

**Ministry of HealthCare of the Republic of  
Belarus  
BELARUSIAN STATE MEDICAL  
UNIVERSITY**

*Department of Prosthodontics*

**METHODOLOGY TEXTS for Practical Training of  
Students  
5-th year, 9-th semester**

Methodology Texts were approved at the Methodical  
Meeting of Prosthodontics Department August 30, 2023 №1

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APPROVED by  
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Protocol of the Methodical  
Meeting of the Department № 1  
August 30, 2023

### **Assessment criteria of learning outcomes (grade descriptors)**

#### **Grade “10” (ten)**

is given to the students who show comprehensive systematic and in-depth knowledge in all areas of the curriculum, as well as on the main issues that go beyond its borders, are fluent in the basic concepts of the prostodontics course, display evidence of extensive background reading of relevant and additional literature recommended by the curriculum, can communicate the material stylistically correctly and in a highly-structured way. The student must demonstrate the ability to independently and creatively solve complex problems, critically evaluate and analyze the theories and concepts in the areas of prostodontics and apply the knowledge of other disciplines to the task set. The student must actively participate in group discussions and show a high level of culture while undertaking the tasks.

#### **Grade “9” (nine)**

is given to the students who show deep and systematic knowledge in all areas of the curriculum, are fluent in the basic concepts of the prostodontics course, display evidence of extensive background reading of relevant literature and are familiar with the additional resources, can present the material stylistically correctly and logically coherently. The student must demonstrate the ability to independently and creatively solve complex problems within the framework of the curriculum, feel confident in the basic theories and concepts of prostodontics and give them critical evaluation. The student must actively participate in group discussions and show a high level of culture while undertaking the tasks.

#### **Grade “8” (eight)**

is given to the students who show deep and systematic knowledge on the identified issues within the scope of the curriculum, are fluent in the basic concepts of the prostodontics course, display evidence of extensive background reading of relevant literature and are familiar with the additional resources, recommended by the curriculum, can present the material stylistically correctly and logically coherently. The student must demonstrate the ability to independently solve complex problems within the framework of the curriculum and feel confident in the basic theories and concepts of prostodontics. The student must actively participate in group discussions and show a high level of culture while undertaking the tasks.

#### **Grade “7” (seven)**

is given to the students who show full and deep knowledge in all areas of the curriculum, have a good command of the basic concepts of the prostodontics course, display evidence of extensive background reading of relevant literature and are familiar with the additional resources, recommended by the curriculum, can present the material stylistically correctly and logically coherently. The student must demonstrate systematic knowledge of prostodontics, show the ability to independently solve complex problems and feel confident in the basic theories and concepts of prostodontics. The student must actively participate in group discussions, show a high level of culture while undertaking the tasks.

**Grade “6” (six)**

is given to the students who show sufficiently complete knowledge within the scope of the curriculum, have a good command of the basic concepts of the prostodontics course, can communicate the material amply, are able to make informed judgments, display evidence of background reading of the relevant literature recommended by the curriculum. The student must demonstrate systematic knowledge of prostodontics, show the ability to independently apply the standard solutions within the framework of the curriculum, feel confident in the basic theories and concepts of prostodontics and give them a comparative assessment. The student should periodically participate in group discussions, show a high level of culture while undertaking the tasks.

**Grade “5” (five)**

is given to the students who show sufficient knowledge within the scope of the curriculum, have a good command of the basic concepts of the prostodontics course, can stylistically competently communicate the material on the identified issues, are able to make informed judgments, display evidence of background reading of the relevant literature recommended by the curriculum. The student must demonstrate the ability to independently apply the standard solutions within the framework of the curriculum, feel confident in the basic theories and concepts of prostodontics and give them a comparative assessment. The student must participate in group discussions, work independently in practical classes, show a high level of culture while undertaking the tasks.

**Grade “4” (four) – acceptable (passed)**

is given to the students who show sufficient knowledge within the educational standard, have a good command of the basic concepts of the prostodontics course, use scientific terminology, can stylistically correctly and logically appropriately communicate the material, are able to draw conclusions without significant errors, display evidence of background reading of the relevant literature recommended by the curriculum. The student must demonstrate the ability to solve standard problems under the supervision of a teacher, feel confident in the basic theories and concepts of prostodontics and be able to evaluate them. The student must work in practical classes under the guidance of a teacher, demonstrate acceptable level of culture while undertaking the tasks.

**Grade “3” (three) – unacceptable (failed)**

is given to the students who show insufficiently full scope of knowledge within the educational standard, have a low level of command of the basic concepts of the prostodontics course, communicate the material on the identified issue with significant linguistic and logical errors, are incompetent in solving standard problems, show little evidence of background reading of the relevant literature recommended by the curriculum, are not familiar with the basic theories and concepts of prostodontics, are passive in practical classes, show a low level of culture while undertaking the tasks.

**Grade “2” (two) – unacceptable (failed)**

is given to the students who show fragmentary knowledge within the educational standard, communicate the material with serious stylistic and logical errors, display little knowledge of the relevant literature recommended by the curriculum, are passive in practical classes, show a low level of culture while undertaking the tasks.

**Grade “1” (one) – unacceptable (failed)**

is given to the students who show lack of knowledge and competences within the educational standard or refuse to answer.

## Literature

### Basic:

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.
2. Lecture material

### Additional:

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник
4. Fixed dentures. Algorithm of producing. («Клинико-лабораторные этапы изготовления несъемных зубных протезов») / С. А. Наумович [и др.]. – 3-е изд. – Мн. : БГМУ, 2018. – 30 с.

## **Scheme of case history**

- I. Passport data: surname, name, patronymic name,  
gender, age,  
profession (occupation), place of work  
address, date of visit to the dental clinic.  
Diagnosis
- II. Complaints
- III. Anamnesis of disease (onset of disease, clinical course, kind  
(type) and volume of previous treatment):
  1. Presence of teeth grinding
  2. Oral hygiene (tooth brushing or rinsing).
- IV. Anamnesis of life (date and place of birth, social environment,  
ethnographic membership, heredity, diseases, neuropsychic traumas,  
conditions of work, way of life, occupational hazards).
- V. Data of objective examination:
  - a) external appearance
  - b) state of moveable oral mucosa and its formations  
(frenulums and cords)
  - c) state of oral mucosa covering alveolar processes, gums and palate
  - d) tooth formula
  
  - e) type of bite
  - f) state of teeth:
    - presence of pathological mobility during palpation and  
occlusal contacts,
    - presence of gum pockets, their characteristics,
    - gum recession degree
    - V-shaped defects; caries
    - tooth plaque and deposits
    - pathological tooth wear, direction of abrasion spots
  
    - clinical crown to root ratio
    - shape of dental arches
    - secondary displacements of teeth
    - diastemas , interdental gaps
    - height of the cusps
    - protrusive and lateral contacts
    - teeth, which block movements of mandible (revealed by palpation  
and using articulating paper)

ж) X-ray examination: teeth (state of hard tooth and root tissues, size of pulp chamber and root canals, width and state of periodontal fissure, state of (cortical plate) compact plate of the wall of the dental alveolus, bone pockets, hypercementosis of the tooth root,  
- alveolar process (horizontal or vertical atrophy, sclerotic changes)

Parodontogram

VI. Diagnosis and its substantiation

VII. Differential diagnostics

VIII. Aetiology and pathogenesis

IX. Choice of denture construction.

X. Plan of prosthodontic treatment

XI. Diary

XII. Epicrisis, literature.

## Class 1

**Subject:** Classification of anomalies of the teeth, dentition and occlusion(bite).

**Objective:** to study the anomalies of the teeth, bite and dentition in adolescents and adults.

### Entry knowledge control:

1. Anatomy and morphology of the dentoalveolar system.
2. The growth and development of the jaws.
3. The terms of eruption of milk and permanent teeth.
4. Bite and its variants.
5. Pathogenesis of dentoalveolar anomalies.

### Control questions:

1. The classification of anomalies of teeth, dentition and occlusion (Angle, Katz, Kurlandsky, Kalvelis, WHO).
2. Characteristics of teeth position anomalies.
3. Characteristics of the dentition anomalies.
4. Characteristics of malocclusions: prognathism; open bite; deep bite; cross-bite.

### Case studies.

1. Patient E., 19 years old, complained of missing contacts of the front teeth, the presence of a gap between the front teeth of 1 cm. Objectively: tooth contacts in centric occlusion occur only between molars on both sides, the gap between the upper and lower front teeth about 1 cm. Determine the kind of the anomaly and give its short description.
2. Patient A., 16 years old. Complaints are about the constant injury of the mucosa of the hard palate with lower incisors in the area behind the front upper teeth. Objectively: visible traumatic abrasions of the mucosa with imprints of cutting edges of lower incisors in the front part of the hard palate. Determine the kind of the anomaly. Give its description.
3. Patient K., 18 years old, complains of the presence of strongly expressed and outstanding mandible. Objectively: lower teeth overlap the upper teeth about 2/3 of the length of tooth crowns. Protrusion of the lower jaw. The sagittal gap about 2 mm between the teeth of the upper and lower jaws. Determine the kind of the anomaly and give its description.
4. Patient F., 20 years old, contacted the orthodontist with complaints of the vestibular position of the upper canine, which is protruding labially out of the dental arch. Objectively: upper canines have protrusion out of the tooth arch about

½ the size of the tooth crown. Determine the kind of the anomaly and give its description.

5. Patient T. 25 years, complaints about the strong overlap of upper back teeth on the left side and the overlap of mandibular back teeth on the right side.

Objectively: the upper left molars overlapping the lower molars about 1/3 to the vestibular side of the dental arch and right lower molars overlapping the upper molars on the right side of the jaw could be observed.

Determine the kind of the anomaly and give its description.

### **Literature**

#### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.
2. Lecture material

#### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник



## Class 2

**Subject:** Methods of examination of the orthodontic patients. Setting of the diagnosis, treatment planning and objectives of orthodontic treatment.

**Objective:** to teach students the methods of examination of the orthodontic patients, diagnosis and preparation of orthodontic treatment plan.

### Entry knowledge control:

1. Age morphology of dentition.
2. Bite, kinds of the bite (physiological and pathological).
3. Examination of the patient in the clinic of prosthodontics.

### Control questions:

1. Clinical examination of orthodontic patients (history taking, inspection).
2. Special methods of investigation of the orthodontic patients:
  - a) study of diagnostic models;
  - b) X-rays of the teeth, jaws and TMJ;
  - c) cephalometric methods of investigation of the orthodontic patients.
3. Studies of the functional condition of the dento-facial system.
4. Diagnosis, planning and objectives of orthodontic treatment.

### Case studies.

1. The patient L. 20 years old, contacted the dental clinic with complaints on the appearance of her upper front teeth. In oral exam: the front teeth of the upper jaw are protruding labially (like a fan), pulling the upper lip. Mouth constantly yawns (half-open). The lips are closed with some difficulty. The vertical height of the lower third of the face at rest position is 73 mm, in the position of centric occlusion - 68 mm. The gap (diastema) between the front upper teeth ranges from 1 to 3 mm, lower jaw dentition has the correct size and shape, the cutting edge of the front teeth of the upper jaw has shifted to the vestibular side about 6 mm.

Suggest a plan of diagnostics. Set the preliminary diagnosis.

2. Patient P. 25 years old, complains of the wrong relation of his jaws (lower jaw is larger than the upper, lower teeth overlap the upper). Objectively: changes of facial configuration, lower lip protrusion. The angle of the mandible is turned intraorally. Mandibular dentition looks shifted forward as compared to the upper dentition and the lower front teeth overlap the upper.

Set the diagnosis and justify it. What additional research methods should be carried out to confirm the diagnosis?

## Literature

### Basic:

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2.Lecture material

### Additional:

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

### Class 3

**Subject:** Orthodontic devices, their characteristics. Constructions of the appliance, the indications for their application.

**Objective:** to learn the constructions of orthodontic appliances and the indications to their use in orthodontic treatment.

#### Entry knowledge control:

1. Age morphology of dentition.
2. Bite, its kinds (physiological and pathological).
3. Examination of the patient in the clinic of prosthodontics.

#### Control questions:

1. Orthodontic devices, their characteristics.
2. Mechanical action devices: types, constructions, indications for their application.
3. Devices of functional action: types, constructions, indications for their application.
4. Devices of combined action and activators: types, constructions, indications for their application.
5. Changes in the tissues of tooth and periodontium under the influence of orthodontic treatment.
6. The value /magnitude of force used in orthodontics (M. Schwartz).

#### Case studies.

1. Patient D., 22 years old, contacted the dental clinic complaining of aesthetic defect because of the gap between the front teeth of the upper jaw. Orthodontic treatment has not previously been carried out. This anomaly is met in the family (in mother). Objectively in the external examination: facial configuration is not changed. The vertical dimension of the lower third of the face is 84 mm at rest, when closing in centric is 82 mm, the vertical dimension of the middle third is 82 mm. The angle of the mandible is  $125^\circ$  on both sides. During oral examination, the mucosa of the mouth without visible pathological changes. The frenums of lips and tongue look like thin folds of mucosa. No contacts of folds with the interdental papillae are observed. The dentition of the upper and lower jaws is intact. There is a gap between central incisors of the upper jaw. Bite is neutral in sagittal plane.

Set your diagnosis. What additional research methods are indicated? What orthodontic appliances may be used for the treatment of the case?

2. The patient L., 25 years old, complained of lack of aesthetics because of the presence of gaps between the front teeth of the upper jaw. Orthodontic treatment was not performed before. The external examination reveals: nasolabial folds are flattened, the upper lip pulled out, the upper front teeth are protruding from the margin of the lip and overlapping the lower teeth, the lower lip sinks. The height of the lower section of the face at physiological rest is 80 mm, when closing in centric - 78 mm, the height of the middle section of the face - 77 mm. The angle of the lower jaw on the left and the right is  $123^\circ$ . In oral examination: the mucous membrane of gums and cheeks unchanged, the dental arches of both jaws intact. The upper front teeth are of normal size, without pathologic mobility. Upper dental arch has the shape of a semi-ellipse, lower arch- a shape of parabola. There are tremas and diastema between the front upper teeth. When closing in centric the mesial-buccal cusp of maxillary 1<sup>st</sup> molar is located between the second premolar and the mesial-buccal cusp of the lower first molar.

Sagittal gap between the tooth arches is 5.5 mm. Set and justify the diagnosis. Which orthodontic devices may be used for the treatment?

3. Patient N. 27 years old, complained of an aesthetic defect of unexpressed (small) chin. Dental history reveals a bad habit of sucking the lip. Orthodontic treatment was performed at the age of 10-12 years, but it was unsuccessful.

The external examination reveals pronounced (significant) chin fold. Chin is located in the distal position. The height of the lower third of the face at rest - 76 mm, when closing in centric - 74 mm, the height of the middle third of the face - 74 mm. In oral exam: mucous membrane is without pathological changes. Dental arches of both jaws are intact. Sagittal gap is about 4.5 mm. The relation of the maxillary and mandibular first molars is Class II by Angle. The teeth show no pathologic mobility. There is overcrowding of the front teeth of the lower jaw. Set your diagnosis. Which orthodontic devices may be used for the treatment?

### **Literature**

#### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

#### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## Class 4

**Subject:** The principles and features of pathogenetic treatment of dentoalveolar anomalies in the formed bite. The use of surgical, physical and physicochemical pharmacological methods in complex treatment of dentoalveolar anomalies.

**Objective:** to study the principles and features of pathogenetic treatment of the dentoalveolar anomalies in formed bite, to teach the students the use of surgical, physical and physicochemical methods in complex treatment of dentoalveolar anomalies.

### Entry knowledge control:

1. Methods of examination of the orthodontic patient.
2. The diagnosis and its grounds.
3. Types of malocclusion and their characteristics.

### Control questions:

1. Features of the treatment of dentoalveolar anomalies in the formed bite.
2. Methods of treatment of dentoalveolar anomalies (surgical, physical, physical and pharmacological) in the formed bite.
3. An integrated approach to the treatment of dentoalveolar anomalies in the formed bite as a way to optimize orthodontic treatment of an adult.
4. Relapses in orthodontic treatment of dental anomalies in formed bite.

### Case studies.

1. The patient, 16 years old, complains of the position of the left upper canine, which is standing out strongly to the front. Objectively: tooth 23 is in supraocclusion. Orthognathic bite. The tooth arches are intact. Set your diagnosis and suggest the plan of the orthodontic treatment.
2. The patient, 13 years old, complains of a gap between upper incisors. Objectively: a significant diastema (distance of 6 mm between teeth 11 and 21). Orthognathic bite. The tooth arches are intact. Set your diagnosis and suggest the plan of orthodontic treatment.
3. Patient 20 years old, complained of the presence of heavily tapered upper jaw. Objectively: there is a strong narrowing in the back portions of the maxilla, the lower back teeth overlap the upper ones when the patient is biting together. In anterior teeth the maxillary teeth are overlapping the mandibular ones. The teeth of both arches are intact. Set your diagnosis and suggest the plan of orthodontic treatment.

## Literature

**Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

**Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## Class 5

**Subject:** Features of the orthodontic treatment of patients with periodontal diseases, abnormalities of the dental system in permanent dentition.

**Objective:** to study the features of the orthodontic treatment of patients with periodontal diseases, abnormalities of the dental system in permanent dentition.

### Entry knowledge control:

1. The periodontium, its structure
2. Functional stamina of periodontium
3. Odontoparodontogram

### Control questions

1. Abnormalities of occlusion(bite) as an etiological factor of periodontal diseases
2. Indications for the orthodontic treatment of patients with periodontal diseases
3. Main features of the orthodontic treatment of adults with periodontal diseases

### Case studies:

1. Patient, 40 years old, complains of pathologic mobility of mandibular and maxillary incisors.

Dental formula:

87654321|12345678

87654321|12345678

Deep overbite. All teeth are intact. Pathologic mobility of teeth 12,11,21,22 of 1st degree. X-rays show alveolar bone loss around the incisors about  $\frac{1}{4}$  of root length. Suggest a treatment plan.

2. A 48-year-old female complains of a “fan-shaped” divergence of the upper front teeth.

Objectively: Pathologic tooth mobility of 1st degree of the teeth 13,12,11,21,22,23, the teeth are protruded. The gaps between teeth, diastema are observed. Dental formula: lower dentition is intact, in the maxilla all molars and premolars are missing.

Set a diagnosis and complete a treatment plan.

## Literature

### Basic:

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

**Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник



## Class 6

**Subject:** Prosthodontic treatment in adult patients with anomalies of occlusion.

**Objective:** to study the methods of prosthodontic treatment in adult patients with anomalies of occlusion

### Entry knowledge control:

1. Anatomy and morphology of dentoalveolar system
2. Bite, its varieties.
3. Pathogenesis of dentoalveolar abnormalities
4. Examination of patient in clinic of prosthodontics

### Control questions:

1. Indications for the prosthetic method of treatment of dentition abnormalities in adult patients
2. Prosthodontic treatment of the adult patients with anomalies of tooth position of single teeth.
3. Prosthodontic treatment in patients with vertical bite anomalies (deep bite and open bite)
4. Prosthodontic treatment of patients with sagittal anomalies of occlusion (maxillary prognathism/underbite, anterocclusion/mandibular prognathism)
5. Prosthodontic treatment in patients with transversal anomalies of occlusion (cross-bite)

### Case studies.

1. Patient, 25 years old, complained of esthetic defect. External examination without any specific features. Objectively: oral mucosa has normal colour, dentition is intact, no pathologic tooth mobility. There is a palatal position of the upper lateral incisors, because of space deficit for teeth 12,22 – the gaps in the dental arch are less than  $\frac{1}{2}$  of the width of the tooth crown. Key of occlusion is according to class I by Angle. Set a diagnosis and suggest a treatment plan.

2. Male patient, 27 years old, complains of aesthetic defect, traumatised mucosa around upper incisors 12,11,21,22, pain in TMJ. External exam: deep nasolabial and submental folds, the upper front teeth are placed over the lower lip. The height of the lower portion of the face is 66 mm in rest position, VDO (vertical dimension of occlusion) – 60 mm, right and left gonial angles are 125 degrees. Intraoral exam shows intact teeth of the upper dental arch, in mandible 35,36,46 are missing. Vertical overlap of upper incisors is  $\frac{2}{3}$  of the crown height. Mucosa around teeth 12,21 is hyperemic, edematous, bleeding during probing. Key of

occlusion is II-nd class by Angle. Set a diagnosis and suggest a treatment plan.

### **Literature**

#### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

#### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## Class 7

**Subject:** The principles of complex treatment of gunshot and non-gunshot fractures of the upper jaw (maxilla fracture).

**Objective:** to teach students the methods of the prosthetic treatment of gunshot and non- gunshot fractures of the upper jaw. To characterize and determine the indications for the use of splinting, repositioning and forming apparatuses. To study the clinical and laboratory stages of these apparatuses making.

### Entry knowledge control:

1. Muscular system of the maxillofacial region
2. Blood supply and innervation features of the maxillofacial region

### Control questions:

1. Classification of the gunshot and non-gunshot fractures of the upper jaw.
2. Clinics and diagnostics of gunshot and non-gunshot fractures of the upper jaw
3. First aid for the gunshot and non-gunshot fractures of the jaws, the transportation of patients
4. Prosthetic methods of treatment for the fractures of the upper jaw
5. Characteristics and clinical and laboratory stages of manufacturing splints and prostheses used for fractures of the upper jaw (Port, Guning, Oksman)

### Case studies:

1. A 72-year-old female patient. The fracture of the edentulous upper jaw. All lower teeth are missing. Sub-basal fracture is revealed on the radiograph. Suggest the prosthetic treatment method.
2. A 25-year-old female patient is taken to the dental clinic with a sub-orbital fracture of the upper jaw on the right side. The tooth row (dentition) of the upper jaw is intact, there are missing teeth 36,46 in the lower dentition. Explain possible variants of the prosthetic treatment.
3. A 50-year-old male patient was brought to the clinic with the fracture of the upper jaw Le Fort I. The jaw has partial defects of dentition. Clinical crowns of the teeth are short. Justify the plan of the prosthetic treatment.
4. A 65-year-old male patient has a simultaneous fracture of both edentulous jaws: maxillary fracture Le Fort III and mandibular body fracture in the region of missing tooth 36. Suggest a plan of the prosthetic treatment.
5. A 35-year-old female patient is brought to the clinic with not clarified fracture of the upper jaw. The upper jaw has partial defects of dentition: missing

teeth 16,15,25. In mandible tooth 36 is missing. Suggest and justify the plan of the prosthetic treatment.

6. A 25-year-old male patient is taken to the city clinical hospital with a gunshot wound in the right upper jaw. There are complaints of the upper jaw pain which increases during closing the teeth and chewing; inability to bite off with front teeth; the change of the face form. The patient has foreign body sensation in the throat, difficulty in nasal breathing. Objectively: the inlet in the right zygomatic arch, the outlet in the nose area. The mobility of all dentition is revealed, the alveolar bone process could be displaced downwards, the maxillary sinus is involved. The teeth of the upper tooth row are intact, the lower jaw has missing teeth 36,46. Set a diagnose. Explain possible variants of the prosthetic treatment.

7. A 35-year-old male patient is taken to the city clinical hospital with shrapnel(splinter) wounds in the maxillofacial region and the upper jaw. There are complaints of sharp pain, the damage to the soft tissues of the face. Objectively: the displacement of bone fragments is determined by change of the face outlines, changes in the dental arches, inability to bite the teeth together, and fragments mobility. The upper jaw has partial defects of dentition, teeth 16,15,14,11, 25,26,27,28 are missing, in the lower jaw tooth 46 is missing. Set and justify the plan of the prosthetic treatment.

## Literature

### Basic:

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

### Additional:

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## Class 8

**Subject:** The principles of complex treatment of gunshot and non-gunshot fractures of the lower jaw (mandibular fracture).

**Objective:** to teach students the methods of the prosthetic treatment of gunshot and non-gunshot fractures of the lower jaw. To characterize and determine the indications for the use of splinting, repositioning and forming apparatuses. To investigate the clinical and laboratory stages of the manufacturing of apparatus which are used in the treatment of the lower jaw fractures.

### Entry knowledge control:

1. Muscular system of the maxillofacial region
2. Blood supply and innervation features of the maxillofacial region
3. Anatomy of the temporomandibular joint

### Control questions:

1. Classification of the gunshot and non-gunshot fractures of the mandible.
2. Clinics and diagnostics of the gunshot and non-gunshot fractures of the lower jaw
3. First aid for the gunshot and non-gunshot fractures of the lower jaw, the transportation of patients
4. Prosthetic methods of treatment of fractures of mandible
5. Characteristics, clinical and laboratory stages of manufacturing splints and prostheses used for fractures of the lower jaw (Weber, Vankevich, Tigershtedt, Stepanov)

### Clinical cases:

1. A 60-year-old male patient has a fracture of the edentulous mandible in the region of missing tooth 36. Teeth 15, 26, 27 in the upper jaw are missing and the lower jaw is completely edentulous. Specify the prosthetic treatment method and choose the most effective orthosis (orthopedic apparatus).
2. A 43-year-old female patient has a fracture of the mandible in the zone of mental foramen on the left side. The upper jaw has full dental arch, teeth 38, 37, 36, 46, 47, 48 are missing in the lower jaw. Specify the prosthetic treatment method.
3. A 35-year-old female patient has a fracture of the angle of the mandible on the right side. The fracture is without displacement. Choose the prosthetic treatment method.
4. A 70-year-old female patient has a fracture of the edentulous lower jaw in the region of missing 45. There are teeth 13, 14 in the upper jaw (the other

maxillary teeth are missing). Suggest the most suitable prosthetic apparatus. Name the clinical and laboratory stages of its making.

5. A 65-year-old male patient has simultaneous fractures of the upper (Le Fort II) and lower (the region of the coronoid process) edentulous jaws. Suggest a plan of the prosthetic treatment.

### **Literature**

#### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

#### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## Class 9

**Subject:** Methods of Prosthetic treatment of false joints, improperly healed jaw fractures, bone defects, microstomia.

**Objective:** to teach the students prosthetic methods of the treatment of the patients with, to study the clinical and laboratory stages of making dentures for pathobiology treatment .

### Entry knowledge control:

1. Possible complications in jaw fracture. Ways of prevention and abolition.
2. Possible causes of bone defects, improperly healed jaw fractures, false joints, microstomia.

### Control Questions:

1. Etiology, clinic and diagnostics of mandibular false joints .
2. Indications and prosthetic treatment modalities for mandibular false joints. Apparatus by Gavrilov, Kurlandsky, Oksman, Vanshtein.
3. Etiology, clinic and diagnostics of jaw malunion(improperly healed jaw fractures).
4. Clinical forms of improperly healed jaw fractures by Kurlandsky.
5. Indications and prosthetic treatment for improperly healed jaw fractures.
6. Classification of mandibular bone defects by Kurlandsky.
7. Methods of prosthetic treatment in case of mandibular bone defects: interstitial implants, dental splints, extra –oral devices for compressive osteosynthesis.
8. Prosthetic Treatment of patients with microstomia. Denture constructions.

### Case studies

1. Male patient 44 years old has complaints on microstoma, difficulty in mastication, cosmetic defect in the area of the corners of the mouth. Gunshot injury to the maxillofacial area in anamnesis.

Objectively: microstoma with opening to 3 cm, muscle cicatricial contraction of the corners of the mouth. In maxilla: teeth 18, 17, 16, 15, 14, 13 missing, in mandible: 48, 47, 46, 45, 44, 43, 42, 36 missing.

Set the diagnosis; choose the optimal variant of prosthetic treatment.

2. Female patient, 29 years old, with complaints on microstoma, difficulty in mastication. Sclerodermia is in anamnesis. Objectively: scleroderma area of contracture of skin in the area of the left cheek, microstoma with opening to 2 cm. Dentition is intact on the maxilla, mandibular teeth 35,44 are missing.

Set the diagnosis; choose the optimal variant of prosthetic treatment.

3. Male patient 27 years old, with complaints on difficulty to open the mouth. Long –lasting intermaxillary distraction of lower jaw bone fragments after fracture in anamnesis. Objectively: opening of the mouth is limited to 4 cm. Dentition is intact on the maxilla, mandibular teeth 36,35,44,46 are missing. Hyperemic and swollen mucosa of gingival papillae on upper and lower jaw is observed.

Set the diagnosis; choose the optimal variant of prosthetic treatment.

### **Literature**

#### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

#### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник



## Class 10

**Subject :** Prosthetic treatment in cases of acquired and congenital defects of the palate.

**Objective:** To study the etiology, pathogenesis, clinical features, differential diagnostics and classification of congenital and acquired defects of the palate. To complete knowledge of clinical and laboratory stages of obturators making and palate protector plates in congenital and acquired defects of the palate; rules of deontology during taking patients with such pathology.

### Entry knowledge control:

1. Development of dentoalveolar system
2. Clinics of gunshot and non-gunshot fractures of maxillary bone.
3. Clinics of specific inflammatory processes in the oral cavity.
4. Complications of the maxillary fractures and specific inflammatory processes in the oral cavity.

### Control Questions:

1. Classification of acquired defects of the palate by Kurlandsky.
2. Construction elements and methods of fixation of dentures used in cases of the acquired defects of the palate. Clinical and laboratory stages of making obturator denture in cases of the acquired defects of the palate.
3. Etiology, pathogenesis, clinics, differential diagnostics of congenital defects of hard and soft palate.
4. Role of prosthodontics work in complex treatment of defects of hard and soft palate. Treatment modalities of congenital defects of hard palate.
5. Obturator and obturating dentures, types and characteristics (Obturator of Surens, Kez, Iljina –Markosan, Kurlandsky, Schreder, Pomerantseva-Urbanskaya, Pergament).
6. Clinical and laboratory stages of making floating obturator by Chasovskaya. Clinical and laboratory stages of making palate protector during palate reconstructive surgery.

### Case studies

1. Patient 45 years old suffers from syphilis. Defect of hard and soft palate is detected. Diagnose the kind of the defect of palate. What are the possibilities of prosthetic treatment.
2. Patient 29 years old, with gunshot injury in the area of the hard palate, requires an

obturator. Diagnose: classify the kind of the defect of palate, explain the stages of the obturator making.

3. Child 2 years old. Non-union of hard palate, fenestration to nasal cavity, difficulty to ingest food, dysphagia, speech difficulty are revealed. Describe the stages of the denture-apparatus making.

## **Literature**

### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## **Class 11**

**Subject:** Dental Implants. Characteristics. Indications and Contraindications. Main types.

**Objective:** To study the techniques of examination of the patients for implantology, to teach to set indications and contraindications for dental implantation, to get the students acquainted with the types of dental implants.

### **Entry knowledge control**

1. Anatomy of maxilla and mandible in age-dependent aspect and after teeth extractions.
2. Examination of dental patients.
3. X-Ray techniques of examination of the dentition.
4. Dental alloys and requirements to them.

### **Control Questions:**

1. Theoretical grounds of Implantation. Osteogenesis types in dental implantation.
2. Patient examination in case of replacing missing teeth using implants.
3. Indications and contraindications to dental implants use.
4. Requirements to materials, used for production of implants.
5. Implant characteristics (Classification, Types of implants)

## **Literature**

### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.
2. Lecture material

### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## Class 12

**Subject:** Features of prosthetic work with implants in fixed and removable prosthodontics.

**Objective:** To study indications and contraindications for making endosseous implant-retained dentures (fixed, removable), the features of design of endosseous implant-retained dentures, clinical and laboratory stages of making these constructions.

### Entry knowledge control:

1. Anatomy of maxilla and mandible in age-dependent aspect and after teeth extractions.
2. Examination of dental patients.
3. X-Ray techniques of examination of the dentition.
4. Dental alloys and requirements to them.

### Control Questions:

1. Features of design of endosseous implant-retained dentures.
2. Clinical and laboratory stages of making endosseous implant-retained fixed dentures.
3. Clinical and laboratory stages of making screw-retained dentures on dental implants.
4. Clinical and laboratory stages of making endosseous implant-retained removable dentures.
5. Errors and complications of dental implantation.

## Literature

### Basic:

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.
2. Lecture material

### Additional:

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

4. Fixed dentures. Algorithm of producing. («Клинико-лабораторные этапы изготовления несъемных зубных протезов») / С. А. Наумович [и др.]. – 3-е изд. – Мн. : БГМУ, 2018. – 30 с.

## **Class 13**

**Subject:** Prosthodontic treatment after jaw resection

**Objective of the Class:** To teach students grounds of prosthetic treatment in cases of jaw resections, to give characteristics and define indications for use of reconstructive dentures in different stages of surgical interventions, to learn clinic and laboratory procedures of denture making.

### **Entry knowledge control**

1. Anatomy of maxillofacial area.
2. Characteristic of maxillofacial area blood supply and innervation.

### **Control questions**

1. Functional deficits after jaw resections.
2. Immediate, early, postponed prosthetic treatment after jaw resection, their features.
3. Method of making of immediate prosthesis in case of mandibular resection (mental part, half of the mandible, all- mandibular resection).
4. Methods of immediate prosthetic treatment in case of maxilla resection (by Oksman, by Kiselev-Pinskiy).
5. Structural elements for fixation of post-resection maxillary dentures (cast clasps, multi-unit clasps, telescopic system, attachments ).
6. Prosthetic treatment of patients after maxilla and mandibular resection in long-term period.

### **Case studies.**

1. Patient with diagnosed tumor in the mental (chin) area of the mandible is prepared for the operation in the dental clinic. Specify the possible prosthetic actions

2. Edentulous patient has problems with fixation of post-resection denture on the intact side of the mandible. Denture was made after half resection of edentulous mandible. Explain the features of maxillo-facial prosthetic treatment in this case.

3. Patient with total edentia has undergone surgical intervention – half resection of the mandible. The reason of surgical intervention was tumor. Substantiate the plan of the maxillofacial prosthetic treatment.

4. Patient was admitted to the dental clinic with tumor in the right half of the

mandible.

Tooth formula:

7654321/1234567

0000000/1230067

Substantiate the plan of the treatment and explain stages of post-resection denture making.

### **Literature**

#### **Basic:**

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

#### **Additional:**

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

## Class 14

**Subject:** Prosthodontic treatment of patients with face defects and injuries. Face mask.

**Objective of the class:** to teach students methods of prosthetic treatment of the patients with face defects and injuries, making a face mask.

### Entry knowledge control

1. Anatomy of maxillofacial area
2. Characteristic of maxillofacial area blood supply and innervation.
3. Aesthetics of maxillofacial area

### Control questions

1. Aetiology of maxillofacial area defects.
2. Objectives of prosthetic treatment of patients with face defects and injuries.
3. Defects of maxilla and palate. Prosthodontic measures in the reconstructive treatment.
4. Defects of mandible. Prosthodontic measures in the reconstructive treatment.
5. Defects of nose, cochlea, orbit. Nose prosthesis.
6. Defects and deformations of lips and mental (chin) area. prosthetic treatment. Forming apparatus.
7. Face mask. Stages of making.

### Case studies

1. Patient 46 years old was admitted to the hospital. Diagnosis: sarcoma of maxilla. Partial resection of maxilla is being planned. Determine the plan of the prosthetic treatment.

2. Patient 57 years old requested medical help in the dental clinic. He has significant scar changes of the face, total absence of the nose and the right ear. Determine the plan of the prosthetic treatment.

3. Patient 43 years old was admitted to the department of maxillofacial surgery. Diagnosis: ameloblastoma in the left area of the mandible. Resection of the mandible is being planned followed by the bone plasty. Determine the plan of the prosthetic treatment.

## 4. Literature

### 5. Basic:

6. 1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.



7. 2. Lecture material

**8. Additional:**

9. 3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.

Ортопедическая стоматология : учебник

## Class 15

**Subject** Splints and splint-dentures making. Demonstration of Vankevich`s and Tigershtedt`s splints making.

**Objective of the class:** To teach students the features of prosthodontic treatment of patients with traumatic injuries of maxillofacial area, to give characteristics and to define indications for the use of splinting, repositioning and forming apparatus, to learn the clinical and laboratory procedures of their making.

### Entry knowledge control

1. Muscular system of maxillofacial area.
2. Characteristic of maxillofacial area blood supply and innervation.

### Control questions

1. Apparatuses in maxillofacial prosthodontics. Classification. Indications.
2. Classification of splinting, controlling and forming apparatuses.
3. Stages of making of Veber`s splint and Port`s splint.
4. Vankevich`s splint. Indications. Stages of making.
5. Tigershtedt`s splint. Indications. Stages of making.
6. Characteristics and clinical and laboratory procedures of making the splints and prostheses used in the case of maxilla fracture (Gunning`s, Oksman`s splints).

### Case studies.

1. Patient is 72 years old. Fracture of edentulous maxilla. Subbasal fracture was revealed during X-ray examination. Define the methods of prosthetic treatment.
2. Patient 72 years old was delivered to the dental clinic with suborbital fracture of the right maxilla. Explain possible variants of the prosthetic treatment
3. Patient 50 years old was admitted to the dental clinic with fracture of maxilla Le Fort I. Partial defects of maxillary dental arch and small size of the teeth clinical crowns were revealed during examination. Substantiate the plan of the prosthetic treatment
4. Patient 55 years old. Simultaneous fracture of edentulous maxilla and mandible. Suggest a plan of the prosthetic treatment.
5. Patient 20 years old was admitted to the dental clinic with unclarified fracture of maxilla. Partial defects of maxilla were revealed during examination. Substantiate the plan of the prosthetic treatment.  
Patient 38 years old was admitted to the dental clinic. Diagnosis: fracture of mandibular body with displacement. Partial defects of mandibular dentition. Suggest and substantiate the plan of the prosthetic treatment.

## Literature

### Basic:

1. Prosthetic Dentistry / V.P. Nespriadko [et al.]. – Житомир : Полісся, 2015. – 260 с.

2. Lecture material

### Additional:

3. Nallaswamy D. V. Textbook of prosthodontics.- New Delhi, 2011.- 844 p.  
Ортопедическая стоматология : учебник

6.

## Class 16.

### Subject of class: Medical History protection. Credit.

**Objective of class:** teach students the correct way of writing , registering and managing medical history, and also the correct way of keeping medical documentation in a clinic of orthopaedic dentistry.

### Entry Knowledge Control

1. Methods of patient examination.
2. Methods of prosthesis of patients with different pathologies of the dentoalveolar system.
3. Materials used to make dental prosthesis in a clinic of orthopaedic dentistry.

### Control Questions

1. Scientific and practical meaning of medical history.
2. Oral hygiene grade of mucous membrane of mouth and index grade of periodontal tissue. Odontoparodontogramma.
3. Research methods used during diagnostics of disease in orthopaedic patients.
4. Etiology, clinical picture, diagnosis, features of orthopaedic treatment for partial secondary adentia.
5. Etiology, clinical picture, diagnosis, features of orthopaedic treatment for full secondary adentia.
6. Etiology, clinical picture, diagnosis, features of orthopaedic treatment of inflammatory disease of oral mucosa.