Ministry of Science, Higher Education, and Innovation of the Kyrgyz Republic
Educational Institution
Royal Metropolitan University
Department of Dental Disciplines

"APPROVED"
Vice Rector for Academic and
and Administrative Affairs
N.A. Urazalieva
"6" Октября 2025

TEACHING AND METHODOLOGICAL COMPLEX OF THE DISCIPLINE "PROPAEDUTICS OF ORTHOPEDIC DENTISTRY"

of the main educational program
in the specialty **560004 "Dentistry" (for foreign citizens)**

Graduate qualification: Specialist (Doctor)

Bishkek 2025

Ministry of Science, Higher Education, and Innovation of the Kyrgyz Republic
Educational Institution
"Royal Metropolitan University"
Department of Dental Disciplines

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"6" _____ 2025

WORKING PROGRAM OF THE DISCIPLINE "PROPAEDUTICS OF ORTHOPEDIC DENTISTRY"

of the main educational program
in the specialty 560004 **"Dentistry" (for international students)**

Graduate Qualification: Specialist (Doctor)

Full-time program

Course	2
Semester	3
Exam	3
Total credits in the curriculum	3
Total hours in the curriculum	90

Program developer:
Bayshukurov E. E.
Bektasheva A. K.

Reviewed and approved at a meeting of the Department of Dental disciplines
Protocol No. 1 dated September 6, 2025
Head of the Department, PhD A. K. Bektasheva

_____________ (signature)

Bishkek 2025

The work program for the course "Propaedeutics of Orthopedic Dentistry" has been developed in accordance with the requirements of the State Educational Standard for Higher Professional Education for specialty 560004 "Dentistry"

The work program s has been approved by the Educational and Methodological Department of the RMU
Head of the Educational and Methodological Department
Kurdubaeva N.K. ____________
(Full Name) (signature)
"6" сентябрь 2025

The work program has been approved by the head of the main educational program for specialty 560004 "Dentistry"
Head of the Main Educational Program Soporova A.Z.
____
(Full Name) (Signature)
"06" 09 2025

External review provided on
md, professor Schoyakhmetov D.B
____
"16" 08 2025 (review attached)

The work program has been approved by a specialist from the RMU Quality and Monitoring Department
Q&M Department Mambesaliev U.Z ____________
(Full Name) (Signature)

"06" 09 2025

РЕЦЕНЗИЯ

на рабочую программу дисциплины

«Пропедевтика ортопедической стоматологии»

по специальности 560004 «Стоматология»

(для иностранных граждан)

(ОУ «Роэль Метрополитен университет»)

Рабочая программа дисциплины «Пропедевтика ортопедической стоматологии» разработана в соответствии с требованиями Государственного образовательного стандарта высшего профессионального образования по специальности «Стоматология» и соответствует структуре основной образовательной программы подготовки врача-стоматолога.

Цели и задачи дисциплины сформулированы последовательно и отражают её пропедевтическую направленность. Программа ориентирована на подготовку врача-стоматолога, способного оказывать амбулаторную ортопедическую помощь, проводить диагностику стоматологических заболеваний, обосновывать показания к лечению, планировать ортопедическое вмешательство, предупреждать и устранять возможные осложнения. Особое внимание уделено формированию теоретических знаний и практических умений, необходимых для дальнейшего изучения клинических дисциплин. Дисциплина обоснованно отнесена к вариативной части профессионального цикла. Чётко определены требования к предварительной подготовке обучающихся, включающие фундаментальные медико-биологические дисциплины, а также обозначен широкий спектр последующих клинических дисциплин, что обеспечивает междисциплинарную преемственность и логичную интеграцию курса в образовательный процесс.

Компетенции освоения дисциплины (ПК-1, ПК-2, ПК-5, ПК-8 и др.) представлены в полном объёме и детализированы по уровням «знать», «уметь» и «владеть».

Структура и содержание дисциплины логично выстроены и охватывают ключевые разделы пропедевтики ортопедической стоматологии: биомеханику жевательной системы, подготовку полости рта к протезированию, одиночные и множественные дефекты зубных рядов, съёмное и несъёмное протезирование, профилактику осложнений и уход за ортопедическими конструкциями. В целом рабочая программа дисциплины «Пропедевтика ортопедической стоматологии» является методически обоснованной и может быть рекомендована к утверждению и внедрению в учебный процесс стоматологического факультета.

д.м.н., профессор кафедры
хирургической стоматологии
и челюстно-лицевой хирургии
КГМА им. И.К. Ахунбаева **Д.Б. Шаяхметов**

Общий отдел

Подпись заверяю

16.05.2025

зав. общим отделом

Content

1. The working program of the academic discipline

1.1. Explanatory note

The mission of the OU RMU is The mission of Royal Metropolitan University is to improve the health and quality of life of the population through the high-quality training of medical personnel capable of intercultural interaction, based on the integration of advanced scientific knowledge, innovation, and high standards of practice in an environment of unity of education, science, and clinical activity.

Abstract of the academic discipline"Propaedeutics of Orthopedic Dentistry" is a course aimed at developing students' basic theoretical knowledge and practical skills necessary for subsequent mastery of orthopedic dentistry. This course examines the fundamental structure and function of the dental system, the principles of occlusion and articulation, and the interactions between the elements of the maxillofacial region in health and disease.
This course covers clinical examination methods for patients, including history taking, examination, palpation, functional diagnostics, and occlusal analysis. Particular attention is paid to the morphology of teeth, dental arches, and occlusion, as well as the fundamentals of diagnosing defects of hard dental tissues and dental arches. This course develops students' basic skills in preparing hard dental tissues, taking impressions, registering bites, and working with diagnostic models. It also introduces students to basic orthopedic materials, instruments, and equipment. The course also covers the principles of asepsis and antisepsis, as well as the basics of organizing the orthopedic dentist's workstation.
"Propaedeutics of Orthopedic Dentistry" is an important stage in the training of a dentist, laying the foundation for clinical thinking, mastering modern methods of orthopedic treatment, and developing professional competencies in the field of restoring the function and aesthetics of the dental system.

The purpose and objectives of the discipline

The purpose of discipline The main goal of studying the discipline "Propaedeutics of Orthopedic Dentistry" is to develop in students the basic theoretical knowledge and primary practical skills necessary for mastering the clinical sections of orthopedic dentistry.

During the training, students acquire knowledge about: the morphology and functional anatomy of the dental system, the physiology of the masticatory apparatus; the basic patterns of occlusion and articulation, as well as their role in the functioning of the dental system; methods of clinical examination of dental

patients (collection of anamnesis, examination, palpation, functional diagnostics); the basics of diagnosing defects of hard tissues of teeth and dentition; the principles of conducting a physical and primary instrumental examination in orthopedic dentistry; the rules for taking impressions, registering bite and analyzing diagnostic models; basic orthopedic materials, instruments and equipment; the principles of asepsis and antisepsis in orthopedic dentistry. This course is designed to develop students' skills in: conducting an initial examination of patients with dental defects and dentition; analyzing clinical data and formulating preliminary diagnostic conclusions; performing basic manual skills (preparation, taking impressions, registering bite); working with diagnostic models and analyzing them. Particular attention is paid to developing clinical thinking, understanding the physiological and initial pathological processes in the dentoalveolar system, and forming the basis for subsequent orthopedic treatment planning. Mastering this course ensures the development of universal and professional competencies necessary for further education and subsequent professional work as a dentist.

Objectives of the discipline The main objectives of the discipline "Propaedeutics of Orthopedic Dentistry" are: ¬ formation of a basic and systematic volume of fundamental knowledge in the field of orthopedic dentistry, necessary for subsequent mastering of clinical disciplines and formation of professional competencies of a dentist; ¬ formation of the initial foundations of clinical thinking, the ability to navigate the structure, function and initial pathological changes of the dentoalveolar system; ¬ mastering the basic methods of examination of dental patients, including collecting anamnesis, clinical examination and primary functional diagnostics; ¬ acquisition of primary practical skills in performing dental manipulations in orthopedic practice (preparation of hard dental tissues, taking impressions, bite registration, working with diagnostic models); ¬ study and mastering basic orthopedic materials, instruments, equipment and principles of their application; ¬ formation of skills in analyzing clinical data and making a preliminary diagnosis of defects of teeth and dentition; ¬ Introduction to the fundamentals of selecting orthopedic structures and materials, taking into account the clinical situation; ¬ Development of an understanding of modern technologies in orthopedic dentistry, including digital methods and CAD/CAM systems; ¬ Development of skills in observing the principles of asepsis, antisepsis, medical ethics, and deontology in dental practice; ¬ Development of readiness for further education, mastery of clinical disciplines, and

professional activity. The discipline "Propaedeutics of Orthopedic Dentistry" is part of the basic part of the professional cycle of the educational program in the specialty "Dentistry" (code 560004) and is a preparatory stage for the study of specialized clinical disciplines.

The place of the discipline in the structure of the OOP (prerequisites, postrequisites) The course "Propaedeutics of Orthopedic Dentistry" is studied by students majoring in Dentistry and is a mandatory part of the educational program in accordance with the requirements of the State Educational Standard of Higher Professional Education. It is a basic preparatory course, providing a transition from fundamental medical knowledge to the clinical aspects of orthopedic dentistry. The course builds on knowledge gained through the study of the following prerequisites: normal and pathological anatomy, normal and pathological physiology, histology, biochemistry, microbiology, pharmacology, propaedeutics of dental diseases, and the fundamentals of therapeutic and surgical dentistry. This course develops the basic knowledge and practical skills necessary for further mastery of the postrequisites: orthopedic dentistry, orthodontics, implantology, maxillofacial surgery, gerontostomatology, and clinical dentistry. The main purpose of this course is to develop students' basic clinical thinking, skills in examining dental patients, analyzing anamnesis data and clinical examination results, and laying the foundation for establishing a preliminary diagnosis and planning orthopedic treatment. The course program includes the following main sections: I. Introduction to orthopedic dentistry: anatomical and physiological features of the dentoalveolar system, fundamentals of occlusion and articulation, organization of the orthopedic surgeon's workplace. II. Examination and diagnostic methods: clinical and functional research methods, analysis of diagnostic models, bite registration. III. Fundamentals of practical skills: preparation of hard dental tissues, taking impressions, working with materials and instruments, fundamentals of fabricating orthopedic structures. The overall workload of this course is, as a rule, significantly less compared to clinical orthopedic dentistry (specified in the curriculum). The training includes lectures and practical classes. Ongoing assessment includes testing, quizzes, and practical skills assessments (taking impressions, registering bites, and working with diagnostic models). The final assessment is a credit or exam in accordance with the curriculum.

Competencies of students formed as a result of mastering the discipline, planned results of mastering the academic discipline.

- Graduate in the specialtyDentistrywith the assignment of a specialist qualification"Dentist"in accordance with the goals of the OOP and the objectives of professional activity,must have the following professional competencies:

Code	Contents of competence
GC-1	able and ready to analyze socially significant problems and processes, to use methods of natural sciences, mathematics and humanities in various types of professional and social activities;
IC-1	IC-1 - is capable and ready to work with computer equipment and software for system and application purposes to solve professional problems;
SPC-1	able and willing to implement ethical, deontological and bioethical principles in professional activities;
PC-2	able and willing to conduct and interpret interviews, physical examinations, clinical examinations, results of modern laboratory and instrumental studies, morphological analysis of biopsy, surgical and autopsy material of patients, and prepare medical records for outpatient and inpatient patients of children and adults;
PC-4	able and willing to apply aseptic and antiseptic methods, use medical instruments, carry out sanitization of treatment and diagnostic rooms, children's healthcare organizations, and possess the skills to care for sick children and adults;
PC-6	able and ready to work with medical and technical equipment used in work with patients, computer equipment, receive information from various sources, apply the capabilities of modern information technologies to solve professional problems;
PC-15	able and willing to collect and record a complete patient medical history, including oral health data;
PC-16	able and ready to make a diagnosis based on the results of clinical laboratory studies of biological materials and taking into account the laws of the course of pathology in organs, systems and the body as a whole;
PC-19	able and ready to diagnose typical dental diseases of the hard and soft tissues of the oral cavity, dentofacial anomalies in patients of all ages;
PC-20	able and ready to analyze and interpret the results of modern diagnostic technologies in children, adolescents and adults for successful treatment and preventive activities. - treatment activities;
APC-1	the ability to use modern digital technologies in the diagnosis and treatment of dental diseases.

LO1: Analyze basic and professionally relevant issues in orthopedic dentistry using fundamental scientific knowledge.

LO2: Use computer technologies and basic software to solve educational and primary professional tasks in orthopedic dentistry.

LO3: Apply the principles of bioethics, deontology, and medical ethics when interacting with patients and medical personnel.

LO4: Effectively communicate professionally with patients and colleagues, adhere to medical communication standards, and work in a team. LO5: Conduct an initial clinical examination of patients, collect anamnesis, assess the dental status, and prepare medical documentation. LO6: Interpret the basic data of a clinical examination and simple instrumental research methods, identify functional disorders of the dentoalveolar system. LO7: Diagnose defects of hard tissues of teeth and dentition, and identify initial deformations of the dentoalveolar system in patients of various age groups. LO8: Justify the choice of orthopedic structures at a basic level and participate in orthopedic treatment planning under the guidance of an instructor. LO9: Apply aseptic and antiseptic methods, comply with sanitary and hygienic requirements, and ensure safety during dental procedures. LO10: Have an understanding of modern digital technologies (CAD/CAM, intraoral scanning, digital modeling) and use them at a basic level in diagnostics and orthopedic treatment planning.

After mastering this discipline, the student:**will know:**
¬ anatomical and physiological, age and individual features of the structure and functioning of the dental system;¬ principles of organizing dental care and equipping an orthopedic office;¬ basic ideas about the etiology and pathogenesis of defects in hard tissues of teeth and dentition;¬ the main clinical symptoms of dental defects, occlusion disorders and function of the temporomandibular joint;¬ classifications of defects of teeth and dentition;¬ the main types of orthopedic structures and general indications for their use.
will understand:
¬ the importance of preventing dental diseases and dispensary observation of patients; ¬ the role of sanitary and epidemiological regime in dental practice; ¬ the importance of maintaining medical records; ¬ mechanisms of formation of disorders of the dentoalveolar system and their clinical manifestations; ¬ principles of clinical diagnostics and the basics of planning orthopedic treatment.
will be able to use:
¬ methods of general and dental examination of patients;¬ basic methods of diagnosing defects of teeth and dental arches, assessing occlusion;¬ basic dental materials, instruments and equipment, as well as elements of digital technology.
will be able to carry out:

¬ collecting anamnesis, interviewing the patient and conducting an initial clinical examination;¬ identifying defects in the hard tissues of the teeth and dental arches;¬ formulating preliminary diagnostic conclusions;¬ performing basic manual skills (preparing teeth on phantoms, taking anatomical impressions, registering bite);¬ working with diagnostic models;
¬ compliance with the principles of asepsis and antisepsis;¬ preparation of medical documentation.**will be able to analyze:**
¬ data from a clinical examination of a dental patient (examination, assessment of occlusion, condition of teeth and oral mucosa) to make a preliminary diagnosis.
will be able to synthesize:
¬ results of clinical examination and simple instrumental methods for identifying pathology of the dental system and justifying further diagnostic and therapeutic measures.**will be able to evaluate:**
¬ the condition of the patient's dental system and the severity of defects in the teeth and dental arches; ¬ the quality of basic dental procedures; ¬ the correspondence of the selected examination methods and the initial stages of treatment to the clinical situation.

1.2. Recommended educational technologies

The following educational technologies are used to help students master the academic discipline "Propaedeutics of Orthopedic Dentistry," gain knowledge, and develop professional competencies:

- lecture with elements of discussion and problem solving;
- lectures - electronic presentations;
- analysis of specific situations;
- role-playing game "doctor - patient";
- lecture-visualization;
- problem lecture;
- conference session;
- training;
- debate;
- brainstorming;
- master class;
- small group method;
- classes using training equipment and simulators;
- analysis of clinical cases;
- situational tasks;
- use of computer training programs;

- attending medical conferences and consultations;
- student's research work;
- holding subject Olympiads;
- preparation of written analytical papers;
- preparation and defense of abstracts;

1.3. Scope of the discipline and types of academic work

The section data is presented in tabular form in accordance with the curriculum. It also specifies the volume of classroom instruction (lectures, seminars, practical classes, and labs) and independent student work (overall and by semester in which the course is studied), as well as the types of final assessments.

Form of study – full-time

According to the 2025 curriculum	**5 sem.**	**Total**	
		in hours	**in loans**
Total labor intensity	**90**	**90**	**3**
Classroom work	54		
Lectures	18		
Practical classes	36		
Independent work	18		
SRSP	18		
Type of final control	Credit		

1.4. Structure of the discipline

1.4.1. Thematic plan for studying the discipline (by semester) –Reflects the course structure, reveals the sequence of study of sections and topics of the program; is presented in the form of a table and provides information on the distribution of the number of hours by topics, types of classes (lectures, seminars, practical classes, laboratory work, independent work of students), the competencies developed, the educational technologies used, the methods and methods of teaching, and forms of assessment.

	Educational institution **Royal Metropolitan University**
	Quality management system **Educational and methodological complex of the discipline "Orthopedic dentistry"** **Department of Dental Disciplines of the Educational Institution "RMU"** **560004 "Dentistry"**

Subject plan for studying the discipline and competency matrix (workload is indicated in academic hours)

No.	Name sections and topics disciplines (lectures and practical classes)	Classroom classes				Total hours on classroom work	SRSP	Independent work of a student	Formed competencies	Used educational technologies, methods and techniques of teaching	Dummies	Forms of current and border control academic performance
		lectures	seminars	practical classes	laboratory work							
	3rd semester											
1	**Introduction to instruments and materials for orthopedic dentistry.** Workplace organization. Essential orthopedic tools. Materials used in diagnostics and prosthetics.	*2*		4		6	2	2	GC-1, IC-1, SPC-1, PC-4, PC-6	*lecture using video materials*	*Dental instruments*	*Assessment of the acquisition of practical skills (abilities)*
2	**Methods of obtaining impressions.** Types of impression materials. Taking anatomical impressions of jaws on models. Impression quality requirements.	2		4		6	2	2	PK-2, PK-4, PK-15, PK-6, SPC-1	*lecture-visualization*	*Jaw models*	*Testing, control work. Assessment of the acquisition of practical skills (abilities).*
3	**Bite registration. Basics of occlusion.** Determining the centric relation of the jaws. Basic occlusal relationships.	2		4		6	2	2	PK-2, PK-15, PK-16, PK-19, PK-6	*lecture using video materials*	*Jaw models*	*classes using training equipment and simulators*

4	**Diagnosis of dental defects.** Classification of defects (Kennedy et al.). Clinical assessment of dentition. Preliminary selection of orthopedic construction.	2		4		6	2	2	PK-16, PK-19, PK-2, GC-1, SPC-1	*lecture-visualization*	*Jaw models*	*classes using jaw models. Assessment of the acquisition of practical skills (abilities).*
5	**Preparing the oral cavity for orthopedic treatment.** General principles of patient preparation. The importance of oral hygiene.	2		4		6	2	2	PK-4, PK-15, SPC-1, PK-2	*lecture using video materials*	*Jaw models*	*analysis of clinical cases. Use of dummies.*
6	**Fundamentals of tooth preparation.** Instruments and principles of preparation for orthopedic structures. Demonstration and implementation on models.	2		4		6	2	2	PK-4, PK-2, PK-6, IC-1, PK-15	*lecture using video materials*	*Jaw models*	*Training sessions using simulators and training equipment. Testing. Assessment of the acquisition of practical skills (abilities).*
7	**Working with diagnostic models.** Obtaining jaw models. Model analysis. Determining occlusal relationships on the models.	2		4		6	2	2	PK-2, PK-16, PK-19, PK-6, GC-1	*lecture using video materials*	*Jaw models*	*analysis of clinical cases. Classes using simulators and training equipment*
8	**Basics of removable dentures.** Removable denture design. Manufacturing stages (without	2		4		6	2	2	PC-16, PC-19, GC-1, PC-6, IC-1	*lecture using video materials*	*Jaw models*	*Classes using simulators and*

	laboratory testing). Indications and contraindications.											*training equipment*
9	**Basics of fixed prosthetics.** Crowns, inlays, and bridges. Design principles and indications.	2		4		6	2	2	PK-16, PK-19, GC-1, SPC-1, PK-6	*lecture using video materials*	*Jaw models*	*analysis of clinical cases. Testing. Assessment of the acquisition of practical skills (abilities).*

Examples of educational technologies, methods and teaching techniques (abbreviated):*traditional lecture (L), lecture-visualization (LV), problem lecture (PL), lecture-press conference (LPC), lesson-conference (LC), training (T), debates (D), brainstorming (MSh), master class (MC), round table (RT), activation of creative activity (ATD), regulated discussion (RD), forum-type discussion (F), business and role-playing educational game (DI, RI), small group method (MG), classes using simulators, imitators (Tr), computer simulation (KS), analysis of clinical cases (KS), preparation and defense of medical history (IB), use of computer training programs (CTP), interactive atlases (IA), attendance of medical conferences, consultations (VK), participation in scientific and practical conferences (SPC), congresses, symposia (Sim), student educational and research work (UIRS), conducting subject Olympiads (O), preparation of written analytical works (AP), preparation and defense of abstracts (R), project technology (PT), excursions (E), distance educational technologies (DOT).*

Sample forms of current and midterm monitoring of academic performance (abbreviated):*T – testing, Pr – assessment of mastery of practical skills (abilities), ZS – solving situational problems, CR – test, KZ – test assignment, IB – writing and defending a medical history, CL – writing and defending a supervisory sheet, R – writing and defending an abstract, S – interview on test questions, D – preparing a report, etc.*

1.4.2. Organization of independent work of students

No.	Topic of independent work for students of 3rd semester:	Assignment for independent work	Recommended literature	Deadlines surrender (week number)
1.	**Organization of orthopedic dental care.** Structure, tasks and features of the orthopedic office.	Abstract, presentation, preparation of the report.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	1
2.	**Anatomical and physiological features of the dental system.** Age and functional features of the masticatory apparatus.	Abstract, presentation, preparation of a report	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018	2

			5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	
3.	**Occlusion and articulation. Types of bite.** Central occlusion and its importance in orthopedic dentistry.	Abstract, presentation, preparation using dummies.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	3
4.	**Classification of dental defects (Kennedy et al.).** Clinical significance of classifications.	Abstract, presentation, preparation using dummies.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et	4

			al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	
5	**Methods of clinical examination of a dental patient.** Anamnesis, examination, palpation, percussion.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	5
6	**Impression materials and methods of obtaining impressions.** Comparative characteristics of materials.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	6

7	**Registration of the central relation of the jaws.** Methods and clinical significance.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	6
8	**Temporomandibular joint: structure and functions.** Main disorders and their clinical significance.	Abstract, presentation. Preparation using dummies.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	7
9	**Fundamentals of tooth preparation for orthopedic structures.**	Abstract, presentation,	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements.	7

	Principles and tools.	report preparation.	Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	
10	**Diagnostic models in orthopedic dentistry.** Methods for obtaining and analyzing models.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	7
11	**Removable dentures: types and design elements.** Indications and contraindications.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited	8

			by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	
12	**Fixed dentures: crowns and bridges.** Design Basics.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	8
13	**Modern technologies in orthopedic dentistry (CAD/CAM).** Principles of digital modeling.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016	8

			2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	
14	**Asepsis, antisepsis and safety in orthopedic dentistry.** Prevention of infectious complications and organization of the work process.	Abstract, presentation, report preparation.	1.Organization and equipping of a dental clinic and office. Sanitary and hygienic requirements. Ergonomic principles of a dentist's work: a textbook / edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2016 2.Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017 3. Obstetrics/ed. by V. E. Radzinskiy, A. M. Fuks, Ch. G. Gagaev. M.: GEOTAR-Media, 2023 4.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018 5.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023	9

1.4.3. Assessment tools for monitoring academic performance

- **Current and midterm (modular) control**

*Current monitoring of students' knowledge*may represent:

- oral survey;
- solving situational problems;

- assessment of the acquisition of practical skills using dummies;
- test task; test work;
- checking the completion of written homework;
- checking abstracts, reports, presentations.

Topics of abstracts (reports, presentations):
3rd semester
1. Organization of orthopedic dental care.
Structure, tasks and features of the orthopedic office.
2. Anatomical and physiological features of the dental system.
Age and functional features of the masticatory apparatus.
3. Occlusion and articulation. Types of bite.
Central occlusion and its importance in orthopedic dentistry.
4. Classification of dental defects (Kennedy et al.).
Clinical significance of classifications.
5. Methods of clinical examination of a dental patient.
Anamnesis, examination, palpation, percussion.
6. Impression materials and methods of obtaining impressions.
Comparative characteristics of materials.
7. Registration of the central relationship of the jaws.
Methods and clinical significance.
8. Temporomandibular joint: structure and functions.
Main disorders and their clinical significance.
9. Basics of tooth preparation for orthopedic structures.
Principles and tools.
10. Diagnostic models in orthopedic dentistry.
Methods for obtaining and analyzing models.
11. Removable dentures: types and design elements.
Indications and contraindications.
12. Fixed dentures: crowns and bridges.
Design Basics.
13. Modern technologies in orthopedic dentistry (CAD/CAM).
Principles of digital modeling.

14. Asepsis, antisepsis and safety in orthopedic dentistry.
Prevention of infectious complications and organization of the work process.

Sample situational problems for the discipline:
Situational tasks

Problem 1

A 40-year-old patient complained of difficulty chewing and food getting stuck in the lower jaw on the left. Objectively: teeth 36 and 37 are missing, the defect is included, teeth 35 and 38 are stable, the mucosa is normal.
Clinical diagnosis? Possible complications if left untreated? Orthopedic treatment plan?

Problem 2

A 65-year-old patient presented with complaints of inability to chew properly and changes in facial appearance. Objectively: complete edentia of both jaws, severe atrophy of the alveolar processes.
Clinical diagnosis? What examinations are needed? Orthopedic treatment plan?

Problem 3

A 28-year-old patient complains of clicking and pain in the TMJ area on the right when opening the mouth. Objectively: limited mouth opening, pain upon palpation of the joint.
Clinical diagnosis? Additional tests? Treatment plan?

Problem 4

A 35-year-old patient presented with 70% decay of tooth 11. The root was preserved, the canal was treated, and there was no mobility.
Clinical diagnosis? What orthopedic options are available? Treatment plan?

Problem 5

A 25-year-old patient presented 10 days after the extraction of tooth 46 with complaints of chewing problems. Objectively: healing without complications, adjacent teeth are intact.
Clinical diagnosis? Methods of defect restoration? Treatment plan?

Problem 6

A 50-year-old patient complains of pain and mobility of the supporting teeth after the installation of a bridge prosthesis. Objectively: inflammation of the gums in the

area of the supporting teeth.
Clinical diagnosis? Possible errors? Treatment tactics?

Problem 7

A 22-year-old patient complains of an aesthetic defect in the front teeth.
Objectively: intact teeth, slight change in the shape and color of the enamel.
Clinical diagnosis? Possible correction methods? Treatment plan?

Problem 8

A 55-year-old patient with partial edentia of the upper jaw refuses removable dentures.
Clinical situation? Alternative treatments? Patient management plan?

Problem 9

After fixing a crown on tooth 46, the patient complains of a “high bite” and pain when closing the teeth.
Clinical diagnosis? Causes of complications? Doctor's treatment plan?

Problem 10

A 60-year-old patient with diabetes mellitus was referred for orthopedic treatment.
What are the patient preparation requirements? Potential risks? Treatment plan?

Problem 11

A 33-year-old patient complains of increased tooth wear and sensitivity.
Objectively: generalized enamel wear.
Clinical diagnosis? Causes? Orthopedic treatment plan?

Problem 12

During the impression taking process, the patient experiences a pronounced gag reflex.
Clinical situation? Prevention methods? Alternative impression methods?

Problem 13

The patient was referred for implantation in the area of teeth 36–37. Objectively: moderate bone tissue atrophy.

What examination methods are necessary? Contraindications? Treatment plan?

Problem 14

After the production of a complete removable denture, the patient complains of pain and chafing of the mucous membrane.

Clinical situation? Causes of complications? Doctor's approach?

Problem 15

A 45-year-old patient with signs of bruxism, increased tooth wear and chipped restorations.

Clinical diagnosis? Diagnostic methods? Comprehensive treatment plan?

***Boundary (modular) control*may represent:**

- testing by section (computer);

1. The main objectives of orthopedic dentistry include:

a) treatment of caries; b) restoration of the shape and function of the dental system; c) treatment of diseases of the mucous membrane; d) tooth extraction; d) treatment of pulpitis.

2. Included defects of the dentition include:

a) complete edentia b) absence of teeth on one side c) absence of a tooth with preservation of supporting teeth on both sides d) absence of all molars d) absence of front teeth

3. A reliable method for diagnosing occlusion is:

a) patient interview b) visual examination c) use of articulator d) palpation d) thermometry

4. Central occlusion is determined using:
a) saliva analysis b) recording of intermaxillary relationships c) temperature measurement d) radiography of soft tissues d) biochemical blood analysis

5. Fixed orthopedic structures include:
a) complete removable denture b) partial removable denture c) bridge d) mouth guard d) basic denture

6. Indications for making a crown are:
a) intact tooth b) destruction of the crown part more than 50% c) absence of teeth d) mobility of the third degree d) gingivitis

7. Removable dentures include:
a) veneer b) inlay c) clasp denture d) crown ca) pin structure

8. The main material for a metal-ceramic crown:
a) plastic b) plaster c) metal frame and ceramic coating d) cement d) silicone

9. The main method of fixing a bridge prosthesis:
a) splinting b) adhesive fixation c) cement fixation d) magnetic fixation d) without fixation

10. Functional diagnostic methods include:
a) determination of tooth color b) occlusion analysis c) blood pressure measurement d) general blood test d) palpation of lymph nodes

11. An impression in orthopedic dentistry is:
a) cast of teeth and oral tissues b) x-ray c) photograph of teeth d) laboratory model d) diagnostic card

12. The main purpose of obtaining an anatomical impression:
a) fixation of the prosthesis b) obtaining a diagnostic model c) treatment of caries d) removal of teeth d) splinting

13. The articulator is used for:
a) tooth extractionb) occlusion modelingc) teeth whiteningd) pressure measurementd) instrument sterilization

14. The masticatory system includes:
a) facial skinb) teeth, TMJ, musclesc) lungsd) stomachd) liver

15. Kennedy's classification of dental defects includes:
a) 2nd grade b) 3rd grade c) 4th grade d) 5th grade d) 6th grade

16. In case of complete absence of teeth, diagnosis:
a) partial adentia b) included defect c) complete adentia d) dental trauma a) caries

17. The main function of the dental system:
a) breathing b) chewing c) blood circulation d) urine formation d) blood filtration

18. Occlusion is:
a) the position of the teeth when closing; b) inflammation of the gums; c) caries; d) tooth extraction; d) salivation.

19. Taking an impression is carried out for the purpose of:
a) diagnostics and model making; b) tooth extraction; c) caries treatment; d) temperature measurement; d) orthodontic correction.

20. The laboratory stages of prosthetics include:
a) examination of the patient b) making a model c) palpation d) collecting anamnesis a) anesthesia

21. The main purpose of tooth preparation:
a) tooth decay b) creating a mold for a denture c) nerve removal d) whitening d) teeth cleaning

22. Impression materials include:
a) cement b) alginate c) metal d) composite d) plaster for fixation

23. The centric relation of the jaws is:
a) position of teeth when smiling; b) physiological position of jaws; c) position when talking; d) open bite; d) pathological occlusion.

24. The main stage of diagnostics in orthopedics:
a) removal of stitches b) clinical examination c) tooth extraction d) prescription of antibiotics d) physiotherapy

25. The main task of propaedeutics of orthopedic dentistry:
a) treatment of caries b) formation of basic clinical skills c) dental surgery d) desend therapy d) orthodontics

26. Diagnostic models include:
a) plaster models b) X-ray c) CT scan d) photo d) blood test

27. TMJ is:
a) temporomandibular jointb) maxillac) dentitiond) tongued) salivary gland

28. The main principle of orthopedic treatment:
a) tooth extraction b) restoration of function c) treatment of caries d) whitening d) nerve removal

29. The clinical stages of prosthetics include:
a) modeling b) taking an impression c) casting a model d) polishing d) casting

30. The main result of orthopedic treatment:
a) tooth extraction b) restoration of chewing function c) gum inflammation d) pain d) tooth mobility

Final control

Final control at the end of the study of the academic discipline it is carried out in the form of an exam, whichis exhibitedbased on the results of testing and midterm (modular) control in the discipline.

1.4.4. Course policy and assessment criteria

Students' knowledge is assessed using a point-rating system.in accordance with the standard “Regulations on the modular point-rating system for assessing students’ knowledge.

Discipline "Orthopedic Dentistry"assessed on a 100-point scale:

The maximum score is 100, of which:

- SRS - 20 points;
- current control - 40 points
- midterm control (module completion) - 40 points.

The results of the two modules are added together to produce an average score.

Scoring Policy	**Module 1**	**Module 2, etc.**
SRS	20 points	20 points
Classroom work (activity in discussions, oral questioning, group work, etc.)	20 points	20 points
Independent work: essay, report	20 points	20 points
Total for the module (testing)	40 points	40 points
Total for the discipline:	100 points	
Exam		

Final assessment in the form of a test is carried out based on the results of attendance, current and midterm (modular) assessment.

The final assessment form is a credit.

The following scale of grades and scores is used to evaluate student performance:

Rating and Scoring Scale				
Maximum score	Intervals			
	unsatisfactory	"satisfactorily"	"Fine"	"Great"
20	0-11	12-15	16-17	18-20
40	0-23	24-30	31-35	36-40
60	0-35	36-45	46-53	54-60
100	0-59	60-75	76-89	90-100

Academic achievement grading scale

Rating (points)	**Letter grading system**	**Value for calculating GPA**	**Digital equivalent of the assessment**	**Assessment according to the traditional system**
96-100%	A+	4.00	5	Great
93-95.99%	A	3.75		
90-92.99%	A-	3.67		
87-89.99%	B+	3.33	4	Fine
83-86.99%	B	3.00		
80-82.99%	B-	2.67		

77-79.99%	C+	2.33	3	Satisfactorily
73-76.99%	C	2.00		
70-72.99%	C-	1.67		
67-69.99%	D+	1.33	2	
63-66.99%	D	1.00		
60-62.99%	D-	0.67		
00-59.99%	F	0.00	1	Unsatisfactory
	P			Credit
	NP			Fail
	I		Not taken into account when calculating the average grade	Failed to comply with all disciplinary requirements for a valid reason
	W			Refusal to attend a course that is not mandatory
	AU			Attended the course as a student without receiving grades (awarded to the student if he/she attended at least 80% of the classes in the additional course as a student).

I - awarded to a student who has failed to complete all course requirements for a valid reason. The student has the right to complete all course requirements within the time limit established by the educational institution, after which the grade will be adjusted.

W - assigned to a student who decides to withdraw from a course no later than the sixth week of the semester. Applies only to elective courses.

AU - awarded to a student if he/she has attended at least 80% (eighty percent) of the classes in the additional discipline as a listener.

For each discipline, GPA is calculated automatically in the information system.

GPA (Grade Point Average (GPA) is a weighted average of a student's academic achievement. GPA is a key indicator of academic performance.

Based on academic performance, a GPA is calculated, with a maximum of 4.0. A student's GPA is calculated based on their academic performance in each semester and at graduation.

1.4.5. Educational, methodological and informational support of the discipline

List of sources and literature:

a) main literature:

1.Introduction to Dentistry / Sevbitov AV - Moscow: GEOTAR-Media, 2018

2. Propaedeutic dentistry: situational tasks: a tutorial / E. A. Bazikyan [et al.]; edited by E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023

3. Dental instruments: atlas / E. A. Bazikyan. - 3rd ed. , erased - Moscow: GEOTAR-Media, 2017

b) additional literature:

1.Propaedeutics of dental diseases: textbook / O. O. Yanushevich, E. A. Bazikyan, A. A. Chunikhin [et al.]; edited by O. O. Yanushevich, E. A. Bazikyan. - Moscow: GEOTAR-Media, 2023

2.Propaedeutics of dental diseases: textbook / edited by S. N. Razumova, I. Yu. Lebedenko, S. Yu. Ivanov - Moscow: GEOTAR-Media, 2019

3.Fundamentals of anatomy, occlusion and articulation in dentistry / Abakarov S. I. - Moscow: GEOTAR-Media,

4.Interaction of dental materials with the human body: a tutorial / Kurbanov O. R., Alieva A. O., Kurbanov Z. O. - Moscow: GEOTAR-Media, 2019

5.Anatomy, physiology and biomechanics of the dental system / edited by S. D. Arutyunov, L. L. Kolesnikov, V. P. Degtyarev, I. Yu. Lebedenko - Moscow: GEOTAR-Media, 2017

List of resources of the information and telecommunications network "Internet" necessary for mastering the discipline

Provide links to websites that are publicly accessible.

List of resources of the information and telecommunications network "Internet" required for mastering the discipline (modules)

-www.kyrlibnet.kg.

-www.iprbookshop.ru.

-www.medportal.ru.

-www.studmedlib.ru

-www.mediliter.ru,www.meduniver.com,

- kingmed.info, vk.com, itweek.ru, medlit.biz,

- allmedbook.ru, booksmed.com, medicalenglish.ru,

- library.bsu.edu.ru, rutracker.org.

1.4.6. Material and technical support of discipline

When teaching students, modern methods and forms of teaching are used, using the latest information technologies, electronic educational resources and other information systems necessary for the successful implementation of educational, scientific and therapeutic activities.

The department has the necessary equipment for teaching, including demonstration devices, multimedia, educational films, simulators, maps, posters, and visual aids. The classroom requirements include computer labs, academic and specially equipped classrooms and laboratories, and a blackboard.

The lecture room is equipped with a power supply kit (220 V, 2 kW, complete with an RCD), specialized furniture and office equipment (a blackboard for writing with chalk and felt-tip pen, a stand-lectern, a lecturer's desk, a chair-chair, classroom tables, a classroom chair, as well as technical teaching aids (a wall-mounted screen with an electric drive and remote control, a multimedia projector with a laptop).

To review knowledge of the anatomical structure of the reproductive system (muscular skeletal structure, blood supply, innervation).

A new innovative teaching method is used for presentations, lectures and videos.

The "Propedeutics of Orthopedic Dentistry" section is selected, along with a nosology related to the topic of the practical lesson or lecture. Each nosology is accompanied by an explanation of the etiology, definition, classification, patient complaints, risk factors, medical and life history, a 3D physical examination, and laboratory data. Videos are shown in 3D.

Student knowledge assessment is performed after the student logs in from a computer or mobile device. The student registers, the system assigns a task on the selected nosology, and the student selects the correct answers from a variety of options. The final score is displayed as a percentage and is calculated based on the number of correct answers.

The practical lesson consists of two parts: the first half is an analysis of the student's theoretical knowledge (etiology, clinical picture, complaints, etc.); the second half is a general examination of the patient, a simulation center where students can practically examine a patient.

Table 1

No. p/p	Type	Name	Note

1.	Videos on an interactive whiteboard	□ Diagnosis of diseases of the dental system □ Physiological state of the dental system (normal occlusion and articulation) □ Clinic of partial edentia (defects of dental arches and their classification) □ Complications of orthopedic treatment (errors and complications in prosthetics) □ Orthopedic dentistry (methods of patient examination) □ Pathological abrasion of teeth □ Deformations of dental arches and bite	From 10 min. 60
2.	Presentations.	Throughout the lecture course	From 20 to 30 slides per presentation
3.	Written and test assignments.	Throughout the lecture course	In a significant way quantity
4.	Practical training. Simulation center (stations)	Throughout the course	In a significant way quantity

List of premises used

Table 2.

No.	Audience type	List of equipment
1	An auditorium for lecture-type classes.	A stationary multimedia projector, laptop, 3x4 m screen, whiteboard, and audio equipment. (microphone, speakers)
2	Auditorium for seminars, ongoing monitoring and midterm assessment, group and individual consultations	Stationary multimedia projector, laptop, 3x4 m screen, interactive whiteboard, dummies, phantoms.

1.4.7. Student research work

The research work on the discipline "Propaedeutics of Orthopedic Dentistry" has the following goals: increasing the level of professional and creative training of students, improving the forms of involving young people in scientific research and using the creative potential of students to solve current scientific problems.

The research work is aimed at solving the following problems:

- to form an idea of the main stages of scientific research activities;
- to teach how to use the conceptual apparatus of scientific research in work;

- teach how to work with various information sources;
- development of skills for perception and analysis of professional information;
- development and improvement of decision-making and implementation abilities;
- training students by means of their acquisition of methods, techniques and skills for carrying out scientific research work during the learning process;
- development of their creative abilities, independence, initiative in studies and future professional activities within the framework of their specialty.

The program of scientific research work of students (SRW), as a section for mastering practical skills, includes:

- study of specialized literature and other scientific and medical information, achievements of domestic and foreign science and technology in the field of medical knowledge, preparation of scientific abstracts (literature reviews);
- participation in conducting scientific research or in carrying out certain developments in departments;
- collection, processing, analysis and systematization of scientific information on a topic or assignment;
- preparing reports and presenting a paper at a conference, preparing scientific work for publication;

The results of work with scientific monographs and articles are discussed during practical classes.

To develop and improve communication skills, decision-making skills, and medical tactics in emergency situations, special training sessions are organized in the form of work in small groups, role-playing games, brainstorming, discussions, presentations, or, in preparation for which, students are divided into groups in advance, defending one or another point of view on the issue under discussion.

2. Educational and methodological materials

Educational and methodological materials (EMM), as methodological support for the discipline, are presented in the form of lecture texts, developments of practical classes, both in printed and electronic form.

2.1. Lecture notes

Lecture Topic #1: Introduction to instruments and materials for orthopedic dentistry. Workplace organization. Basic instruments for orthopedic dentists. Materials used in diagnostics and prosthetics.

1. The purpose of the lecture

Learn the basics of an orthopedic surgeon's workstation, master the list and purpose of essential instruments, and systematize knowledge of the materials used in diagnostics and orthopedic treatment. Develop an understanding of the workflow in an orthopedic office and the stages of interaction between the surgeon and diagnostic and prosthetic materials.

2. The importance of the topic in orthopedic dentistry

Orthopedic dentistry is a key clinical discipline aimed at restoring the form, function, and aesthetics of the dental system. Any orthopedic treatment begins not with prosthetics, but with a properly organized workflow, including:

- diagnostics of the state of the dental system
- preparation of the workplace
- selection of tools
- selection of materials

Errors at the stage of work organization lead to diagnostic inaccuracies, technical errors and a decrease in the quality of orthopedic structures.

The orthopedic office must provide:

- precision of clinical manipulations
- sterility and safety
- ergonomics of a doctor's work
- availability of materials and tools

3. Organization of the orthopedic surgeon's workplace

The orthopedic surgeon's workplace includes several functional areas:

3.1. Clinical zone

Here the patient is examined and manipulations are performed:

- dental chair
- dental unit
- operating light
- saliva ejector and suction system

3.2. Instrumental zone

The tools are located:

- inspection kits
- orthopedic kits
- dissection instruments
- instruments for taking impressions

3.3. Aseptic zone

- sterile tables
- tool containers
- disinfectant solutions
- disposable materials

3.4. Laboratory area (interaction with the technician)

- plaster tables
- articulators
- jaw models
- wax and plastic materials

4. Basic tools of an orthopedic surgeon

The instruments are conventionally divided into diagnostic, preparatory and orthopedic.

4.1 Diagnostic tools

- dental mirror
- probe
- tweezers
- periodontal probe
- spatula

Functions:

- oral examination
- assessment of dental arches
- detection of defects

4.2. Instruments for preparation

- turbine tip
- diamond burs
- carbide burs
- cooling system

Purpose:

- treatment of hard dental tissues
- formation of supports for prostheses

4.3. Orthopedic instruments

- impression trays (metal, plastic)
- spatulas for mixing
- orthopedic knives
- wax instruments

5. Materials in orthopedic dentistry

Materials are divided into diagnostic, impression, structural and auxiliary.

5.1. Impression materials

Used to obtain the precise anatomical shape of the jaws.

Main types:

- alginate
- silicone (C-silicones, A-silicones)
- polyester

Properties:

- fidelity of reproduction
- elasticity
- dimensional stability

5.2. Gypsum materials

Used for making models:

- model plaster

- supergypsum

Functions:

- obtaining diagnostic models
- prosthetic modeling

5.3. Wax materials

- base wax
- modeling wax

Application:

- formation of future structures
- bite registration

5.4. Structural materials

- metals (cobalt-chromium, titanium)
- ceramics
- plastics
- composites

6. Logic of the clinical process in orthopedics

Orthopedic treatment always follows the following pattern:

examination → impression → model → diagnostics → planning → design

Mistakes in the early stages lead to:

- incorrect fit of the prosthesis
- occlusion violation
- functional overload

7. Clinical significance of instruments and materials

The correct choice of tools ensures:

- diagnostic accuracy
- quality of prosthetics
- durability of structures
- patient comfort

Materials influence:

- biocompatibility
- aesthetics
- functionality

8. Conclusion

Organizing an orthopedic dentist's workspace and understanding instruments and materials are the foundation of all orthopedic dentistry. Without a proper technical foundation, high-quality prosthetics, diagnostics, and treatment planning are impossible. This topic develops the orthopedic dentist's initial clinical thinking and prepares them for subsequent stages of training.

Lecture Topic #2:Impression methods. Types of impression materials. Taking anatomical impressions of the jaws. Impression quality requirements.

1. The purpose of the lecture

Explore modern methods of taking impressions in orthopedic dentistry, the classification of impression materials, master the principles of taking anatomical impressions, and learn to evaluate the quality of the resulting impression as a basis for the production of diagnostic and working models.

2. The Importance of Impressions in Orthopedic Dentistry

An impression is one of the key stages of orthopedic treatment, as it is a physical copy of the oral tissues, on the basis of which jaw models are made.

The accuracy of the impression depends on:

- accuracy of the diagnostic model
- quality of the future prosthesis
- correctness of occlusion
- functional adaptation of the patient

Errors at the stage of obtaining an impression lead to:

- mismatch of the prosthesis with the tissues
- trauma to the mucous membrane
- violation of the fixation of the structure
- errors in occlusion

Thus, the impression is the primary foundation of the entire orthopedic structure.

3. The concept of an imprint

An impression is a negative image of the oral tissues obtained using special impression materials.

Once cast in plaster, it becomes a positive model used for diagnosis and the manufacture of prostheses.

4. Classification of impressions

4.1. By purpose of use

- anatomical (indicative)
- functional
- workers
- auxiliary

4.2. By accuracy

- preliminary
- accurate

4.3. By pressure

- compression (under pressure)
- decompression (no pressure)

5. Impression materials

Impression materials must provide:

- accuracy of fabric reproduction
- elasticity during withdrawal
- dimensional stability
- biocompatibility

5.1. Alginate materials

Most commonly used for anatomical impressions.

Properties:

- ease of use
- availability
- quick setting

Flaws:

- storage shrinkage
- low accuracy compared to silicones

Application:

- diagnostic models
- primary impressions

5.2. Silicone materials

Types:

- C-silicones (condensation)
- A-silicones (additive)

Advantages:

- high precision
- dimensional stability
- good detailing

Application:

- working impressions
- precision prosthetic structures

5.3. Polyester materials

- high rigidity
- excellent accuracy

Flaw:

- difficulty in removing from the oral cavity

6. Method of taking an anatomical impression

6.1. Patient preparation

Before taking an impression, it is necessary:

- explain the procedure
- assess the anatomy of the oral cavity

- choose an impression tray
- carry out hygienic preparation

6.2. Selection of an impression tray

The spoon should:

- match the jaw size
- cover the dentition and alveolar process
- do not injure the mucous membrane

6.3. Mixing the material

Alginate is mixed until:

- homogeneous consistency
- absence of lumps
- optimal viscosity

6.4. Inserting a spoon

- the material is evenly distributed
- the spoon is inserted into the oral cavity
- fixed until completely cured

6.5. Removing the impression

- with a sharp but controlled movement
- without deformation of the material

7. Requirements for the quality of the print

A quality print must meet the following criteria:

7.1 Anatomical accuracy

- clear display of teeth
- pronounced anatomical structures
- absence of blurriness

7.2. Absence of defects

The following are not allowed:

- breaks

- air bubbles
- deformations
- incomplete filling of the spoon

7.3. Full display of boundaries

- transitional folds
- alveolar processes
- bridles

7.4. Shape stability

- no shrinkage
- maintaining geometry until the model is cast

8. Errors when obtaining prints

8.1 Technical errors

- incorrect selection of spoon
- insufficient amount of material
- violation of mixing proportions

8.2 Clinical errors

- patient movement
- incorrect fixation of the spoon
- failure to comply with the holding time

8.3 Laboratory errors

- delay in gypsum pouring
- violation of print storage
- deformation during transportation

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9. Clinical significance of impressions

Impressions are used for:

- production of diagnostic models
- prosthetic planning
- manufacturing of individual designs
- treatment control

10. Conclusion

Impression techniques are a key stage of orthopedic treatment. The quality of the impression directly determines the accuracy of the model and the success of subsequent prosthetic restorations. An orthopedic surgeon must possess both theoretical knowledge of materials and practical skills in taking anatomical and functional impressions.

Lecture Topic #3: Bite Registration. Basics of Occlusion. Determining the Central Relation of the Jaws. Basic Occlusal Relationships

1. The purpose of the lecture

Learn the fundamentals of occlusion and types of bite, master the principles of registering the central jaw relationship, and understand the functional occlusal interactions of the dental arches as the basis for orthopedic treatment.

2. The importance of occlusion in orthopedic dentistry

Occlusion is the dynamic and static interaction of the dental arches of the upper and lower jaws under various functional conditions (chewing, speech, swallowing, rest).

Correct occlusion ensures:

- uniform distribution of chewing load
- stability of dental arches
- normal functioning of the temporomandibular joint (TMJ)
- aesthetic harmony of the face
- physiological state of the masticatory muscles

Violation of occlusion leads to:

- overload of individual teeth
- pathological abrasion
- TMJ dysfunction
- pain syndromes
- impaired adaptation to prostheses

3. The concept of bite

Bite is the nature of the closure of the dental arches of the upper and lower jaws in the position of central occlusion.

Bite is a static expression of occlusion.

4. Types of occlusion

4.1. Central occlusion

This is the maximum multiple contact of teeth during habitual jaw closure.

Characterized by:

- the largest number of contacts
- stable position of the lower jaw
- physiological load on the periodontium

4.2. Anterior occlusion

It is formed when the lower jaw moves forward.

Characteristic:

- contact of the front teeth
- disunion of lateral teeth

4.3 Lateral occlusion

Occurs when the lower jaw is displaced to the right or left.

Characteristic:

- working and balancing side
- involvement of canines or lateral teeth

4.4. Occlusion at rest

There is a minimum physiological gap between the teeth (2–4 mm).

5. Central jaw relation

Centric relation is the position of the mandible in which the articular heads are in the most stable and physiological position in the glenoid fossa, regardless of the position of the teeth.

This position is used:

- in case of complete loss of teeth
- in complex orthopedic reconstructions
- with total prosthetics

6. Methods for determining the central ratio

6.1 Clinical methods

- manual guidance of the lower jaw
- bimanual technique
- relaxation of the chewing muscles

6.2. Hardware methods

- use of articulators
- registration using wax rollers
- face bows

7. Occlusal relationships

Occlusal contacts are divided into:

7.1 Physiological contacts

- uniform load distribution
- multiple stable contacts

7.2 Pathological contacts

- supracontacts
- premature contacts
- blocking contacts

8. Functional role of occlusion

Occlusion is involved in:

- the process of chewing (chewing food)
- speech formation
- stabilization of the lower jaw
- periodontal protection

9. Errors in determining the bite

9.1 Clinical errors

- incorrect position of the lower jaw
- lack of muscle relaxation
- insufficient patient control

9.2. Technical errors

- incorrect fixation of wax rollers
- deformation of registration material
- errors when transferring to the articulator

10. Clinical significance of bite registration

Accurate determination of the bite is necessary for:

- manufacturing of prostheses
- restoration of chewing function
- normalization of the TMJ
- preventing overloading of teeth

11. Conclusion

Occlusion is a fundamental concept in orthopedic dentistry. Bite registration and determination of the centric relation of the jaws are key stages of diagnosis and treatment planning, especially in cases of partial or complete tooth loss. The accuracy of these stages directly determines the functional and aesthetic outcome of orthopedic treatment.

Lecture Topic #4: Diagnosis of dental defects. Classification of defects (Kennedy et al.). Clinical assessment of dental arches. Preliminary selection of orthopedic construction.

1. The purpose of the lecture

Learn the principles of diagnosing dental defects, master the basic classifications of partial and complete tooth loss (including the Kennedy classification), learn how to conduct a clinical assessment of dental arches and form a preliminary choice of orthopedic structure.

2. The importance of diagnosing dental defects

Diagnosis of dental defects is a key stage of orthopedic treatment, as it determines:

- choice of prosthesis design
- volume of tooth preparation
- treatment prognosis
- functional result

Defects in dental arches lead to:

- disruption of chewing efficiency
- redistribution of the load on the remaining teeth
- displacement of teeth
- occlusion violation
- change in the patient's appearance

3. The concept of dental defect

A dental defect is the absence of one or more teeth, leading to a disruption of the integrity of the dental arch and the function of the dental system.

A distinction is made between:

- partial defects
- multiple defects
- complete edentia

4. Classification of dental defects

4.1 Kennedy Classification

The most common clinical classification.

1st Class Kennedy

- bilateral end defects
- missing chewing teeth on both sides

Characteristic:

- lack of distal support
- high load on the front teeth

II class Kennedy

- unilateral end defect
- missing teeth on one side

III class Kennedy

- included (limited) defect
- the defect is surrounded by teeth on both sides

Kennedy IV class

- defect in the area of the front teeth
- crosses the midline

4.2. Additional classifications

- by length (small, medium, large defects)
- by the number of missing teeth
- by functional significance

5. Clinical assessment of the dentition

The assessment is carried out according to several parameters:

5.1. Condition of the remaining teeth

- stability
- mobility
- presence of caries
- periodontal condition

5.2 Occlusal relationships

- presence of supracontacts
- tooth displacement
- malocclusion

5.3. Condition of the alveolar process

- degree of atrophy
- comb shape
- mucosal density

5.4 Functional assessment

- chewing efficiency
- participation of teeth in occlusion
- TMJ stress

6. Secondary changes in dental arch defects

When teeth are missing, the following occurs:

- tilt of adjacent teeth towards the defect
- the nomination of antagonists (the Popov-Godon phenomenon)
- overload of supporting teeth
- violation of the occlusal plane
- bone tissue atrophy

7. Clinical significance of classification

Classification of defects allows:

- standardize diagnostics
- predict the complexity of treatment
- choose the type of prosthetics
- identify supporting teeth

8. Preliminary selection of orthopedic design

The choice of design depends on:

8.1. Type of defect

- included defect → bridge prostheses
- terminal defect → removable structures

8.2. Conditions of supporting teeth

- with good periodontal health → fixed structures
- in case of mobility → removable or splinting structures

8.3. Number of missing teeth

- single defects → inlays, crowns
- multiple → clasp dentures
- complete edentia → complete removable dentures

9. Errors in defect diagnostics

- underestimation of the degree of atrophy
- ignoring occlusal disorders
- incorrect assessment of supporting teeth
- lack of TMJ analysis

10. Clinical significance of diagnostics

Correct diagnosis ensures:

- choice of rational prosthetics
- reduction of complications
- increasing patient adaptation
- durability of the structure

11. Conclusion

Diagnosis of dental defects is the foundation of orthopedic treatment. Using the Kennedy classification and a comprehensive clinical assessment allows the physician to properly plan treatment, select the optimal prosthesis design, and predict the patient's rehabilitation outcome.

Lecture Topic #5: Preparing the Oral Cavity for Orthopedic Treatment (Theoretical Foundations). General Principles of Patient Preparation. The Importance of Oral Cavity Sanitation.

1. The purpose of the lecture

Learn the basic steps of oral cavity preparation for orthopedic treatment, master the principles of sanitation, and understand the importance of preliminary dental rehabilitation for successful prosthetics and the longevity of orthopedic structures.

2. The importance of oral cavity preparation in orthopedic dentistry

Oral cavity preparation is a mandatory step before prosthetics and determines:

- quality of fixation of prostheses
- the duration of their service
- prevention of complications
- functional result of treatment

Prosthetics without preliminary sanitation leads to:

- development of inflammatory processes
- deterioration of the fixation of structures
- progression of caries and periodontitis
- pain and discomfort
- early loss of prostheses

Thus, orthopedic treatment is impossible without preliminary comprehensive preparation of the patient.

3. The concept of oral cavity sanitation

Oral cavity sanitation is a complex of therapeutic and preventive measures aimed at eliminating all sources of infection and restoring the functional state of the dental system before prosthetics.

4. Basic stages of oral cavity preparation

4.1. Therapeutic stage

- caries treatment
- treatment of pulpitis and periodontitis
- restoration of damaged teeth
- replacement of faulty seals

4.2. Periodontal stage

- treatment of gingivitis and periodontitis
- removal of tartar
- curettage of periodontal pockets
- elimination of gum inflammation

4.3. Surgical stage

- removal of decayed teeth
- root removal
- removal of sharp edges of the alveolar process
- preparation for implantation

4.4 Orthopedic training

- temporary splinting
- temporary prosthetics
- restoration of occlusal height
- bite correction

5. Assessment of the patient's general condition

Before prosthetics, the doctor evaluates:

- general condition of the body
- presence of chronic diseases

- state of the immune system
- level of oral hygiene
- patient motivation

6. The importance of oral hygiene

Hygiene plays a key role in preparation:

With poor hygiene the following is observed:

- gum inflammation
- bleeding
- accelerated tooth decay
- risk of complications after prosthetics

The patient must undergo:

- teeth brushing training
- selection of hygiene products
- motivation control

7. Features of preparation in various clinical situations

7.1. Partial edentia

- elimination of foci of infection
- strengthening of supporting teeth
- periodontal treatment

7.2. Complete edentia

- assessment of the mucous membrane
- root removal
- alveolar ridge preparation

7.3. Patients with periodontitis

- mandatory stabilization of the process
- dental splinting
- inflammation control

8. Mistakes at the preparation stage

- ignoring hidden caries
- insufficient periodontal treatment

- early start of prosthetics
- lack of hygiene control
- preservation of foci of infection

9. The influence of preparation on the outcome of prosthetics

High-quality rehabilitation ensures:

- stable fixation of prostheses
- uniform load distribution
- absence of inflammation
- long service life of the structure
- high patient adaptation

10. Clinical significance of the preparation stage

Oral cavity preparation is not an auxiliary but a mandatory treatment step that determines the success of the entire orthopedic treatment. Without it, it is impossible to ensure physiological adaptation and long-term functionality of the prostheses.

11. Conclusion

Oral hygiene is the foundation of orthopedic treatment. It includes a comprehensive range of therapeutic, surgical, periodontal, and preventative measures. Only after complete preparation is high-quality and predictable prosthetics possible.

Lecture Topic #6: Fundamentals of Tooth Preparation (phantom course).
Instruments and principles of preparation for orthodontic structures. Demonstration and execution on models.

1. The purpose of the lecture

To study the theoretical foundations of tooth preparation for various types of orthopedic structures, master the principles of dental stump formation, understand the biomechanical and biological requirements for the processing of hard dental tissues, and develop an understanding of phantom training as a stage of practical training for an orthopedic surgeon.

2. The importance of preparation in orthopedic dentistry

Tooth preparation is one of the key stages of fixed prosthetics, which directly affects:

- fixation of the orthopedic structure
- durability of the prosthesis

- preservation of dental tissue
- biocompatibility of the structure

Incorrect preparation can lead to:

- pulp overheating
- development of pulpitis
- decrease in tooth strength
- violation of the marginal fit of the crown
- periodontal inflammation

3. The concept of tooth preparation

Preparation is a controlled mechanical removal of hard dental tissues in order to create an optimal shape for fixing an orthopedic structure.

Main objective:

- creation of the correct geometry of the tooth stump
- ensuring retention and stability of the prosthesis
- preservation of biological structures

4. Biological principles of dissection

4.1. Preservation of dental tissue

- minimally necessary removal of enamel and dentin
- preventing over-turning

4.2. Pulp protection

- temperature control
- water cooling
- intermittent processing

4.3. Periodontal principle

- preservation of the gingival margin
- absence of gum trauma
- ensuring the hygienic condition of the edge of the structure

5. Mechanical principles of preparation

- formation of stump taper (2–6°)
- ensuring retention

- creating resistance to lateral loads
- surface smoothness

6. Main types of preparation

6.1. Under crowns

- full tooth coverage
- uniform tissue reduction

6.2. Under tabs

- partial preparation
- preserving maximum tooth volume

6.3. Under bridge prostheses

- treatment of abutment teeth
- creating parallelism of supports

7. Dissection instruments

7.1. Turbine tips

- high rotation speed
- used for rough processing

7.2. Bores

- diamond (for enamel)
- carbide (for dentin)
- finishing (for polishing)

7.3. Auxiliary tools

- cooling system
- retraction threads
- mirrors and probe

8. Stages of tooth preparation

8.1. Diagnostic stage

- assessment of tooth condition
- choice of design
- planning the volume of turning

8.2. Main stage

- hard tissue reduction
- stump formation
- creating a ledge (if necessary)

8.3. Finishing stage

- smoothing surfaces
- removal of sharp edges
- form control

9. Phantom learning

The phantom course is a mandatory stage of student training.

It includes:

- work on dental models
- practicing dissection skills
- development of correct motor skills
- error control without risk to the patient

10. Basic mistakes in preparation

- excessive tissue removal
- tooth overheating
- incorrect taper
- gum injury
- uneven surfaces
- absence of a ledge in the readings

11. Clinical significance of preparation

High-quality preparation ensures:

- precise fit of the crown
- durability of the structure
- absence of secondary caries
- periodontal preservation
- patient comfort

12. Conclusion

Tooth preparation is a fundamental step in fixed prosthetics. Phantom training helps develop the basic practical skills necessary for safe and precise work in a clinical setting. Adherence to biological and mechanical principles ensures successful orthopedic treatment.

Lecture Topic #7: Working with diagnostic models. Obtaining jaw models. Model analysis. Determining occlusal relationships on models.

1. The purpose of the lecture

To study the methodology for obtaining diagnostic models of jaws, master the principles of their analysis, learn to determine occlusal relationships outside the oral cavity, and use models as an important diagnostic tool in orthopedic dentistry.

2. The importance of diagnostic models

Diagnostic models are one of the most important stages of patient examination in orthopedic dentistry. They allow:

- objectively assess the condition of the dentition
- study extraoral occlusion
- plan orthopedic treatment
- predict the complexity of prosthetics

Advantages of the models:

- possibility of multiple analysis
- no influence of saliva and soft tissues
- visualization of hidden defects
- convenience for design planning

3. Obtaining diagnostic models

3.1. Taking an impression

The basis of the model is a high-quality impression (usually alginate).

Important:

- accuracy of display of dental arches
- no bubbles or breaks
- preservation of anatomical structures

3.2. Model casting

Stages:

- preparation of plaster
- filling the print
- vibration processing
- formation of the foundation

3.3. Hardening and processing

- holding until complete hardening
- removal of impression material
- model trimming
- marking

4. Types of diagnostic models

- models of the upper jaw
- lower jaw models
- occlusally matched models
- working models

5. Analysis of diagnostic models

The analysis includes a comprehensive assessment of:

5.1. Dental arches

- presence of defects
- arrangement of teeth
- degree of inclination
- presence of deformations

5.2. Occlusal plane

- evenness
- presence of deformations
- displacement of individual sections

5.3. Interdental contacts

- contact density
- presence of supracontacts

- lack of contacts in defective areas

6. Determination of occlusal relationships on models

The models allow us to estimate:

- central occlusion
- lateral displacements
- anterior occlusion
- symmetry of the dental arches

7. Using an articulator

The articulator is used for:

- imitation of movements of the lower jaw
- occlusion analysis
- modeling of future prostheses

Stages:

- fixing models
- bite registration
- setting parameters

8. Diagnostic value of models

Diagnostic models allow:

- clarify the diagnosis
- determine the class of defect
- choose the type of prosthesis
- identify bite errors
- assess the need for dissection

9. Errors when working with models

- deformation of the impression before casting
- bubbles in plaster
- incorrect jaw relationship
- inaccurate fixation in the articulator
- damage to the model during processing

10. Clinical significance

The use of diagnostic models ensures:

- precise treatment planning
- reduction of clinical errors
- predicting the outcome
- improving the quality of prosthetics

11. Conclusion

Using diagnostic models is a mandatory step in an orthopedic examination. They allow the doctor to analyze the dental system outside the oral cavity and serve as the basis for planning rational orthopedic treatment.

Lecture Topic #8: Basics of Removable Prosthetics (Theoretical and Demonstration Level)

1. The purpose of the lecture

To study the design principles of removable dentures, their functional purpose, indications and contraindications for use, and the stages of clinical planning for removable dentures. To develop a basic understanding of the biomechanics of removable dentures and their interaction with the tissues of the denture bed.

2. General characteristics of removable dentures

Removable prosthetics is a branch of orthopedic dentistry aimed at restoring lost teeth and the function of the masticatory system using structures that the patient can independently remove and install in the oral cavity.

The main purpose of removable dentures:

- restoration of chewing function
- restoration of facial aesthetics
- speech normalization
- prevention of further deformation of the dental arches
- restoration of occlusal balance

Removable dentures are widely used for:

- partial edentia
- complete edentia
- impossibility of installing permanent structures

- severe atrophy of the alveolar processes

3. Anatomical and functional principles of removable prosthetics

The effectiveness of a removable denture depends on the condition:

3.1. Prosthetic bed

The prosthetic bed includes:

- mucous membrane of the alveolar processes
- hard palate (upper jaw)
- transitional fold
- muscles and movable structures

The nature of the mucous membrane influences:

- fixation of the prosthesis
- pressure distribution
- structural stability

3.2. Alveolar process

After tooth loss, the following occurs:

- bone tissue atrophy
- decrease in the height of the alveolar ridge
- changing the shape of the prosthetic bed

The degree of atrophy is determined by:

- type of prosthesis
- its stability
- the need for additional fasteners

3.3. Masticatory muscles

The muscles of the masticatory apparatus provide:

- stability of the mandible
- functional movements
- load distribution

Muscle dysfunction may result in:

- violation of adaptation to the prosthesis
- pain syndrome
- overload of individual sections

4. Design of removable dentures

A removable denture is a complex engineering and biological system.

Main elements:

4.1. Prosthesis base

This is the basis of the design, which:

- transmits chewing load to tissues
- holds artificial teeth
- provides fixation

Materials:

- acrylic plastics
- nylon materials
- metal bases (rare)

4.2. Artificial teeth

Made from:

- acrylic plastic
- ceramics (less common)

Functions:

- restoration of chewing
- restoration of aesthetics
- formation of occlusion

4.3. Fixing elements

Provides retention of the prosthesis:

- clasps (hooks)
- attachments
- locking systems
- anatomical retention

5. Classification of removable dentures

5.1. By volume of substitution

- partial removable dentures
- complete removable dentures

5.2. By design

- lamellar
- clasp
- conditionally removable

5.3. Based on the material

- acrylic
- nylon
- combined

6. Indications for removable dentures

Removable structures are indicated for:

- partial or complete edentia
- impossibility of installing implants
- multiple defects of the dental arches
- severe atrophy of the alveolar processes
- reduced tooth support
- economic limitations of the patient

7. Contraindications

Absolute:

- severe mental illnesses
- severe allergic reactions to materials

Relative:

- acute inflammatory processes
- poor oral hygiene
- severe atrophy without preparation

8. Biomechanics of removable dentures

A removable denture functions as a system that absorbs the chewing load through the mucous membrane.

Main mechanisms:

- support (pressure distribution)
- retention
- stabilizing (stability during movements)

Load balancing problem

Unlike natural teeth, where the load is transmitted through the periodontium, with removable dentures the pressure is distributed to the mucous membrane and bone tissue, which can lead to:

- bone atrophy
- painful sensations
- inflammatory reactions

9. Stages of removable dentures

9.1 Clinical stages

- patient examination
- choice of design
- taking impressions
- determination of bite
- fitting
- fixation

9.2 Laboratory stages

- model making
- basis modeling
- teeth setting
- polymerization
- prosthesis processing

10. Adaptation of the patient to a removable denture

Adaptation occurs in 3 phases:

Phase I (acute)

- discomfort
- increased salivation
- speech impediment

Phase II (habituation)

- reduction of discomfort
- improved chewing
- speech stabilization

Phase III (full adaptation)

- functional stability
- absence of complaints
- normalization of chewing function

11. Possible complications

- bedsores of the mucous membrane
- traumatic stomatitis
- violation of fixation
- allergic reactions
- bone tissue atrophy

12. Clinical significance of removable prosthetics

Removable dentures:

- restores chewing function
- improves the patient's quality of life
- prevents deformation of dental arches
- is the basic method of rehabilitation in cases of edentia

13. Conclusion

Removable prosthetics is a crucial area of orthopedic dentistry. It requires a comprehensive approach, including an anatomical understanding of the prosthetic bed, proper design selection, competent planning, and consideration of biomechanical factors. Treatment success depends on the precision of clinical steps and the patient's adaptation to the prosthesis.

Lecture Topic #9: Basics of Fixed Prosthetics (Overview)

1. The purpose of the lecture

To study the principles of fixed prosthetics, types of fixed orthopedic structures, their biomechanical features, indications and contraindications for use, as well as the basics of treatment planning using crowns, inlays, and bridges.

2. General characteristics of fixed prosthetics

Fixed prosthetics is a branch of orthopedic dentistry aimed at restoring the anatomical form, function, and aesthetics of teeth using structures that are fixed for a long period and cannot be removed by the patient independently.

The main goals of fixed prosthetics:

- restoration of the integrity of the dentition
- restoration of chewing function
- restoration of dental and smile aesthetics
- normalization of occlusion
- prevention of tooth displacement and bite deformation

Fixed structures provide the most physiological load distribution, close to natural teeth, which makes them preferable for preserving supporting teeth.

3. Anatomical and functional principles of fixed prosthetics

The success of fixed structures depends on the condition of:

3.1. Abutment teeth

The supporting teeth must provide:

- sufficient stability
- preservation of the periodontium
- adequate crown portion

Basic requirements:

- lack of pronounced mobility
- sufficient root length
- treated root canals if necessary

3.2. Periodontium

The periodontium provides:

- cushioning of chewing load
- tooth stability
- pressure distribution

In case of periodontal diseases it is necessary:

- preliminary treatment
- splinting
- load limitation

3.3. Occlusions

Occlusal relationships determine:

- uniformity of load distribution
- prosthesis stability
- no overloading of the supporting teeth

4. Types of fixed orthopedic structures

4.1. Crowns

A crown is a prosthesis that covers the anatomical crown of a tooth, restoring its shape, function and aesthetics.

Indications:

- destruction of the crown of the tooth by more than 50%
- aesthetic defects
- tooth discoloration
- recovery after endodontic treatment

Types of crowns:

- metal
- metal-ceramic
- ceramic (metal-free)
- zirconium

4.2. Tabs

An inlay is a microprosthesis that restores defects in the hard tissues of a tooth.

Advantages:

- high precision
- durability
- minimally invasive

Indications:

- carious and non-carious defects
- restoration of the chewing surface
- destruction of part of the tooth crown

4.3. Veneers

Thin overlays on the vestibular surface of the teeth.

Indications:

- aesthetic defects
- change in enamel color
- minor shape defects

4.4. Bridge prostheses

A bridge prosthesis is a structure that replaces one or more missing teeth with support from adjacent teeth.

Compound:

- abutment crowns
- intermediate part (pontic)

Indications:

- included defects of the dentition
- presence of supporting teeth
- impossibility of implantation

5. Indications for fixed prosthetics

Fixed structures are used in the following cases:

- partial defects of the dental arches
- destruction of the crown of the tooth
- need for aesthetic correction
- sufficient supporting capacity of teeth
- normal condition of the periodontium

6. Contraindications

Absolute:

- absence of supporting teeth
- severe forms of periodontitis with grade III mobility
- impossibility of isolating the working field

Relative:

- active caries
- poor oral hygiene
- bruxism without correction
- acute inflammatory processes

7. Biomechanics of fixed structures

Fixed dentures function as a single system with supporting teeth.

Basic principles:

- load transfer through the periodontium
- uniform distribution of chewing forces
- maintaining physiological occlusion

7.1. The role of supporting teeth

The supporting teeth perceive:

- vertical loads
- lateral forces
- chewing pressure

If the design is incorrect, the following may occur:

- overload
- loosening of teeth
- periodontal inflammation

7.2. Principle of splinting

In bridge structures, the supporting teeth work as a single block, which:

- increases stability
- reduces the risk of overload
- improves force distribution

8. Stages of fixed prosthetics

8.1 Clinical stages

- diagnostics and planning
- tooth preparation
- taking impressions
- temporary prosthetics
- fitting of the design
- fixation

8.2. Laboratory stages

- model making
- frame modeling
- manufacturing of a prosthesis
- cladding (ceramics, plastic)
- polishing

9. Tooth preparation as a key stage

Preparation is the creation of the optimal shape of a tooth for a future structure.

Basic principles:

- preservation of maximum tissue volume
- formation of retention
- ensuring the strength of the structure
- pulp protection

Errors:

- excessive grinding

- tissue overheating
- violation of anatomical form

10. Possible complications

- tooth hypersensitivity
- inflammation of the pulp
- occlusion violation
- de-cementation of the structure
- overload of supporting teeth

11. Clinical significance of fixed prosthetics

Fixed prosthetics is the most physiological method of dental restoration, providing:

- high functionality
- aesthetic result
- durability of the structure
- occlusion stability

12. Conclusion

Fixed prosthetics occupy a key place in orthopedic dentistry. They require precise planning, expert preparation, and consideration of the biomechanics of the dental system. The success of treatment depends on the correct choice of design and the condition of the supporting teeth.

2.2. Development of practical/seminar/laboratory classes
5th semester
Practical Session #1. Introduction to the Orthopedic Office's Instruments and Materials
1. Objective of the lesson

Learn the organization of an orthopedic office, master the basic tools used by an orthopedic surgeon, and become familiar with the materials used in diagnostics and prosthetics.

2. Educational technologies

• Pre-test• Demonstration of tools and materials
• Working with layouts and a set of tools• Post-test

3. Basic concepts

• orthopedic instruments • orthopedic surgeon’s workplace • impression trays • dental materials • diagnostic instruments • prosthetic structures

4. Lesson content

Orthopedic dentistry requires strict organization of the workplace, since most manipulations are associated with the accuracy of measurements and the reproduction of anatomical structures.

4.1. Organization of the workplace

The workplace includes: • dental unit • instrument table • sterile block • set of diagnostic instruments • set for impressions

4.2. Basic tools

• dental mirror• probe• tweezers• spatulas• impression trays• articulating instruments

4.3. Materials

• alginates • silicones • plaster • waxes • temporary and permanent cements

5. Clinical significance

Proper organization of the office ensures: • diagnostic accuracy • reduction of errors • quality of impressions • patient safety

6. Self-control

• purpose of instruments • types of materials • requirements for the cabinet • classification of instruments

Practical Session #2. Taking Anatomical Impressions on Models. Quality Control

Objective of the lesson

Master the technique of obtaining anatomical impressions and the criteria for their evaluation.

Basic concepts

• anatomical impression• impression material• tray• model negative• impression accuracy

Content

An impression is a negative image of the oral tissues required to obtain a diagnostic model.

1. Types of materials

• alginate• silicone• thermoplastic

2. Stages of taking an impression

• selection of a spoon• preparation of material
• insertion into a tray • introduction into the oral cavity (or onto a model) • removal
• quality assessment

3. Quality requirements

• no bubbles • clear relief • no deformations • full display of the dentition

Clinical significance

The impression is the basis for diagnostics and modeling of the prosthesis.

Practical Session #3. Bite Registration. Determining the Central Relation of the Jaws

1. Objective of the lesson

Study the theoretical and practical principles of bite registration, master methods for determining the central relationship of the jaws, and learn to analyze occlusal relationships on models.

2. Theoretical justification

Occlusion is a key functional state of the dental system, ensuring: • uniform distribution of the chewing load • stability of the temporomandibular joint (TMJ) • normal functioning of the masticatory muscles • preservation of the anatomical shape of the dentition

Any violation of occlusion leads to a chain of pathological changes: → periodontal overload → muscle imbalance → TMJ dysfunction → accelerated tooth loss

3. Basic concepts

3.1 Central relation of the jaws

This is the physiological position of the lower jaw, in which the articular heads are in the most stable, posterior-superior position in the glenoid fossae, regardless of the position of the teeth.

3.2 Central occlusion

Maximum multiple contact of dental arches.

3.3 Occlusal height

The vertical distance between the upper and lower jaws in the position of central occlusion.

4. Methods for determining the central ratio

4.1 Clinical methods

• two-handed method (Dawson method)• swallowing method• muscle relaxation method• use of wax bases

4.2 Laboratory methods

• articulators• face bows• plaster casting of models

5. Bite registration technique

Stages:

1. production of wax bases
2. formation of occlusal ridges
3. determination of bite height
4. central relation fixation
5. transfer to the articulator

6. Clinical errors

The most common mistakes: • overbite
• displacement of the lower jaw • incorrect fixation of the rollers • lack of muscle relaxation

Consequences: • pain in the TMJ • chewing disorder • rejection of the prosthesis

7. Clinical significance

Registration of the bite is one of the most critical stages of orthopedic treatment, since it determines: • the accuracy of the prosthesis • chewing function • patient adaptation • aesthetics of the lower third of the face

8. Self-control

• difference between CS and CO• methods of bite registration• registration errors• the importance of the articulator

Practical Lesson #4. Diagnosis of Dental Defects. Classification

1. Objective of the lesson

To master the classification of dental defects and learn to conduct clinical diagnostics.

2. Theoretical part

Dental defects are the absence of one or more teeth, leading to disruption of: • chewing • speech • aesthetics • occlusion

3. Kennedy Classification

1st grade

Bilateral terminal defects → lateral teeth are missing on both sides

Class II

Unilateral end defect

Class III

Included defect (there are supports on both sides)

4th grade

Frontal defect (anterior section)

4. Clinical diagnostics

Includes: • examination of dental arches • periodontal assessment • occlusion analysis • assessment of antagonists • identification of secondary deformations

5. Consequences of defects

Without treatment, the following may occur: • tilting of teeth • supraeruption of antagonists • periodontal overload • decrease in bite height • TMJ dysfunction

6. Preliminary planning

Based on the diagnosis, the following is selected: • removable denture • bridge prosthesis • implantation • combined treatment

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7. Clinical significance

The Kennedy classification is the basis for selecting prosthesis design and predicting loads.

8. Self-control

• types of defects • complications • principle of choosing a prosthesis

Practical Lesson #5. Selecting a Preliminary Orthopedic Structure
1. Objective of the lesson

Learn to choose the optimal type of orthopedic structure based on the clinical situation.

2. Theoretical basis

The choice of design depends on: • the number of defects • the condition of the supporting teeth • the condition of the periodontium • the patient’s age • hygiene • financial factors

3. Types of structures
3.1 Non-removable

• crowns• bridges• inlays

3.2 Removable

• partial• full• clasp

3.3 Conditionally removable

• on implants

4. Principles of selection

• biomechanical• functional• aesthetic• biological

5. Clinical situations
Situation 1

Included defect → bridge prosthesis

Situation 2

Terminal defect → removable denture

Situation 3

Complete edentia → complete removable denture

6. Selection errors

• ignoring the periodontium• overloading the supporting teeth• incorrect assessment of the defect

7. Clinical significance

The correct choice of design determines: • the durability of the prosthesis • patient comfort • prevention of complications

8. Self-control

• indications for removable dentures • indications for bridges • limitations

Practical Session #6. Preparing the Patient for Orthopedic Treatment (Theory + Algorithms)
1. Objective of the lesson

To study the stages of patient preparation for orthopedic treatment, to form an understanding of oral cavity sanitation as a mandatory stage of prosthetics.

2. Theoretical part

Preparing a patient for orthopedic treatment is a set of measures aimed at creating optimal conditions for prosthetics and subsequent adaptation.

Without preliminary preparation it is impossible to ensure: • durability of the prosthesis • stability of occlusion • prevention of complications • correct distribution of the load

3. Main stages of preparation

3.1 Oral cavity sanitation

• treatment of caries • removal of decayed teeth • treatment of pulpitis and periodontitis • professional hygiene

3.2 Periodontal preparation

• treatment of gingivitis and periodontitis • curettage • splinting of loose teeth

3.3 Orthodontic preparation

• elimination of tilts• bite correction if necessary

3.4 Surgical preparation

• root removal• correction of the alveolar process

4. Clinical significance

Poor preparation leads to: • inflammation under the prosthesis • loosening of supporting teeth • impaired adaptation • early failure of the structure

5. Patient preparation algorithm

1. initial examination
2. diagnostics
3. rehabilitation
4. periodontal stabilization
5. re-evaluation
6. choice of design

6. Self-control

• stages of sanitation • the role of periodontium • preparation errors

Practical Lesson #7. Tooth Preparation (Phantom Course)
Objective of the lesson

Master the basic principles of preparing teeth for orthopedic structures.

Theoretical basis

Preparation is the controlled removal of hard dental tissue to create conditions for fixing the prosthesis.

Basic principles

• preservation of anatomy • minimal invasion • creation of retention • formation of a ledge

Tools

• turbine handpiece• diamond burs• carborundum heads• water cooling

Errors

• overheating of the tooth • excessive tissue removal • lack of a ledge • pulp injury

Clinical significance

The quality of preparation determines: • crown fixation • tightness • service life

Practical Session #8. Crown Preparation (Advanced Phantom Practice)
Objective of the lesson

Practice preparation techniques for different types of crowns.

Types of crowns

• metal• metal-ceramic• ceramic

Features of preparation
Metal ceramics

• uniform tissue removal • pronounced ledge • anatomical shape

Ceramics

• more gentle preparation• increased precision

Errors

• lack of parallelism • excessive tissue removal • incorrect shoulder

Practical Lesson #9. Obtaining and Analyzing Diagnostic Models

1. Objective of the lesson

Master the full cycle of obtaining diagnostic models of jaws, learn to conduct their clinical and laboratory analysis for planning orthopedic treatment.

2. Theoretical justification

A diagnostic model is a plaster cast of the dental arches and surrounding tissues, obtained from an impression. It is a key document in orthopedic dentistry, as it allows for the study of dental anatomy outside the oral cavity.

The model is used for: • analysis of dental arch defects • assessment of occlusion • planning of prosthetics • manufacturing of structures • patient training

3. Stages of obtaining diagnostic models

3.1 Obtaining an impression

The following are used: • alginate masses (diagnostic) • silicone materials (precise impressions)

Requirements: • no deformation • clear display of teeth • complete coverage of transitional folds

3.2 Casting the model

• preparation of plaster• pouring the impression
• vibration to remove bubbles• formation of the model base

3.3 Model processing

• removal of excess plaster• marking• quality assessment

4. Analysis of the diagnostic model

4.1 Evaluation of dental arches

• arch shape• presence of defects• inclination of teeth• supra-eruption

4.2 Occlusion assessment

• central contacts• lateral displacements• supracontacts

4.3 Periodontal assessment (indirectly)

• signs of overload• pathological abrasion

5. Clinical significance

The diagnostic model allows us to identify: • hidden defects • secondary deformations • occlusion disorders • errors in previous treatment

6. Typical mistakes

• bubbles in the model • shrinkage of plaster • deformation of the impression • incorrect plastering

7. Conclusion

The quality of the model directly determines the accuracy of orthopedic treatment.

Practical Lesson #10: Working with Occlusion on Models
1. Objective of the lesson

To study methods of analyzing occlusal contacts on diagnostic models using articulators.

2. Theoretical part

Occlusion is a dynamic system of contacts between the teeth of the upper and lower jaws. Its disruption leads to functional and morphological changes in the entire dental system.

3. Types of occlusion
3.1 Central occlusion

Maximum closure of dental arches.

3.2 Anterior occlusion

Forward movement of the lower jaw.

3.3 Lateral occlusion

Movement right and left.

4. Analysis methods
4.1 Visual analysis

• evaluation of contacts• determination of asymmetry

4.2 Using the articulator

• fixation of models• reproduction of jaw movements

4.3 Occlusive paper

• identification of supercontacts

5. Pathological changes in occlusion

• traumatic occlusion• premature contacts• functional overload

6. Clinical significance

Malocclusion is one of the main causes of: • TMJ pain • tooth mobility • enamel wear

7. Errors

• incorrect installation of models• lack of central relation• ignoring lateral movements

Practical Lesson #11. Removable Dentures: Design and Elements
1. Objective of the lesson

To study the structure and functional elements of removable dentures.

2. Theoretical part

Removable dentures are orthopedic structures that the patient can remove from the oral cavity independently.

3. Basic elements
3.1 Basis

• base of the prosthesis• distributes the load

3.2 Artificial teeth

• plastic• ceramic

3.3 Fixing elements

• clasps• attachments

4. Types of removable dentures

• partial• full• clasp

5. Biomechanics

• transfer of load to the mucous membrane • support on teeth • stabilization in the oral cavity

6. Clinical problems

• chafing• poor fixation• speech impairment

7. Meaning

Removable dentures are the main method of restoration for significant defects.

Practical Lesson #12. Stages of Removable Denture Manufacturing (Theoretical Modeling)

1. Objective of the lesson

To develop in students a holistic understanding of the laboratory and clinical cycle of manufacturing removable dentures and the interrelationships between the stages.

2. Theoretical justification

Removable dentures are a multi-stage process involving an orthodontist and a dental technician. An error at any stage leads to functional and anatomical failure of the structure.

A removable denture should provide: • restoration of chewing function • normalization of speech • aesthetic rehabilitation • uniform distribution of the load on the mucous membrane and supporting teeth

3. Main stages of production

3.1 Clinical stage I

• initial examination • diagnostics of defects • choice of design • taking anatomical impressions

3.2 Laboratory Stage I

• obtaining diagnostic models • making a custom tray • preparing wax bases

3.3 Clinical stage II

• functional impressions• bite registration• determination of centric relation

3.4 Laboratory stage II

• installation of artificial teeth • modeling of wax base • checking occlusion on an articulator

3.5 Clinical stage III

• fitting of wax construction• occlusion correction• aesthetic assessment

3.6 Laboratory stage III

• polymerization of acrylic plastic• grinding and polishing

3.7 Clinical stage IV

• delivery of the prosthesis • correction if necessary • patient adaptation

4. Biomechanical principles

• support on the mucous membrane • redistribution of chewing load • stabilization due to clasps • prevention of displacement of the prosthesis

5. Manufacturing errors

• overbite • incorrect teeth positioning • base shrinkage • insufficient fixation • violation of occlusal contacts

6. Clinical significance

The quality of the prosthesis depends on the coordination of all stages and the precision of interaction between the doctor and the technician.

Practical Lesson #13. Fixed Dentures: Crowns and Bridges

1. Objective of the lesson

To study the design, indications and biomechanical features of fixed dentures.

2. Theoretical part

Fixed structures are fixed to teeth or implants and are not removed by the patient. They provide maximum functional stability.

3. Types of crowns

3.1 Metal

• high strength• low aesthetics

3.2 Metal-ceramic

• balance of strength and aesthetics

3.3 Ceramic

• high aesthetics• lower strength

3.4 Zirconium

• modern standard• high biocompatibility

4. Bridge prostheses

Consists of: • supporting crowns • intermediate part (pontrik)

5. Biomechanics

• support on teeth• transfer of load through the cement layer• distribution of chewing pressure

6. Indications

• destruction of the tooth crown• included defects• restoration of aesthetics

7. Errors

• overloading of supports • incorrect span length • insufficient preparation

8. Clinical significance

Fixed structures provide maximum comfort, but require strict adherence to biomechanical principles.

Practical Session #14: CAD/CAM Technologies in Orthopedic Dentistry

1. Objective of the lesson

To introduce students to digital technologies for modeling and manufacturing orthopedic structures.

2. Theoretical basis

CAD/CAM is a system for computer-aided design and automated production of prostheses.

3. Stages of technology

3.1 CAD (Computer Aided Design)

• digital scanning• design modeling• shape correction

3.2 CAM (Computer Aided Manufacturing)

• milling• 3D printing• sintering of materials

4. Advantages

• high accuracy • reduction of time • minimization of human factor

5. Limitations

• high cost• hardware requirement• software dependence

6. Clinical significance

CAD/CAM improves predictability of orthopedic treatment.

Practical Lesson #15. Clinical Situations: Diagnosis and Planning of Orthopedic Treatment

1. Objective of the lesson

Master the algorithm for clinical analysis of complex dental situations, learn to formulate a preliminary and final orthopedic treatment plan taking into account anatomical and functional disorders, the condition of the dentition, occlusion, and the general condition of the patient.

2. Educational technologies

• Analysis of clinical cases • Work in small groups • Situational modeling • Development of a treatment plan • Discussion of alternative solutions

3. Main provisions of the topic

3.1. Clinical situation as a basis for diagnosis

In orthopedic dentistry, a clinical situation is a set of data:

- condition of the dentition
- degree of defect
- periodontal condition
- type of occlusion
- TMJ function
- general condition of the patient

Each clinical case requires an individual approach, since no two patients in orthopedics are alike.

3.2. Stages of clinical situation analysis

1. Collection of initial data

- patient complaints
- medical history
- clinical examination
- analysis of diagnostic models

2. Formulating the diagnosis

- type of dental defect
- degree of tooth decay
- functional disorders

3. Problem Definition

- functional
- aesthetic
- biomechanical

4. Building a treatment plan

- choice of design
- the need for oral cavity preparation
- stages of treatment

3.3. Main clinical scenarios

Scenario 1: Partial edentia

- inclusion and end defects
- the need to evaluate the supporting teeth
- choosing between a bridge and a removable denture

Scenario 2: Multiple Defects

- combined structures
- distribution of chewing load
- the need for splinting

Scenario 3: Complete edentia

- choosing a complete removable structure
- alveolar bone assessment
- definition of central occlusion

3.4 Principles of treatment planning

• minimal invasiveness • functional efficiency • biocompatibility • durability of the structure • aesthetic rehabilitation

3.5. Planning errors

- ignoring the condition of the periodontium
- incorrect assessment of supporting teeth
- choosing an overly complex design
- lack of occlusion consideration
- ignoring the patient's age

4. Practical part

Students must:

- analyze a clinical case
- determine the type of defect
- choose an orthopedic design
- justify the choice
- suggest an alternative

5. Control questions

- What does a clinical situation include?
- What are the stages of treatment planning?
- What are the most common mistakes?
- How does occlusion influence the choice of design?

6. Self-control

The student should be able to:

- analyze a clinical case
- form a diagnosis
- propose a treatment plan
- evaluate alternative methods

Practical Session #16. Analysis of Typical Errors in Diagnosis and Orthopedic Treatment Planning

1. Objective of the lesson

Learn to identify and analyze errors that occur during the stages of diagnosis, planning, and selection of orthopedic structures.

2. Main types of errors

2.1. Diagnostic errors

- incomplete anamnesis
- ignoring functional disorders
- lack of TMJ assessment
- incorrect classification of defect

2.2. Tactical errors

- incorrect choice of design

- premature prosthetics
- lack of oral preparation

2.3. Technical errors

- incorrect impression
- errors in determining the bite
- inaccurate fixation of models

3. Clinical consequences of errors

- overload of supporting teeth
- de-cementation of structures
- occlusion violation
- TMJ pain
- aesthetic defects
- decreased patient adaptation

4. Analysis of typical clinical errors

Mistake 1: Lack of periodontal analysis

→ leads to loosening of supporting teeth

Mistake 2: Ignoring Central Occlusion

→ malocclusion after prosthetics

Mistake 3: Choosing the wrong bridge

→ overload of supporting teeth

5. Error prevention

- complete clinical examination
- analysis of diagnostic models
- using an articulator
- interdisciplinary approach
- control of work stages

6. Practical part

Students:

- analyze clinical errors

- find reasons
- propose corrective actions

7. Control questions

- What errors are the most dangerous?
- How to prevent them?
- Why is TMJ diagnosis important?

Practical Lesson #17. Testing Practical Skills (Impression, Bite, Diagnostics)

1. Objective of the lesson

To assess the level of practical skills of students in the main stages of orthopedic diagnostics.

2. Controlled skills

2.1. Taking impressions

- choosing a spoon
- application of material
- quality assessment

2.2. Bite registration

- definition of central relation
- occlusion fixation

2.3. Diagnostics

- analysis of dental defects
- assessment of abutment teeth
- definition of the type of construction

3. Evaluation criteria

- accuracy of execution
- compliance with the algorithm
- clinical thinking
- justification of decisions
- accuracy of work

4. Typical mistakes students make

- incorrect choice of impression material

- inaccurate bite registration
- ignoring anatomy
- lack of logical analysis

5. Practical part

- making an impression
- bite registration
- clinical case analysis

6. Control questions

- How to evaluate the quality of a print?
- What is central ratio?
- What are the most common mistakes?

Practical Session #18. Final Session: Testing and Clinical Tasks

1. Objective of the lesson

Conduct a final assessment of knowledge and practical skills in the discipline "Propaedeutics of Orthopedic Dentistry".

2. Lesson structure

2.1. Theoretical block

- testing
- questions about anatomy
- questions about diagnostics

2.2. Practical block

- clinical tasks
- model analysis
- choice of design

3. Clinical tasks

The student must:

- make a preliminary diagnosis
- determine the type of defect
- propose a treatment plan
- justify the choice of design

4. Key competencies

- clinical thinking
- diagnostics of defects
- treatment planning
- occlusion analysis
- working with models

5. Final evaluation criteria

- theoretical training
- practical skills
- logic of clinical thinking
- correctness of decisions

6. Conclusion

The final lesson allows us to assess the student's readiness for independent clinical analysis and the transition to the study of clinical orthopedics.

3. Methodological recommendations/instructions for students

3.1. Methodological recommendations for students on studying the discipline

The study of the theoretical part of the disciplines is intended not only to deepen and consolidate the knowledge acquired in the classroom, but also to promote the development of students' creative skills, initiative, and time management.

The material taken during lectures must be regularly reviewed and supplemented with information from other sources of literature, presented not only in the course program, but also in periodicals.

When studying a discipline, you must first read the recommended literature on each topic and make a short summary.

Key concepts, terms, and information that require memorization and are fundamental to mastering subsequent course topics. To expand your knowledge of the subject, we recommend using online resources; conducting searches in various systems and using materials from websites recommended by the instructor.

Each student keeps a workbook,the design of which must meet the requirements,the main ones are the following:

– the title page indicates the subject,well,group,last name,Name,student's patronymic;

- each work is numbered in accordance with the methodological instructions,indicate the date of completion of the work;
- write down the title of the work in full,purpose and principle of the method,briefly characterize the progress of the task and the object of the study;
- If necessary, provide a graphic image;The results of the tasks are presented in the form of graphic images with mandatory captions to them,as well as tables or describe verbally;
- at the end of each work, a conclusion or inference is made,which are discussed when summing up the lesson.

All initial notes must be made in a notebook as you complete the tasks.

To check the student's academic activity and the quality of his or her work, the workbook is periodically checked by the teacher.

The material taken during lectures must be regularly reviewed and supplemented with information from other sources of literature, presented not only in the course program, but also in periodicals.

When studying a course, you should first read the recommended literature for each topic and compile a brief summary of the key concepts, terms, and information that must be memorized and that is fundamental to mastering subsequent topics in the course. To expand your knowledge of the course, it is recommended to use online resources; conduct searches in various systems and use materials from websites recommended by the instructor.

3.2. Methodological recommendations for the implementation of practical/seminar classes, laboratory work.

*Practical classes*These are conducted after lectures and serve as explanatory, summarizing, and reinforcing activities. They can be held not only in the classroom but also in the simulation center.

During practical classes, students absorb and comprehend new learning material. Practical classes are systematic, regularly following each lecture or two or three lectures.

Practical classes are carried out according to the schedule of the educational process and independent work of students in disciplines.

When preparing for practical classes, it is necessary to study the methodological recommendations for its implementation in advance..Pay attention to the purpose of the lesson,on the main questions to prepare for the lesson,on the content of the lesson topic.

Before each practical lesson, students review the seminar plan, including a list of topics and questions, a bibliography, and homework assignments for the material covered. The following seminar preparation plan is recommended:

1. Work through lecture notes;
2. Read the main and additional literature recommended for the section being studied;
3. Answer the questions in the seminar plan;
4. Study the topic and select literature for writing essays, reports, etc.;

3.3. Methodological recommendations for completing independent work.

When studying the discipline "Orthopedic Dentistry", the following types of independent work of students are used:

– study of theoretical material using lecture notes and recommended teaching aids, educational dummies, educational literature, and reference sources;

– independent study of some theoretical issues not covered in lectures, with writing papers and preparing presentations;

WITHStudents are invited to read and analyze monographs and scientific articles on issues in obstetrics and gynecology. The results of their work with these texts are discussed during practical classes.

To develop independent work skills, students complete assignments by independently consulting textbooks, reference books, and scientific and methodological literature. Assignment completion is assessed both during practical classes through oral presentations and group discussions, and through written independent work.

Section 1.4.2 provides topics for independent study of theoretical material, assignment for each topic, deadline for submitting work, educational literature.

Section 1.4.3. contains topics for writing an abstract.

Section 2.2 provides assignments, problems, and exercises for each course topic. A list of necessary literature for independent study is provided.

Independent work helps students develop essential skills such as choosing and solving a given problem, collecting and analyzing published data, and the ability to identify key points and draw informed conclusions.

3.4. Guidelines for completing papers, reports, and essays

Abstract -a written summary of the content of a scientific paper on the given topic.This is an independent research work.,where the student reveals the essence of the problem being studied with elements of analysis on the topic of the abstract.

Brings together different points of view,as well as personal views on the issues of the topic of the paper.The content of the abstract should be logical,presentation of the material to wear
problematic and thematic nature.

Requirements for the abstract:

The volume of the abstract may vary within the range9-10printed pages.
Main sections:table of contents(plan),introduction,main content,conclusion,list of references.
The text of the abstract should contain the following sections:
-title page with indication:names of the university,departments,essay topics,Full name of the author and full name of the teacher

- introduction,relevance of the topic.
- main section.
- conclusion(analysis of literature search results);conclusions.
- the list of literary sources must have at least10bibliographic titles,including network resources.

*The text part of the abstract is formatted*on a sheet of the following format:

- top indent – 2 cm; left indent – 3 cm; right indent – 1.5 cm; bottom indent – 2.5 cm;
- text font: Times New Roman, font height – 14, space – 1.5;
- Page numbers are at the bottom of the sheet. The first page is not numbered.

The abstract must be written competently and in a respectful manner. References to references, including periodicals from the past five years, must be included.
Abstract evaluation criteria:

- relevance of the research topic;
- compliance of the content with the topic;
- depth of material processing;
- the correctness and completeness of the development of the questions posed;
- the significance of the conclusions for further practical activities;
- correctness and completeness of use of literature;
- compliance of the abstract design with the standard;
- the quality of the message and answers to questions during the defense of the abstract.

3.5. Guidelines for preparation for final certification.

Final certification in the form of a test in the discipline "Orthopedic Dentistry"

is carried out based on the results of attending classes, current and midterm (modular) control.

In this regard, to successfully pass the final assessment, it is recommended that the student attend all classes and actively participate in classroom activities and complete independent work.

All modules are conducted according to a modular schedule. The tests themselves have three sections: an exam, a module, and a practice mode. The exam and module are available as scheduled, while the practice mode is available on the online learning platform, where students can practice taking tests online.

Each student has their own ID number and password to access this platform. Students can log in from a computer, tablet, or phone, select a course, and view relevant course materials, lecture notes (in PPT or PDF format), and complete a quiz (MCQ) for each topic.

3.6. Methodological recommendations for student research work.

The purpose of research is to develop students' intellectual abilities by studying the algorithm of scientific research and acquiring initial experience in carrying out a research project using the educational material of their chosen specialty.

The main objectives and results of the research work are:

- mastering scientific methods of cognition and deepening the theoretical knowledge of students in their specialty;
- mastery of modern methods of scientific research;
- development of students' practical skills in independently searching for scientific and technical information, conducting theoretical and/or experimental work;
- students acquire the ability to analyze the results of conducted research, formulate conclusions and recommendations;
- developing in students the ability for independent, creative, active work to continuously update and enrich their scientific knowledge.

When completing research work, a student must master the following basic steps:

- independent search for information on a given topic;
- selection of essential information necessary for full coverage of the problem being studied, separation of this information from secondary information (within the framework of a given topic);
- analysis and synthesis of knowledge and research on the problem;
- generalization and classification of information on research problems;

- logical and consistent disclosure of the topic;
- generalization of psychological knowledge on the problem and formulation of conclusions from a literature review of the material;
- stylistically correct presentation of scientific thought of the abstract type;
- competent design of scientific abstract text;
- correct presentation of scientific work;
-creation of a glossary of terminology;
- role-playing games and trainings on a given topic, discussions, situational tasks.

For research work, a senior student must do the following:
- write an abstract using general scientific and special methods,
- participate in scientific projects;
- prepare and deliver a report or presentation on a given topic at conferences and round tables;
- study and analyze general concepts, programs, clinical protocols on a given topic;
- write a patient's medical history with laboratory and instrumental examination.

In order to conduct research work, it is recommended for 10th semester students:
- participate in a scientific project, scientific conference;
- manage a planned or standardized patient under the guidance of a teacher;
- present a prepared report at a conference;
- study and analyze programs and clinical protocols on a given topic.

4. Glossary

- **Abutment**— an element that connects a dental implant to a crown or other prosthesis.
- **Abscess**— limited purulent inflammation, accompanied by the formation of a cavity filled with pus.
- **Agaliya**- decreased or complete absence of salivation.
- **Adaptation to treatment**— the process of acclimating a child to dental procedures, often using behavioral techniques.
- **Prosthesis adaptation**— the process of the patient getting used to wearing a prosthesis, including functional and psychological aspects.
- **Adhesion**— the ability of materials to firmly adhere to dental tissues.

- **Actinic cheilitis**— chronic inflammation of the lips caused by prolonged sun exposure; often seen in the elderly.
- **Alveolitis**- inflammation of the tooth socket after its extraction (often called "dry socket").
- **Anatomy of a baby tooth**— structural features of a temporary tooth: thin enamel, large pulp chamber, short roots.
- **Anesthesia**— anesthesia. In surgical dentistry, conduction, infiltration, topical, and intraligamentary anesthesia are most commonly used.
- **Malocclusion**— deviation from physiological occlusion; can develop from an early age.
- **Tooth apathy**— the absence of a tooth's response to thermal or electrical stimuli often indicates pulp necrosis.
- **Atypical removal**— complex tooth extraction requiring root cutting, flap cutting, trepanation, etc.
- **Alveolar ridge atrophy**— a decrease in the volume of jaw bone tissue after tooth loss; a common problem in the elderly.
- **Gum atrophy**— a decrease in the volume of the gums, often accompanied by exposure of the roots of the teeth.
- **Beam prosthesis**— a prosthesis fixed on implants or teeth using a beam system.
- **Biopsy**— taking a tissue sample for histological examination.
- **Biopsy**— taking a tissue sample for histological examination (for example, suspicious formations on the mucous membrane).
- **Biocompatibility of prostheses**— the ability of materials not to cause allergies, toxic or irritating effects in weakened patients.
- **Paget's disease**— a chronic bone disease that can affect the jaws and complicate dental treatment.
- **Bruxism**- involuntary grinding or clenching of teeth, often during sleep.

- **Bruxism in children**— grinding teeth in sleep may be associated with emotional stress or the development of a bite.
- **Tubercular anesthesia**— a type of infiltration anesthesia used in the upper jaw.
- **Baby bottle caries**- early childhood caries, which occurs due to prolonged contact of teeth with formula, juices or breast milk at night.
- **Clasp denture**— a removable denture with a metal arch base that evenly distributes the chewing load.
- **Vestibuloplasty**— surgical correction of the vestibule of the oral cavity (often performed during prosthetics).
- **Vestibuloplasty**— surgical deepening of the oral vestibule, often necessary before prosthetics in cases of severe tissue atrophy.
- **Temporomandibular joint (TMJ)**— the joint between the lower jaw and the skull, often involved in trauma or inflammatory processes.
- **Vital pulpotomy**— partial removal of the pulp while maintaining its viability.
- **Susceptibility to infections**— decreased local immunity of the oral mucosa in the elderly.
- **Tooth restoration**— the process of restoring the shape, function and aesthetics of a damaged tooth (for example, with inlays, crowns).
- **Temporary crown**— a temporary covering of the prepared tooth, protecting it until the permanent structure is installed.
- **Temporary filling**— a material that temporarily fills a tooth cavity until a permanent filling is placed.
- **Temporary filling**— a filling material placed for a short period of time, often in anticipation of permanent treatment.
- **Temporary (baby) bite**— a full set of baby teeth, usually formed by 2.5–3 years.
- **Hematoma**— accumulation of blood in soft tissues after injury or surgery.

- **Hemisection**— removal of one of the roots of a multi-rooted tooth with part of the crown.
- **Fissure sealing**— a preventive procedure: filling fissures (grooves) on chewing teeth to protect against caries.
- **Sleeve crown**— a one-piece cast metal crown that covers the entire tooth.
- **Gingivitis**- inflammation of the gums without disruption of the gingival attachment.
- **Enamel hypoplasia**— a congenital or acquired disorder of enamel formation, often manifested in the form of spots, grooves or chips.
- **Hyposalivation**— decreased salivation, especially when taking medications (antidepressants, antihypertensive drugs, etc.).
- **Glossalgia**— a burning pain or discomfort in the tongue, often without apparent cause, often associated with psychosomatics or vitamin deficiency.
- **Gnathology**— the science of the function of the masticatory apparatus, especially the temporomandibular joint (TMJ).
- **Granuloma**— a chronic inflammatory focus at the apex of the tooth root, surrounded by connective tissue.
- **Cyst decompression**— a surgical method of reducing the size of a cyst while preserving teeth.
- **Dementia**- cognitive impairment that complicates oral hygiene and treatment.
- **Dental implants**— artificial roots implanted into the jawbone to fix dentures.
- **Dentine**— hard tissue of the tooth under the enamel, the main mass of the crown and root.
- **Depophoresis**— a method of treating root canals using electric current and medications.
- **Gums in children**— the mucous membrane covering the alveolar process in children is looser and prone to swelling and inflammation.

- **Dental defect**— absence of one or more teeth, subject to orthopedic treatment.
- **Dissection**- tissue dissection.
- **Dysphagia**- difficulty swallowing, often requires a special approach when fitting prosthetics.
- **Dysfunction of the masticatory muscles**— dysfunction of the muscles involved in chewing can manifest itself as clicking, pain, and asymmetry.
- **Chewing trauma**- chronic damage to the mucous membrane due to biting, nipping, or an uncomfortable prosthesis.
- **Chewing efficiency**— the patient's ability to fully chew food with a prosthesis.
- **Burning mouth syndrome**- a burning or tingling sensation, more often in elderly women, in the absence of visible pathology.
- **Dystopic tooth**- a tooth that has erupted in an incorrect position (for example, outside the dental arch).
- **Erupting tooth**— a tooth going through the eruption stage often causes discomfort, salivation, and capriciousness.
- **Impacted tooth**— a tooth that has not fully erupted due to anatomical or pathological reasons (often wisdom teeth).
- **Dental formula of children**— children have 20 baby teeth (temporary bite).
- **Tartar**- mineralized dental plaque.
- **Tartar**— often develops faster due to changes in the composition of saliva and poor hygiene.
- **Dental bridge**— a fixed structure that replaces missing teeth by supporting them on adjacent teeth.
- **Dental plaque**— soft plaque on teeth containing bacteria and food debris, a precursor to tartar.

- **Denture**— an orthopedic structure that restores partially or completely lost teeth.
- **Denture**— the primary means of restoring dental health in the elderly; they can be full or partial, removable or fixed.
- **Game adaptation**— a method of psychologically preparing a child for treatment through games, stories, and demonstrations.
- **Immediate prosthesis**— a temporary prosthesis installed immediately after tooth extraction.
- **Immunosenescence**- age-related decrease in immune protection, which increases the risk of inflammation in the oral cavity.
- **Dental implantation**— installation of an artificial titanium root (implant) in the jaw for subsequent prosthetics.
- **Caries indexing**— quantitative assessment of the prevalence and intensity of caries in a child (for example, the KPU index).
- **Personal hygiene**— adaptation of teeth cleaning methods to the patient's physical and cognitive capabilities.
- **Individual spoon**— a device for taking an accurate impression of the dentition and mucous membrane.
- **Incision**- dissection of soft tissues (for example, when opening an abscess).
- **Canal irrigation**— rinsing the root canal with antiseptic solutions for disinfection.
- **Oral candidiasis**- fungal infection, often observed with xerostomia, wearing dentures or taking antibiotics.
- **Children's mouthguard**— a silicone or plastic overlay on teeth for protection (for example, during bruxism, sports).
- **Caries**— destruction of hard dental tissues under the influence of acids produced by bacteria.

- **Deciduous tooth decay**— destruction of the hard tissues of the baby tooth; develops faster than in adults due to anatomical features.
- **Ceramic crown**— an aesthetic crown made of zirconium dioxide, porcelain or glass ceramics.
- **Cystectomy**— removal of a dental cyst along with the root apex.
- **Clammer**— a metal element of a clasp or partial removable denture that holds it on the supporting teeth.
- **Wedge-shaped defect**— non-carious lesion of the tooth in the neck area, in the form of a wedge-shaped notch.
- **Moller's Ring**- ring-shaped hyperemia of the gums around the erupting tooth.
- **Comprehensive rehabilitation**— restoration of the entire dental system (in case of complete edentia or severe bite deformations).
- **Corticotomy**— removal of the cortical (outer) bone plate to access the lesion.
- **Xerostomia**— a feeling of dry mouth; a common complaint among the elderly, especially when treating chronic diseases.
- **Curettage**— scraping of pathological tissues (for example, granulomas from a socket or periodontal pocket).
- **Mucosal lability**- increased sensitivity of the mucous membrane, leading to irritation upon contact with dentures.
- **Lacunas and fissures**- natural depressions on the surface of the teeth, often requiring sealing in childhood.
- **Treatment under sedation**- treatment under drug-induced sleep/sedation in anxious or young children.
- **Ligature**— a thread or wire used to tie off blood vessels or fix tissues.
- **Lignin**— a natural component used in some dental materials that is well tolerated by elderly patients.
- **Cast inlay**— a microprosthesis made of metal or ceramic that replaces the damaged part of the tooth.

- **Flap surgery**— a surgical procedure involving the separation of a mucoperiosteal flap (for example, during root apex resection).
- **Prosthesis play**- unwanted mobility of the orthopedic structure.
- **Masticatory dysfunction**— disruption of chewing function due to loss of teeth, muscle weakness or malocclusion.
- **Medicinal treatment of canals**- introduction of medications into the root canal to destroy the infection.
- **Mesial bite**— a form of malocclusion in which the lower incisors overlap the upper ones.
- **Modeling**— creation of a wax or digital model of the future prosthesis.
- **Milk tooth**— a temporary tooth that erupts in childhood and is replaced by a permanent one.
- **Bridge prosthesis**— a structure made of several crowns, which forms a "bridge" to cover the defect of the dental arch.
- **Mucocele**— a cyst of the minor salivary glands, most often on the lower lip, may require removal.
- **Malocclusion**- age-related changes in bite due to tooth loss, abrasion and atrophy of the jaws.
- **Malocclusion**- incorrect closure of the teeth of the upper and lower jaws.
- **Disruption of eruption**- deviation from the normal timing or order of teeth appearance.
- **Hereditary dental anomalies**— genetic disorders of the number, shape or structure of teeth (e.g., adentia, microdontia).
- **Neurinoma**- a benign tumor originating from the nerve sheaths.
- **Neurolysis**- surgical release of the nerve from compressing tissues.
- **Nylon prosthesis**— a flexible removable denture made of soft polymer, more comfortable, but less durable.

- **Trigeminal neuropathy**— may manifest as pain in the face, including in the oral cavity; requires careful dental intervention.
- **Pulp necrosis**— death of the pulp tissue (nerve) of the tooth.
- **Fixed prosthesis**— a structure that is permanently fixed in the oral cavity (for example, crowns, bridges, implants).
- **Reverse bite**— pathological position of the incisors: the lower ones overlap the upper ones (similar to a mesial bite).
- **Obturation of the canal**- filling the root canal with filling material after its processing.
- **Odontogenic infection**- an infection arising from dental tissues or adjacent structures.
- **Odontogenic infection**— an infection originating from a tooth or its periodontal tissues, often leading to abscesses and phlegmons.
- **Occlusal pad**— an orthopedic device for correcting bite or protecting teeth from bruxism.
- **Occlusion**— contact between the teeth of the upper and lower jaws when closing.
- **Orthodontic observation**— regular assessment of the development of the child's bite, starting from 5–6 years of age.
- **Orthopedic bite correction**— restoration of the correct bite with the help of dentures.
- **Orthopedic treatment**— restoration of teeth with prostheses taking into account the individual characteristics of tissue aging.
- **Osteoporosis**— a decrease in bone density, which affects the condition of the jaws and the stability of dentures.
- **Osteotomy**- dissection of bone tissue.
- **Periodontal disease/periodontitis**— chronic inflammatory diseases of the gums and surrounding tooth tissues, a common problem in the elderly.

- **Periodontitis**- inflammation of the tissues surrounding the tooth root.
- **Perioprosthesis**— the condition of the tissues around orthopedic structures (for example, gums and bone near implants).
- **Periostotomy**- dissection of the periosteum.
- **Frenuloplasty**— correction of the frenulum of the lip or tongue that interferes with normal function or prosthetics.
- **Complete removable denture**— the main remedy for complete edentia, requires regular monitoring and correction.
- **Complete removable denture**— a prosthesis that replaces all the teeth on one jaw.
- **Permanent bite**— formed after 12–13 years, includes 28 permanent teeth (excluding wisdom teeth).
- **Dissection**— turning a tooth for a crown or inlay.
- **Pulpitis**- inflammation of the pulp (nerve) of the tooth.
- **Pulpitis of a baby tooth**- inflammation of the pulp, treated taking into account the anatomy and the need to preserve the tooth until replacement.
- **Early caries**- caries that develops in children under 3 years of age, often on the front teeth.
- **Root apex resection**— removal of the apex of the tooth root containing the site of inflammation.
- **Alveolar ridge resorption**- bone loss after tooth extraction, especially pronounced in the elderly.
- **Prosthesis repair**— restoration of damaged orthopedic structure.
- **Tooth restoration**— restoration of the shape and function of a damaged tooth (for example, with a photopolymer or glass ionomer cement).
- **Retention elements**— parts of the prosthesis that improve its fixation (clasps, buttons, beams, etc.).
- **Retention**— the ability of the prosthesis to be retained in the oral cavity.

- **Tooth retention**- delayed tooth eruption.
- **Gum retraction**- retraction of the gums for accurate impression taking.
- **Gum retraction**- moving the gum edge away from the tooth for better visualization and work.
- **Gum recession**- lowering of the gum level with exposure of the tooth root.
- **Sedation**- introducing the child into a controlled, relaxed state to reduce fear and discomfort.
- **Sedation**- medicinal sedation of the patient during surgical interventions.
- **Senile gingivitis**- inflammation of the gums associated with age-related tissue changes and hygiene problems.
- **Sensitization of dentin**- increased sensitivity of the tooth when irritated.
- **Sensory impairments**— decreased taste, smell, and tactile sensitivity, affecting the patient's quality of life.
- **Sinus lift**— surgical lifting of the maxillary sinus floor to create bone volume for the implant.
- **Scanning (intraoral)**— obtaining a digital impression using a scanner, without traditional masses.
- **Mucosal-supporting prosthesis**— a structure supported by the gum and alveolar process.
- **Changing teeth**— the physiological process of replacing baby teeth with permanent ones, begins at 5–7 years of age.
- **Thumb/Pacifier Sucking**— a bad habit that can cause bite deformations.
- **Stomatitis**- an inflammatory disease of the oral mucosa.
- **Denture stomatitis**- inflammation of the mucous membrane under a removable denture, often when worn for a long time without a break.
- **Dental infection**- an infection that originates in the oral cavity and spreads to other areas.

- **Removable denture**— a prosthesis that the patient can remove and put on independently.
- **Tamponade**- insertion of gauze or material into a wound to stop bleeding or promote drainage.
- **Taylor prosthesis**— a type of clasp denture with a minimal base and maximum metal construction.
- **Thermoplastic**— material for flexible dentures (e.g. acrylic, nylon, polyurethane).
- **Topical fluoridation**— local application of fluoride-containing preparations to strengthen enamel and prevent caries.
- **Total edentia**- complete absence of teeth.
- **Tooth trauma in children**— a bruise, fracture, or dislocation of a tooth is a common problem in childhood.
- **Hand tremors**- may interfere with independent oral hygiene and requires special hygiene devices.
- **Bone trepanation**— creating an opening in the bone to access the site of inflammation or the cyst.
- **Trophic disorders**— deterioration of tissue nutrition (for example, gums) due to vascular diseases and aging.
- **Shortened frenulum of the tongue/lip**— an anatomical feature that affects speech, nutrition, and bite. May require plastic surgery.
- **Installing a crown**— the final stage of prosthetics, including fixing the structure to the tooth.
- **Establishing contact with the child**— an important stage of the reception: establishing trust, reducing anxiety.
- **Stability of the prosthesis**— the ability of the structure to remain stable during chewing; it worsens with jaw atrophy.

- **Loss of retention**- weakening of the prosthesis fixation, requiring correction or re-basing.
- **Oral care**- an important part of geriatric care, can be performed by relatives or staff.
- **Fixation of the prosthesis**— a method of attaching a prosthesis to teeth or implants (mechanical, cement, screw).
- **Fixation of the prosthesis**— improving the retention of removable dentures using creams, gels or structural elements.
- **Fissure**— a natural groove on the surface of chewing teeth, often prone to caries.
- **Fissure caries**- caries in the natural grooves of chewing teeth, often develops in children after the eruption of molars.
- **Phlegmon**— diffuse purulent inflammation of soft tissues, without clear boundaries (a dangerous complication).
- **Flux (periostitis)**- inflammation of the periosteum, often with swelling of the face.
- **Flux (periostitis)**- purulent inflammation of the periosteum, often with swelling of the cheek.
- **Milled frame**— a precisely manufactured prosthesis framework (usually made of zirconium or titanium) created using CAD/CAM.
- **Fluorosis**- chronic excessive intake of fluoride, manifested by spots and enamel defects.
- **Functional restoration**— the goal of treatment is to restore chewing, speech and aesthetics with minimal stress to the body.
- **Angular cheilitis (cheilitis)**- cracks and inflammation in the corners of the mouth, often associated with a deficiency of B vitamins or a yeast infection.
- **Cheilitis in children**- inflammation of the red border of the lips, can be caused by irritation, allergies, infection.

- **All-ceramic crown**— an aesthetic crown without a metal frame.
- **Cementation**— gluing a crown or inlay to a tooth with special dental cement.
- **Circulatory disorders**- circulatory disorders that affect healing after dental procedures.
- **Maxillofacial surgery**— a section of surgery that deals with the treatment of diseases and injuries of the jaws, face, and soft tissues.
- **Splinting**- fixation of loose teeth or jaw fractures using splints.
- **Extracoronal fixation**— fixing the prosthesis outside the crown of the tooth (for example, using clasps).
- **Electroodontometry**— a method of diagnosing the condition of the pulp using electric current.
- **Emotional state**- anxiety, depression, fear - common reactions of elderly patients to dental treatment.
- **Endodontics**— a section of dentistry that deals with root canal treatment.
- **Enamel erosion**- destruction of enamel due to exposure to acids (in the diet or with gastroesophageal reflux).
- **Smile aesthetics**— is important not only for young people: older patients also value restoration of the appearance of their teeth.
- **Aesthetic restoration**— restoration of teeth taking into account their appearance, especially relevant for the front teeth of children.
- **Aesthetic prosthetics**— dental restoration with an emphasis on the natural appearance and harmony of the smile.
- **Iatrogenesis**- damage caused by medical intervention (for example, incorrect grinding of teeth during prosthetics).

Application 1

Change Registration Sheet Form

p/p	Document (order, order, etc. (indicating the number and date) which reflects the changes	Signature	Full name
1			
2			
3			

5. Reference materials and appendices –*are indicated as necessary.*