure  
anomalies of color  
anomalies of eruption  
anomalies of number

23. Normal dentition form in temporary physiological occlusion are:

semicircle  
oval  
parabola  
arched  
trapezoid

24. Normal upper dentition form in physiological permanent occlusion are:

semi oval  
semicircle  
parabola  
arched  
trapezoid

25. Normal lower dentition form in physiological permanent occlusion are:

parabola  
semicircle  
semioval  
arched  
trapezoid

26. What functions can to be evaluated during the clinical tests with drink of water?

breathing, closing of lips and swallowing  
breathing, sucking  
breathing, chewing and swallowing  
chewing, swallowing  
sucking, swallowing

27. What clinical tests use to determine respiratory function state?

cotton fibers and with a drink of water  
Esler-Bitner test  
with hazelnuts and drink of water  
Ilyina-Markosyan test  
Frenkel test

28. What clinical tests use to determine swallowing function state?

with a drink of water  
Esler-Bitner test  
with hazelnuts and drink of water  
Ilyina-Markosyan test  
Frenkel test

29. During the infantile swallowing the tongue pushes from:

closed lips  
from the alveolar process  
from the hard palate  
from the frontal teeth  
from the lower frontal teeth

30. In the somatic model of swallowing, the tongue pushes from:  
from the upper front teeth or the hard palate  
from closed lips  
from the lower alveolar process  
from the upper lateral teeth  
from the lower frontal teeth

31. The frenulum of the upper lip has a number of types (by F. Khoroshilkina):  
3  
2  
4  
5  
6

32. The frenulum of the tongue has a number of types (by F. Khoroshilkina):  
5  
2  
4  
3  
6

33. The anterior buccal cusp the upper first permanent molar at a physiological permanent occlusion is located as follows:  
between mesial and distal buccal cusp of the same lower  
above the buccal cusp of the same lower  
between the cusp of lower first molar and second premolar  
between the first and second lower molars  
above the buccal cusp of second lower molar

34. The incisors covering at orthognatic permanent occlusion is:  
from 1/3 to 1/2 crown height  
from 1/2 to 2/3 crown height  
all crown height  
more than all crown height  
edge to edge contact

35. At the record of dental formula by system of FDI-ISO the temporal teeth of right maxillary segment denotes a number:



5  
2  
1  
8  
7

36. At the record of dental formula by system of FDI-ISO the temporal teeth of the left part of lower jaw denotes a number:

7  
2  
5  
8  
1

## **Literature**

### **Main:**

1. Fleece P.S. "Orthodontics". -Kyiv, MEDICINE, 2008, - 65-76 p.
2. Golovko N.V. et al. Orthodontics. Occlusion development, diagnostic of malocclusion, orthodontical diagnosis. Poltava,- 2008, - 95p.

### **Additional:**

1. Pubmed. – Режим доступу: <http://www.ncbi.nlm.nih.gov/pubmed/>
2. Google Scholar – Режим доступу: <https://scholar.google.com.ua/>
3. BASE. – Режим доступу: <https://www.base-search.net/>
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