



Educational institution
"Royal Metropolitan University"

Quality Management System
Educational and Methodological Complex of the discipline "Orthopedic Dentistry"
Department of Dental Disciplines, Royal Metropolitan University
560004 "Dentistry"

**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

"06" 09 2025




**TEACHING AND METHODOLOGICAL COMPLEX OF THE
DISCIPLINE**

"Orthopedic Dentistry"

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

Graduate Qualification: Specialist (Doctor)

Bishkek 2025

	Educational institution "Royal Metropolitan University"
	Quality Management System Educational and Methodological Complex of the discipline "Orthopedic Dentistry" Department of Dental Disciplines, Royal Metropolitan University 560004 "Dentistry"

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. Urazaliyeva

"06" 09 2025



WORKING PROGRAM OF THE DISCIPLINE
"ORTHOPEDIC DENTISTRY"

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


Graduate Qualification: Specialist (Doctor)

Full-time program

Course	3, 4, 5
Semester	5, 6, 7, 8, 9, 10
Exam (semester)	8
Coursework (semester)	5, 6, 7, 9, 10
Total credits in the curriculum	24
Total hours in the curriculum	720

Program developer:
E. E. Bayshukurov
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 of Dental Disciplines,
Ph.D. A. K. Bektasheva

 (signature)

Bishkek 2025



Educational institution
"Royal Metropolitan University"

Quality Management System
Educational and Methodological Complex of the discipline "Orthopedic Dentistry"
Department of Dental Disciplines, Royal Metropolitan University
560004 "Dentistry"

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

The work program has been approved by the Educational and Methodological Department of the RMU

Head of the Educational and Methodological Department

Reztubaeva N.K.

(Full Name)

[Signature]

(Signature)

"09" 09 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

[Signature]

(Full Name)

Sapurova A.Z.

(Signature)

"06" 09 2025

External review provided on

M.D., Professor Aidarbekova A.A.

"04" 09 2025 (review attached)

The work program has been approved by a specialist from the RMU Quality and Monitoring Department
Q&M Department

[Signature]

(Full Name)

[Signature]

(Signature)

"06" 09 2025

РЕЦЕНЗИЯ

Рецензируемая рабочая программа дисциплины (РПД) «Ортопедическая стоматология» имеет классический вид, типовую структуру, соответствует ГОС Кыргызстана, рассчитана до 2030 года. РПД включает в себя цели освоения дисциплины, место дисциплины в структуре ООП «Стоматология», структуру и содержание дисциплины. Фонд оценочных средств с контрольными вопросами, ситуационными задачами и т.д. В РПД «Ортопедическая стоматология» приведены основная и дополнительная рекомендуемые литературные источники, приведен перечень информационных справочных систем и программного обеспечения. В РПД «Ортопедическая стоматология» описывается материально – техническое обеспечение дисциплины в РМУ и даются методические указания для обучающихся по освоению дисциплины.

Таким образом, рецензируемая РПД «Ортопедическая стоматология» позволяет подготовить врача-стоматолога высшего профессионального уровня с широким и культурным кругозором, информационной грамотностью и психолого- педагогическими навыками, способного диагностировать ортопедическую стоматологическую патологию и оказывать профессиональную помощь пациентам.

Рецензент:

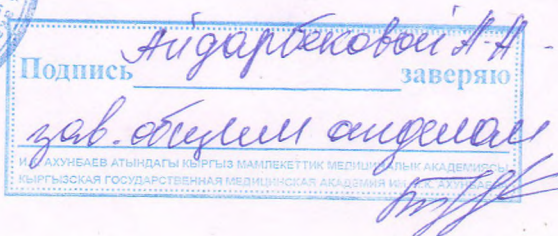
Профессор кафедры КГМА,

д.м.н., профессор

« 09 » сентября 2024г.



Айдарбекова А.А.





Content

1. Work program of the academic discipline	5
1.1.Explanatory note.....	5
1.2. Recommended educational technologies.....	12
1.3. Scope of the discipline and types of academic work.....	13
1.4. Structure of the discipline.....	13
1.4.1. Thematic plan for studying the discipline (by semester)	13
1.4.2. Educational and methodological support for independent work of students.....	65
1.4.3. Assessment tools for monitoring academic performance.....	105
1.4.4. Course policy and assessment criteria.....	116
1.4.5. Educational, methodological and informational support of the discipline.....	119
1.4.6. Material and technical support of discipline.....	120
1.4.7. Student research work.....	122
2.Educational and methodological materials.....	123
2.1. Lecture notes.....	123
2.2. Development of practical/seminar/laboratory classes.....	370
3. Methodological recommendations/instructions for students.....	456
3.1. Methodological recommendations for students on studying the discipline..	456
3.2. Methodological recommendations for completing independent work.....	457
3.3. Methodological recommendations for the implementation of practical/seminar classes, laboratory work.....	458
3.4. Guidelines for completing abstracts, reports, term papers, and final qualifying works.....	459
3.5. Guidelines for preparation for final certification.....	460
3.6. Methodological recommendations for student research work.....	460
4.Glossary.....	462
5. Reference materials and appendices.....	474



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"

1. The working program of the academic discipline

1.1. Explanatory note

The mission of the OU RMU

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 "Orthopedic Dentistry" is a course of study that covers the theoretical and practical foundations of diagnosis, prevention, and orthopedic treatment of dental defects, dentition, and the maxillofacial region. This course covers the restoration of the anatomical form and function of the dental system using removable and fixed orthopedic appliances, as well as modern materials and technologies.

This course develops students' competencies based on their knowledge of the etiology, pathogenesis, and clinical manifestations of dental hard tissue defects, partial and complete edentia, dental deformities, and occlusal disorders. Particular attention is paid to the principles of orthopedic treatment planning, the selection of prosthetic designs, and methods of fabrication and fixation. "Orthopedic Dentistry" is one of the core clinical disciplines of medical education and plays a key role in the training of dentists.

The purpose and objectives of the discipline

The purpose of discipline

The main goal of training in orthopedic dentistry is to develop students' clinical knowledge and skills in:

morphology and functional anatomy of the dental system, physiology of the masticatory apparatus, methods of examining patients with defects of teeth and dental arches;

physiology and pathology of hard tissues of teeth, periodontium and the dental



system as a whole; the basics of physical examination of dental patients;
methods of clinical and instrumental research in orthopedic dentistry;
planning methods of laboratory and instrumental examination;
interpretation of the results obtained;
determining the main clinical syndromes and defects of the dental system for correct diagnosis;
planning and implementation of orthopedic treatment using removable and fixed prostheses;
selection of prosthetic designs and materials taking into account the individual characteristics of the patient;
clinical thinking;
physiological and pathological processes in the dental system, occlusion disorders and functions of the temporomandibular joint;
on the causes and general patterns, specific mechanisms of occurrence, development and outcomes of dental diseases and defects of the dentoalveolar system and the formation of a methodological and methodological basis for clinical thinking;
on current theoretical and practical issues in the field of orthopedic dentistry, acquisition of independent work skills in order to ensure the professional and qualified activities of a dentist;
developing universal and professional competencies in graduates to provide highly qualified dental care in accordance with established requirements and standards in the healthcare sector.

Objectives of the discipline to develop a broad and deep body of basic, fundamental knowledge in the field of orthopedic dentistry, forming the professional competencies of a dentist capable of successfully solving clinical problems;
to form and improve the professional training of a physician who possesses clinical thinking, is well versed in the pathology of the dental system and has in-depth knowledge of related dental disciplines;
to develop skills in mastering modern technologies and methods of diagnostics and orthopedic treatment (removable and fixed prosthetics, digital technologies, CAD/CAM systems);
to prepare a specialist for independent professional treatment and diagnostic activities, able to conduct differential diagnostics of defects of teeth and dental arches, plan and implement orthopedic treatment, carry out preventive and rehabilitation measures to restore the functions of the dentoalveolar system;



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"

to teach how to perform basic dental procedures in orthopedic practice, including tooth preparation, taking impressions, determining central occlusion, and fixing orthopedic structures;


develop skills in selecting optimal prosthetic designs and materials, taking into account the clinical situation and individual characteristics of the patient;

to navigate issues of organizing dental care, healthcare economics, and working according to clinical protocols;

to form and improve a system of general and specialized knowledge, skills and abilities that enable a physician to act within the framework of regulatory legal acts, standards for the provision of dental care, medical ethics and deontology.

The "Orthopedic Dentistry" block is part of the basic part of the professional cycle for the specialty "Dentistry".(code 560004).

The place of the discipline in the structure of the OOP (prerequisites, postrequisites) This course is studied by students majoring in Dentistry and is a required course in the State Educational Standard of Higher Professional Education. The course "Orthopedic Dentistry" builds on the previous courses, including normal and pathological anatomy, normal and pathological physiology, histology, biochemistry, pharmacology, microbiology, propaedeutics of dental diseases, therapeutic dentistry, and surgical dentistry. The knowledge gained in "Orthopedic Dentistry" will be essential for subsequent courses in implantology, maxillofacial surgery, orthodontics, gerontostomatology, and clinical dentistry. The primary goal of the Orthopedic Dentistry program is to develop students' clinical judgment and the ability to analyze anamnesis data, clinical examination, and additional research methods to establish a diagnosis and plan rational orthopedic treatment. Based on the main objectives of the course "Orthopedic Dentistry", the program material is divided into 3 blocks: I. Fundamentals of Orthopedic Dentistry. The material includes sections: anatomical and physiological features of the dental system, methods of patient examination, diagnosis of defects of the teeth and dentition. II. Orthopedic Treatment of Defects of the Teeth and Dentures. The material includes sections: fixed prosthetics (inlays, crowns, bridges), removable prosthetics (partial and complete dentures), modern materials and technologies for the manufacture of orthopedic structures. III. Modern Aspects and Clinical Practice. The material includes topics: prosthetics on implants, occlusion restoration, prevention of complications, rehabilitation of patients with defects of the dental system. The total workload of the course is 720 hours. The course includes lectures and practical classes. Ongoing assessment includes tests, quizzes, and practical skills assessments (dental preparation, impression taking,


	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"

and fabrication and fixation of dentures). The final assessment is an exam. Course prerequisites: normal and pathological anatomy, normal and pathological physiology, and histology. Biochemistry, pharmacology, microbiology, propaedeutics of dental diseases, therapeutic dentistry, surgical dentistry. Postrequisites: orthodontics, implantology, maxillofacial surgery, gerontostomatology, clinical dentistry.

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

- Graduate in the specialty Dentistry with 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-3	able and willing to conduct a pathophysiological analysis of clinical syndromes, use sound methods of diagnosis, treatment, rehabilitation and prevention among children, taking into account their age and the adult population;
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-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;

	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"

PC-22	able and ready to perform basic treatment measures for the most common dental diseases and conditions in adults and children.
PC-23	able and ready to prescribe adequate treatment to patients with dental diseases in accordance with the diagnosis, and to implement an algorithm for selecting drug and non-drug therapy;
PC-37	capable and ready to solve individual research and applied science problems in the field of healthcare in the diagnosis, treatment, rehabilitation and prevention of dental diseases;
PC-38	able and willing to conduct statistical analysis and prepare a report on the completed research;
APC-1	the ability to use modern digital technologies in the diagnosis and treatment of dental diseases.
APC-2	willingness to use innovative aesthetic materials and restoration methods to restore the dentition.

PO1:To analyze socially significant and professional problems in orthopedic dentistry using modern scientific methods.

PO2:Use computer technologies and specialized software to solve problems in orthopedic treatment and diagnostics. **PO3:** Apply the principles of bioethics, deontology, and medical ethics when providing orthopedic dental care.

PO4:Communicate effectively and professionally with patients and colleagues, work in a team, and resolve conflict situations constructively.

PO5:Conduct clinical examinations of patients, collect medical history, assess dental status and prepare medical documentation.

PO6:Perform a pathophysiological analysis of disorders of the dental system, interpret the results of clinical and instrumental research methods.

PO7:Conduct diagnostics of defects of teeth and dental arches, deformations of the dentoalveolar system in patients of various age groups.

PO8:Develop and implement a sound orthopedic treatment plan using various types of prostheses and modern technologies.

PO9:Apply aseptic and antiseptic methods, ensure infection and sanitary safety during orthopedic procedures.

PO10:Use modern digital technologies (CAD/CAM, intraoral scanning, digital modeling) for diagnostics, planning and production of orthopedic structures.

After mastering this discipline, the student: **will know:**

anatomical, physiological, age-related and individual characteristics of the structure and functioning of the dental system of a healthy and sick person;

fundamentals of organizing dental (orthopedic) care, modern forms of work and



diagnostic capabilities of the dental service;
concepts of etiology, pathogenesis, morphogenesis of diseases of hard dental tissues, periodontium and defects of dental arches, principles of classification of dental diseases;
the main pathological symptoms and syndromes of defects of teeth and dental arches, occlusion disorders and dysfunction of the temporomandibular joint (TMJ);
types of orthopedic structures (removable, non-removable, conditionally removable), indications and contraindications for their use;

will understand:

the need for prevention of dental diseases and dispensary observation of patients with defects of the dental system;
the need for primary and secondary prevention of complications during orthopedic treatment;
the importance of compliance with sanitary and epidemiological regulations in dental practice;
the importance of maintaining medical records in dental institutions;
mechanisms of development of pathological processes in the dental system, clinical manifestations of dental defects, partial and complete adentia, deformations of the dental arches;
principles of clinical, laboratory and instrumental diagnostics in orthopedic dentistry;
Fundamentals of planning orthopedic treatment and rehabilitation of patients;

will be able to use:

methods of general and special dental examination of patients;
basic methods for diagnosing defects of teeth and dental arches, occlusion disorders;
modern technologies of orthopedic treatment, including removable and fixed prosthetics, as well as digital technologies; will be able to carry out:
collecting anamnesis, interviewing the patient, conducting a clinical examination;
diagnostics of defects in hard dental tissues, partial and complete edentia, deformations of dental arches;
drawing up an orthopedic treatment plan;
preparation of teeth for various types of orthopedic structures;
taking impressions (anatomical and functional);
determination of central occlusion and intermaxillary relationships;
selection and fixation of fixed orthopedic structures;




manufacturing and fitting of removable dentures (on phantoms);
correction and adaptation of orthopedic structures;
prevention of complications and rehabilitation of patients;
preparation of medical documentation; will be able to analyze:
clinical examination data of a dental patient (inspection, palpation, percussion,
assessment of occlusion, condition of the mucous membrane, TMJ) when making a
diagnosis; will be able to synthesize:
results of clinical, laboratory, and instrumental research methods to identify
pathologies of the dental system and select a rational treatment method; will be
able to evaluate:
results of laboratory and instrumental diagnostic methods;
the condition of the patient's dental system and the severity of defects;
the effectiveness of the orthopedic treatment;
functional and aesthetic condition of orthopedic structures.

1.2. Recommended educational technologies

The following educational technologies are used to help students master the academic discipline "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;
- computer simulation;
- analysis of clinical cases;
- situational tasks;
- preparation and defense of medical history;
- use of computer training programs;

	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"

- interactive atlases;
- attending medical conferences and consultations;
- participation in scientific and practical conferences, congresses, symposiums;
- 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.	6 sem.	7 sem.	8 sem.	9sem.	10 sem.	Total	
							in hours	in loans
Total labor intensity	120	120	90	120	150	120	720	24
Classroom work	72	72	54	72	90	72	432	
Lectures	18	18	18	18	18	18	108	
Practical classes	54	54	36	54	72	54	324	
Independent work	24	24	23	24	30	24	144	
SRSP	24	24	23	24	30	24	144	
Type of final control	Credit	Credit	Credit	Exam	Credit	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.

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



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"

No.	Name sections and topics disciplines (lectures and practical classes)	Classroom classes				Total hours on	SRSP	Independent work of a student	Formed competencies	Used educational technologies, methods and	Dummies	Forms of current and border control academic
		lectures	seminars	practical classes	laboratory work							
	5th semester									5th semester		
1	Clinical examination of an orthopedic patient. Patient interview and complaints in the orthopedic department.	2		4		6	2	2	OK-1, PC-2, PC-15, SPC-1	1	Clinical examination of an orthopedic patient. Patient interview and complaints in the orthopedic department.	2
2	Medical and lifestyle history of patients seeking orthopedic care. Past and concomitant dental-related illnesses.			2		2	2	2	OK-1, PC-2, PC-3, PC-15	2	Medical and lifestyle history of patients seeking orthopedic care. Past and concomitant	



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"

											dental-related illnesses.	
3	Examination of the face, dentition, oral mucosa and tongue for further prosthetics. Palpation. Percussion. Probing. Auscultation.	2		4		6	2	2	PC-2, PC-19, PC-20, PC-4	3	Examination of the face, dentition, oral mucosa and tongue for further prosthetics. Palpation. Percussion. Probing. Auscultation.	2
4	Laboratory research methods: EOD, EMG, anthropometric. Rheography of the periodontium and joints. Mastication. Galvanometry, pH-metry of saliva. Orthopantomogram. Targeted radiography.			2		2	2	2	IC-1, PC-20, PC-16, OK-1	4	Laboratory research methods: EOD, EMG, anthropometric. Rheography of the periodontium and joints. Mastication.	



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"

											Galvanometry, pH-metry of saliva. Orthopantomogram. Targeted radiography.	
5	The main nosological entities of diseases subject to treatment in an orthopedic dentistry clinic. Drawing up an orthopedic treatment plan and choosing a prosthetic design Medical history and work order. Rules for completing the medical history of an orthopedic patient. The importance of the medical history as a scientific, medical, and legal document.	2		4		6	2	2	PC-16, PC-22, PC-23, OK-1	5	The main nosological entities of diseases subject to treatment in an orthopedic dentistry clinic. Drawing up an orthopedic treatment plan and choosing a prosthetic design Medical history and work order. Rules for completing the	2



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"

											medical history of an orthopedic patient. The importance of the medical history as a scientific, medical, and legal document.	
6	Medical history and work order. Rules for completing an orthopedic patient's medical history. The importance of the medical history as a scientific, medical, and legal document.			2		2	2	2	PC-2, PC-15, SPC-1	6	Medical history and work order. Rules for completing an orthopedic patient's medical history. The importance of the medical history as a scientific,	



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"

										medical, and legal document.		
7	Orthopedic treatment methods for patients with dental crown hard tissue defects due to carious and non-carious lesions. IROPZ. Clinical examination and patient analysis. Inlays. Types. Methods and clinical and laboratory stages of manufacture. Indications for use and features of cavity formation during inlay prosthetics depending on the defect topography.	2		4		6			PC-22, PC-23, PC-19	7	Orthopedic treatment methods for patients with dental crown hard tissue defects due to carious and non-carious lesions. IROPZ. Clinical examination and patient analysis. Inlays. Types. Methods and clinical and laboratory stages of	2



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"

											manufacture. Indications for use and features of cavity formation during inlay prosthetics depending on the defect topography.	
8	Inlays. Types. Methods and clinical and laboratory stages of manufacture. Indications for use and features of cavity formation during inlay prosthetics depending on the topography of the defect.			2		2	2	2	PC-22, PC-23, APC-2	8	Inlays. Types. Methods and clinical and laboratory stages of manufacture. Indications for use and features of cavity formation during inlay	



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"

											prosthetics depending on the topography of the defect.	
9	Metal crowns. Types (stamped, cast). Indications and contraindications for their use. Tooth preparation for stamped and cast metal crowns. Assessment of preparation quality.	2		4		6			PC-22, PC-23, PC-19	9	Metal crowns. Types (stamped, cast). Indications and contraindications for their use. Tooth preparation for stamped and cast metal crowns. Assessment of preparation quality.	2
10	Tooth preparation for stamped and cast metal crowns. Assessment of preparation quality.			2		2	2	2	PC-22, PC-19, IC-1	10	Tooth preparation for stamped and cast metal crowns.	



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"

											Assessment of preparation quality.	
11	Methods for taking impressions using various impression materials and criteria for their evaluation. Methods for fitting single metal crowns. Rules and sequence for crown cementation.	2		4		6			PC-22, PC-20, IC-1	11	Methods for taking impressions using various impression materials and criteria for their evaluation. Methods for fitting single metal crowns. Rules and sequence for crown cementation.	2
12	Methodology for fitting single metal crowns. Rules and sequence for crown fixation.			2		2	2	2	PC-22, PC-23, SPC-1	12	Methodology for fitting single metal crowns. Rules and sequence	



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"

											for crown fixation.	
13	One-visit plastic crown manufacturing technology. Advantages and disadvantages of plastic crowns. Metal-acrylic crowns. Indications and contraindications for their use. Clinical and laboratory manufacturing stages.	2		4		6			PC-22, PC-23, APC-2	13	One-visit plastic crown manufacturing technology. Advantages and disadvantages of plastic crowns. Metal-acrylic crowns. Indications and contraindications for their use. Clinical and laboratory manufacturing stages.	2
14	Metal-acrylic crowns. Indications and contraindications for their use. Clinical and			2		2	2	2	PC-22, PC-23, APC-2	14	Metal-acrylic crowns. Indications and contraindicatio	



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"

	laboratory stages of manufacturing.										ns for their use. Clinical and laboratory stages of manufacturing.	
15	Metal-ceramic crowns. Indications and contraindications for their use. Clinical and laboratory stages of fabrication.	2		4		6			PC-22, PC-23, APC-2, IC-1	15	Metal-ceramic crowns. Indications and contraindications for their use. Clinical and laboratory stages of fabrication.	2
16	Peculiarities of tooth preparation and obtaining double impressions			2		2	2	2	PC-22, PC-19, IC-1	16	Peculiarities of tooth preparation and obtaining double impressions	
17	Peculiarities of tooth preparation and obtaining double	2		4		6	2	2	PC-22, PC-19, IC-1	17	Peculiarities of tooth preparation and	2



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"

	impressions. Gingival retraction. Methods and materials for gingival retraction. Procedure methodology. Clinical examination and patient analysis.										obtaining double impressions. Gingival retraction. Methods and materials for gingival retraction. Procedure methodology. Clinical examination and patient analysis.	
18	Gingival retraction. Methods and materials for gingival retraction. Procedure. Clinical examination and patient analysis.			2		2			OK-1, PC-2, PC-16, SPC-1	18	Gingival retraction. Methods and materials for gingival retraction. Procedure. Clinical	



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"

											examination and patient analysis.	
	Total 5 semester	18		54		72	24	24			Total semester	5 18
	6th semester											
1	Introduction to orthopedic dentistry. Goals and objectives of the course. Main types of orthopedic treatment. Organization of orthopedic dental care.	2		4		6	2	2	IC-1, PC-4, SPC-1	lecture using video materials	phantom teeth with cavities for opening the crown, apex locator, endomotor	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
2	Collection of anamnesis and examination of the patient.			2		2	2	2	PC-2, PC-15, SPC-1, OK-1	problematic lecture	phantom teeth with cavities for opening the crown, apex	classes using phantom jaws



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"

											locator, endomotor	
3	Anatomical and physiological foundations of the masticatory apparatus. The structure of the dental system. The functions of teeth, periodontium, and TMJ.	2		4		6	2	2	PC-2, PC-19, PC-20	lecture using video materials	phantom teeth with cavities for opening the crown, apex locator, endomotor	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
4	Definition of dental arch defects. Classification.			2		2	2	2	PC-19, PC-16, OK-1	lecture using video materials	phantom teeth with cavities for opening the crown, apex locator, endomotor	classes using phantom jaws
5	Examination of patients in orthopedic dentistry.	2		4		6	2	2	IC-1, PC-20, PC-22	lecture using video	phantom teeth with cavities for opening the	Testing, control work.



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"

	Clinical and additional examination methods. Diagnosis of dental defects.									materials	crown, apex locator, endomotor	Assessing the acquisition of practical skills (abilities). Solving situational problems
6	Obtaining anatomical impressions.			2		2	2	2	PC-20, PC-22, IC-1	lecture using video materials	phantom teeth with cavities for opening the crown, apex locator, endomotor	classes using phantom jaws
7	Classification of defects of dental arches and teeth. Classification of dental defects. Indications for various types of prosthetics.	2		4		6			PC-20, PC-22, IC-1	problematic lecture	phantom teeth with cavities for opening the crown, apex locator, endomotor	Testing, control work. Assessing the acquisition of practical skills



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"

												(abilities). Solving situational problems
8	Preparation of teeth for artificial crowns (phantom).			2		2	2	2	PC-20, PC-19, OK-1	lecture using video materials	phantom teeth with cavities for opening the crown, apex locator, endomotor	classes using phantom jaws
9	Fixed dentures. Types of fixed structures. Indications and contraindications.	2		4		6			PC-22, PC-19, IC-1	problematic lecture	phantom teeth with cavities for opening the crown, apex locator, endomotor	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems



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"

10	Preparing teeth for metal-ceramic crowns.			2		2	2	2	PC-22, PC-23, PC-19		phantom teeth with cavities for opening the crown, apex locator, endomotor	classes using phantom jaws
11	Preparing teeth for artificial crowns. Types of preparation. Principles of tooth stump formation.	2		4		6			PC-22, PC-23, APC-2		phantom teeth with cavities for opening the crown, apex locator, endomotor	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
12	Construction of bridge prostheses.			2		2	2	2	PC-22, PC-23, APC-2		phantom teeth with cavities for opening the crown, apex	classes using phantom jaws



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"

											locator, endomotor	
13	Removable plate dentures. Indications, design, manufacturing stages.	2		4		6			PC-22, PC-23, PC-19		phantom teeth with cavities for opening the crown, apex locator, endomotor	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
14	Removable plate dentures: design and elements.			2		2	2	2	PC-22, PC-23, IC-1		phantom teeth with cavities for opening the crown, apex locator, endomotor	classes using phantom jaws
15	Clasp dentures. Construction of clasp	2		4		6			PC-22, PC-23, PC-19		phantom teeth with cavities for opening the	Testing, control work.



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"

	dentures. Clasp system. Indications.										crown, apex locator, endomotor	Assessing the acquisition of practical skills (abilities). Solving situational problems
16	Clasp dentures and their elements.			2		2	2	2	PC-22, PC-20, IC-1		phantom teeth with cavities for opening the crown, apex locator, endomotor	classes using phantom jaws
17	Complications in orthopedic treatment and their prevention. Errors in prosthetics, methods of prevention and correction.	2		4		6			PC-22, PC-23, APC-1		phantom teeth with cavities for opening the crown, apex locator, endomotor	Testing, control work. Assessing the acquisition of practical skills



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"

												(abilities). Solving situational problems
18	Evaluation of orthopedic treatment results. Final assessment.		2		2			PC-22, PC-23, SPC-1		phantom teeth with cavities for opening the crown, apex locator, endomotor		classes using phantom jaws
	Total 6 semester.	18	54		72	24	24					credit
	7th semester											
1	Introduction to orthopedic dentistry. Objectives and classifications of dental defects.	2	2		4	2	2	PC-4, IC-1, SPC-1	lecture using video materials	Jaw models, scaler, dental unit		Testing, control work. Assessing the acquisition of practical skills (abilities). Solving



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"

												situational problems
2	Examination of the patient, collection of anamnesis, filling out medical documentation.			2		2	2	2	PC-2, PC-15, SPC-1, OK-1	problematic lecture	Jaw models, scaler, dental unit	classes using phantom jaws
3	Methods of examination of orthopedic patients.	2		2		4	2	2	PC-19, PC-16, OK-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the development of 3 practical skills (abilities). Solving situational problems
4	Preparation for a stamped crown			2		2	2	2	PC-22, PC-19, IC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws



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"

5	Fixed orthopedic structures: general classification and indications.	2		2		4			PC-22, PC-23, PC-19	lecture-visualization	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
6	Preparation for a metal-ceramic crown.			2		2	2	2	PC-22, PC-23, APC-2, IC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
7	Stamped, cast and solid-cast crowns: types, features.	2		2		4			PC-22, PC-23, APC-2	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical



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"

												skills (abilities). Solving situational problems
8	Impressions: anatomical, functional, two-stage.			2		2	2	2	PC-20, PC-22, IC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
9	Preparation of teeth for different types of crowns.	2		2		4			PC-20, PC-22, OK-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems



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"

10	Preparation of teeth with high wear.			2		2	2	2	PC-22, PC-23, PC-3	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
11	Intermediate and supporting elements of bridge prostheses.	2		2		4			PC-22, APC-1, IC-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
12	Trying on a cast structure.			2		2	2	2	PC-22, PC-23, PC-20	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
13	Temporary orthopedic structures.	2		2		4			PC-22, PC-23, SPC-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the



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"

												acquisition of practical skills (abilities). Solving situational problems
14	Dissection errors – model analysis.			2		2	2	2	PC-16, OK-1, PC-22	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
15	Errors and complications at the stages of preparation and fixation.	2		2		4	2	2	PC-22, PC-23, APC-2	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems



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"

16	Contact and occlusion control.			2		2			PC-20, PC-22, IC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
17	Materials in fixed prosthetics (metals, ceramics, cements).	2		2		4	2	2	OK-1, PC-16, PC-23	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
18	Final standings.			2		2			OK-1, PC-2, PC-16, SPC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
	Total 7 semester	18		36		54	18	18				
	8th semester											
1	Bridge prostheses: types, indications, designs.	2		4		6	2	2	PC-2, PC-16, PC-19, OK-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work.



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"

												Assessing the acquisition of practical skills (abilities). Solving situational problems
2	Making a custom spoon.			2		2	2	2	PC-22, PC-20, IC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
3	Prosthetics for single and multiple defects.	2		4		6	2	2	PC-20, PC-22, IC-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving



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"

													situational problems
4	Construction of occlusal ridges.			2		2	2	2	PC-22, PC-20	lecture using video materials	Jaw models, scaler, dental unit		classes using phantom jaws
5	Biomechanics of fixed prosthetics.	2		4		6	2	2	PC-20, PC-22, OK-1	lecture using video materials	Jaw models, scaler, dental unit		Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
6	Determination of the central relation of the jaws.			2		2	2	2	PC-20, PC-22	lecture using video materials	Jaw models, scaler, dental unit		classes using phantom jaws
7	Features of preparation of periodontal patient.	2		4		6	2	2	PC-22, APC-2, IC-1	lecture using video materials	Jaw models, scaler, dental unit		Testing, control work.



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"

												Assessing the acquisition of practical skills (abilities). Solving situational problems
8	Trying on a wax model.			2		2			PC-22, PC-23, SPC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
9	Prevention of overload of supporting teeth.	2		4		6	2	2	PC-22, PC-23, SPC-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving



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"

												situational problems
10	Design of a clasp denture.			2		2			PC-22, PC-23, APC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
11	Methods of dental splinting for periodontal diseases	2		4		6	2	2	PC-22, IC-1, APC-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
12	Fitting and correction of a clasp denture.			2		2			PC-22, PC-23, PC-20	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
13	Periodontal indications for orthopedic treatment.	2		4		6	2	2	PC-23, SPC-1, OK-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work.



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"

												Assessing the acquisition of practical skills (abilities). Solving situational problems
14	Clinical analysis: clasp denture.			2		2			PC-16, PC-23, OK-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
15	Orthopedic rehabilitation for increased tooth wear.	2		4		6	2	2	PC-23, PC-3, SPC-1	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving



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"

												situational problems
16	Testing the fixation and function of the prosthesis.			2		2			PC-20, PC-22, OK-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
17	Periodontal indications for orthopedic treatment.	2		4		6	2	2	PC-16, OK-1, PC-22	lecture using video materials	Jaw models, scaler, dental unit	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
18	Final standings.			2		2			OK-1, PC-2, PC-16, SPC-1	lecture using video materials	Jaw models, scaler, dental unit	classes using phantom jaws
	Total 8 semester	18		54		72	24	24				
	9th semester											



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"

1	Partial dentures: designs, indications, selection.	2		4		6	2	2	PC-2, PC-16, PC-19, OK-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
2	Making a custom spoon.			4		4	2	2	PC-22, PC-20, IC-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
3	Partial dentures: designs, indications, selection.	2		4		6	2	2	PC-20, PC-22, IC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills



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"

												(abilities). Solving situational problems
4	Construction of occlusal ridges.			4		4	2	2	PC-22, PC-20	lecture using video materials	Phantom Jaws	classes using phantom jaws
5	Clasp dentures: design and biomechanics.	2		4		6	2	2	PC-20, PC-22, OK-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
6	Determination of the central relation of the jaws.			4		4	2	2	PC-20, PC-22	lecture using video materials	Phantom Jaws	classes using phantom jaws



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"

7	Complete removable dentures: principles of occlusion restoration.	2		4		6	2	2	PC-22, APC-2, IC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
8	Trying on a wax model.			4		4	2	2	PC-22, PC-23, SPC-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
9	Features of prosthetics in case of complete edentia.	2		4		6	2	2	PC-22, PC-23, SPC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills



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"

												(abilities). Solving situational problems
10	Design of a clasp denture.			4		4	2	2	PC-22, PC-23, APC-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
11	Anatomical and topographic landmarks for fixing prostheses.	2		4		6	2	2	PC-22, IC-1, APC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
12	Fitting and correction of a clasp denture.			4		4	2	2	PC-22, PC-23, PC-20	lecture using video materials	Phantom Jaws	classes using phantom jaws



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"

13	Centric occlusion: restoration in cases of edentia.	2		4		6			PC-23, SPC-1, OK-	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
14	Clinical analysis: clasp denture.			4		4	2	2	PC-16, PC-23, OK-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
15	Errors and corrections of removable dentures.	2		4		6			PC-23, PC-3, SPC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills



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"

												(abilities). Solving situational problems
16	Testing the fixation and function of the prosthesis.			4		4	2	2	PC-20, PC-22, OK-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
17	Patient adaptation to a removable denture. Psychology of communication.	2		4		6	2	2	PC-16, OK-1, PC-22	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
18	Final standings.			4		4			OK-1, PC-2, PC-16, SPC-1	lecture using video materials	Phantom Jaws	classes using phantom jaws



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"

	Total 9 semester	18		72		90	30	30		lecture using video materials		
	10th semester											
1	Fundamentals of occlusal relationships.	2		4		6	2	2	PC-20, PC-16, PC-19, OK-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
2	Removing the bite in case of destruction of the dental row.			2		2	2	2	PC-20, PC-22, OK-1	lecture using video materials	Phantom Jaws	classes using phantom jaws



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"

3	Temporomandibular joint: anatomy, functions, pathology	2		4		6	2	2	PC-22, PC-23, APC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
4	Orthopedic treatment for dental injuries.			2		2	2	2	PC-22, PC-23, PC-3	lecture using video materials	Phantom Jaws	classes using phantom jaws
5	TMJ Dysfunction: Diagnosis and the Role of the Orthopedist	2		4		6	2	2	PC-23, PC-3, OK-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills



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"

												(abilities). Solving situational problems
6	An integrated approach: periodontology + orthopedics			2		2	2	2	PC-3, PC-23, OK-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
7	Orthopedic treatment for bruxism and occlusal overloads	2		4		6	2	2	PC-23, PC-16, OK-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
8	Clinical analysis of a patient with occlusion disorder.			2		2			PC-16, PC-20, OK-1	lecture using video materials	Phantom Jaws	classes using phantom jaws



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"

9	Mouth guards, splints, and splints – types and indications.	2		2		6	2	2	PC-20, PC-22, OK-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
10	Errors in the rehabilitation of complex patients.			2		2			PC-16, OK-1, PC-23	lecture using video materials	Phantom Jaws	classes using phantom jaws
11	Bite and its rehabilitation in orthopedics.	2		4		6	2	2	PC-22, PC-23, SPC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills



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"


												(abilities). Solving situational problems
12	Prosthetics for bite anomalies.			2		2			PC-22, PC-23, PC-3	lecture using video materials	Phantom Jaws	classes using phantom jaws
13	Features of prosthetics in elderly and somatically weakened patients	2		4		6	2	2	PC-23, PC-16, OK-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
14	Evaluation of results: functional and aesthetic aspects.			2		2			PC-20, PC-23, OK-1	lecture using video materials	Phantom Jaws	classes using phantom jaws



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"


15	Principles of complex orthopedic treatment.	2		4		6	2	2	IC-1, OK-1, SPC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills (abilities). Solving situational problems
16	Rehearsal of public defense.			2		2			SPC-1, OK-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
17	Preparation and presentation of a clinical case (diploma).	2		4		6	2	2	OK-1, IC-1	lecture using video materials	Phantom Jaws	Testing, control work. Assessing the acquisition of practical skills

	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"

												(abilities). Solving situational problems
18	Disease prevention. Final assessment.			2		2			OK-1, PC-2, PC-16, SPC-1	lecture using video materials	Phantom Jaws	classes using phantom jaws
	Total 10 sem	18		54		72	24	24				
	Total hours by discipline:	10 8		32 4		43 2	14 4	144				

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.

	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"

1.4.2. Organization of independent work of students

No.	Topic of independent work for students of 5th semester:	Assignment for independent work	Recommended literature	Deadlines surrender (week number)
1.	Organization of work of the orthopedic office	Abstract, presentation, preparation of the report.	1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022 3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019 4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016 5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	1
2.	Orthopedic surgeon's instruments and equipment	Abstract, presentation, preparation of a report	1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022 3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L.	2



			<p>M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
3.	Asepsis and antiseptics in orthopedic dentistry	Abstract, presentation, preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	3
4.	Methods of examination of an orthopedic patient	Abstract, presentation, preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2:</p>	4



			<p>textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
5	Collection of anamnesis and analysis of complaints	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I.</p>	5



			Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	
6	Anatomy and physiology of the dental system	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	6
7	Classification of dental defects	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I.</p>	6



			<p>Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
8	Medical documentation (medical history, work order)	Abstract, presentation. Preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7
9	Main nosological forms in orthopedic dentistry	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N.</p>	7



			<p>Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
10	Fundamentals of Clinical Reasoning in Orthopedics	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7

No .	Topics for independent work of students	Assignment for independent work	Recommended Literature	Deadlines
------	---	---------------------------------	------------------------	-----------



	6th semester:			surrender (week number)
1.	Diagnostic methods in orthopedic dentistry	Report, abstract, presentation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	1
2.	X-ray examination methods (OPG, targeted images)	Report, abstract, presentation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L.</p>	2



			<p>M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
3.	Electroodontodiagnostics and its importance	Report, abstract, presentation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	3
4.	Impression materials: classification and properties	Report, abstract, presentation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan -</p>	4



			<p>Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
5	Methods of obtaining impressions	Report, abstract, presentation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed</p>	5




			and additional - Moscow: GEOTAR-Media, 2016 5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	
6	Diagnostic models of jaws	Report, abstract, presentation.	1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022 3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed., processed and additional - Moscow: GEOTAR-Media, 2019 4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed., processed and additional - Moscow: GEOTAR-Media, 2016 5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	6
7	Occlusion analysis	Report, abstract, presentation.	1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022	7



			<p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed., processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed., processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
8	Determination of the central relation of the jaws	Report, abstract, presentation.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed., processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed., processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	8



9	Functional research methods	Report, abstract, presentation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	8
10	Diagnostic errors in orthopedic dentistry	Report, abstract, presentation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p>	8

	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"

			<p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>
--	--	--	--

No .	Topics for independent work of students in the 7th semester:	Assignment for independent work	Recommended Literature	Deadlines surrender (week number)
1.	Types of artificial crowns	Abstract, presentation, preparation of the report.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov</p>	1



			- Moscow: GEOTAR-Media, 2015	
2.	Indications and contraindications for crowns	Abstract, presentation, preparation of a report	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	2
3.	Preparation of teeth for crowns	Abstract, presentation, preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed</p>	3



			<p>and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
4.	Metal crowns: features	Abstract, presentation, preparation using dummies.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	4
5	Metal-ceramic crowns	Abstract, presentation, report preparation.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p>	5



			<p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
6	Plastic and temporary crowns	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p>	6



			5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	
7	Impressions for fixed prosthetics	Abstract, presentation, report preparation.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	6
8	Fixation of crowns	Abstract, presentation. Preparation using dummies.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N.</p>	7



			<p>Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
9	Errors in the manufacture of crowns	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7
10	Prevention of complications in fixed	Abstract, presentation,	<p>1.Features of disinfection and sterilization in dentistry: a</p>	7



	prosthetics	report preparation.	<p>textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
--	-------------	---------------------	---	--

No .	Topics for independent work of students in the 8th semester:	Assignment for independent work	Recommended Literature	Deadlines surrender (week number)
1.	Classification of bridge prostheses	Abstract, presentation, preparation of the report.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p>	1



			<p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
2.	Indications for bridge prostheses	Abstract, presentation, preparation of a report	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	2



3.	Construction of bridge prostheses	Abstract, presentation, preparation using dummies.	1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022 3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019 4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016 5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	3
4.	Stages of manufacturing bridge prostheses	Abstract, presentation, preparation using dummies.	1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022 3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019	4



			<p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
5	Biomechanics of dental bridges	Abstract, presentation, report preparation.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	5
6	Errors in bridge design	Abstract, presentation, report preparation.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol.</p>	6



			<p>1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
7	Restoration of dental defects	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O.</p>	6



			R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	
8	Occlusal relationships in bridges	Abstract, presentation. Preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7
9	Fixation of bridge prostheses	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N.</p>	7



			<p>Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
10	Complications and their prevention	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7

No .	Topics for independent work of	Assignment for independent work	Recommended Literature	Deadlines
------	--------------------------------	---------------------------------	------------------------	-----------



	students in the 9th semester:			surrender (week number)
1.	Partial edentia: clinical features and treatment	Abstract, presentation, preparation of the report.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	1
2.	Complete edentia: features	Abstract, presentation, preparation of a report	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L.</p>	2



			<p>M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
3.	Removable plate dentures	Abstract, presentation, preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	3
4.	Individual spoons	Abstract, presentation,	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan -</p>	4



		preparation using dummies.	<p>Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
5	Functional impressions	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed</p>	5



			and additional - Moscow: GEOTAR-Media, 2016 5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	
6	Occlusal rims	Abstract, presentation, report preparation.	1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022 3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019 4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016 5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	6
7	Definition of central relation	Abstract, presentation, report preparation.	1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022	6



			<p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
8	Teeth placement	Abstract, presentation. Preparation using dummies.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7



9	Fixation of removable dentures	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7
10	Adaptation of patients to removable dentures	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p>	7



			<p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
--	--	--	--	--

No .	Topics for independent work of students in the 10th semester:	Assignment for independent work	Recommended Literature	Deadlines surrender (week number)
1.	Clasp dentures: design and elements	Abstract, presentation, preparation of the report.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov</p>	1



			- Moscow: GEOTAR-Media, 2015	
2.	Design of clasp dentures	Abstract, presentation, preparation of a report	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	2
3.	Orthopedic treatment for periodontal diseases	Abstract, presentation, preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed</p>	3



			<p>and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
4.	Functional diagnostics of the TMJ	Abstract, presentation, preparation using dummies.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	4
5	Occlusal disorders and their correction	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p>	5




			<p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
6	Mouthguards and splints in orthopedics	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p>	6



			5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	
7	Comprehensive rehabilitation of patients	Abstract, presentation, report preparation.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed., processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed., processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	6
8	Errors in orthopedic treatment	Abstract, presentation. Preparation using dummies.	<p>1. Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2. Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3. Orthopedic dentistry (faculty course): textbook / V. N.</p>	7



			<p>Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	
9	Re-prosthetics	Abstract, presentation, report preparation.	<p>1.Features of disinfection and sterilization in dentistry: a textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016</p> <p>2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022</p> <p>3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019</p> <p>4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016</p> <p>5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015</p>	7
10	Evaluation of orthopedic treatment results	Abstract, presentation,	<p>1.Features of disinfection and sterilization in dentistry: a</p>	7

	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"

		report preparation.	textbook / E. A. BazICyan - Moscow: GEOTAR-Media, 2016 2.Fundamentals of Dental Prosthetics Technology. Vol. 1.2: textbook: in 2 volumes / S. I. Abakarov [et al.]; edited by E. S. Kalivradzhiyan. - Moscow: GEOTAR-Media, 2022 3.Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019 4.Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016 5.Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015	
--	--	---------------------	--	--

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):

5th semester

Organizational issues of orthopedic dentistry. Basic terms and concepts. Anatomy and physiology of the dental system;

	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"

Occlusion and articulation. Types of bite and their characteristics;
 Methods of examining patients in orthopedic dentistry. Clinical, laboratory, and instrumental diagnostic methods;
 Defects of hard dental tissues. Classification, clinical features, and orthopedic treatment methods;
 Partial and complete edentia. Causes, classification, clinical manifestations;
 Fixed orthopedic structures: inlays, veneers, crowns. Indications and contraindications;
 Bridge prostheses: types, indications, manufacturing stages;
 Removable plate dentures: design, indications, manufacturing stages;
 Clasp dentures: design, advantages and disadvantages;
 Impressions in orthopedic dentistry. Types of impression materials and impression techniques;
 Determination of central occlusion and intermaxillary relationships;
 Functional diagnostics in orthopedic dentistry;
 Diseases of the temporomandibular joint (TMJ) and their impact on prosthetics;
 Orthopedic treatment for pathological tooth wear;
 Errors and complications in orthopedic treatment and their prevention;
 Oral hygiene for orthopedic structures;
 Modern materials in orthopedic dentistry;
 Digital technologies in orthopedic dentistry (CAD/CAM);
 Implantation as a method of restoring dental defects;
 Rehabilitation of patients with defects of the dental system.

6th semester

Defects of hard dental tissues: clinical presentation, diagnostics and modern methods of orthopedic treatment;
 Pathological abrasion of teeth: etiology, classification, diagnosis, treatment;
 Partial adentia: causes, classification, methods of orthopedic treatment;
 Complete edentia: clinical presentation, diagnostics, principles of prosthetics;
 Features of prosthetics in periodontal diseases;
 Orthopedic treatment for dental arch deformities;
 Temporomandibular joint (TMJ): diseases, diagnosis and orthopedic treatment;
 Errors and complications in fixed prosthetics, their prevention;
 Errors and complications in removable dentures, their prevention;
 Allergic reactions to dental materials, prevention and treatment;
 Modern impression materials and technologies for obtaining impressions;
 Methods for determining central occlusion in various clinical situations;



Prosthetics on implants: indications, contraindications, stages of treatment;
Orthopedic treatment of patients with complete tooth loss using implants;
Modern materials for the production of orthopedic structures (metal ceramics, metal-free ceramics, zirconium);
Digital technologies in orthopedic dentistry (CAD/CAM systems);
Orthopedic rehabilitation of patients after surgical interventions in the maxillofacial region;
Oral hygiene in patients with orthopedic structures;
Prevention of complications during orthopedic treatment;
An integrated approach to treating patients with dental defects.

7th semester

Comprehensive rehabilitation of patients with defects of the dental system;
Prosthetics for complete edentia: modern approaches and technologies;
Implantology in orthopedic dentistry: principles, stages, complications;
Prosthetics on implants for complete and partial edentia;
Orthopedic treatment for diseases of the temporomandibular joint (TMJ);
Occlusal disorders: diagnosis and correction methods;
Functional occlusion and its importance in orthopedic dentistry;
Prosthetics for congenital and acquired defects of the maxillofacial region;
Orthopedic treatment of patients after injuries to the maxillofacial region;
Prosthetics for oncological diseases of the maxillofacial region;
Gnathology in orthopedic dentistry;
Errors and complications in prosthetics on implants and their prevention;
Aesthetic dentistry: veneers, lumineers, metal-free structures;
Digital dentistry: 3D modeling, scanning, CAD/CAM technologies;
Modern methods of fixation of orthopedic structures;
New generation materials in orthopedic dentistry;
Psychological aspects of working with patients in orthopedic dentistry;
Interdisciplinary approach in the treatment of dental patients;
Orthopedic treatment of elderly patients;
Evaluation of the effectiveness of orthopedic treatment and quality of life of patients.

8th semester

Modern concepts of complete rehabilitation of the dental system;
Comprehensive interdisciplinary treatment in dentistry (orthopedist, surgeon,



orthodontist);

Prosthetics in complex clinical cases (total defects, severe atrophy of the alveolar processes);

Implantation prosthetics in case of insufficient bone tissue volume;

Immediate loading of implants: indications, benefits, risks;

Digital planning of orthopedic treatment;

3D technologies in orthopedic dentistry (scanning, modeling, printing);

Prosthetics using metal-free structures (zirconium, ceramics);

Aesthetic rehabilitation of patients with defects of teeth and dental arches;

Orthopedic treatment of patients with TMJ dysfunction;

Errors in planning orthopedic treatment and their consequences;

Complications during implantation and prosthetics, their prevention and treatment;

Biocompatibility of dental materials;

Allergic and toxic reactions to orthopedic structures;

Geriatric dentistry: features of prosthetics in elderly patients;

Orthopedic treatment of patients with systemic diseases (diabetes mellitus, osteoporosis, etc.);

Rehabilitation of patients after oncological surgeries in the maxillofacial region;

Legal and ethical aspects in orthopedic dentistry;

Quality control of orthopedic treatment;

Modern trends in the development of orthopedic dentistry.

9th semester

Modern approaches to complete functional and aesthetic rehabilitation of patients with defects of the dental system;

Evidence-based medicine in orthopedic dentistry: principles of choosing treatment methods;

Full-cycle digital dentistry (digital workflow) in orthopedic practice;

Full mouth rehabilitation protocols;

Occlusal concept in modern orthopedic dentistry;

Prosthetics for severe bone tissue atrophy: surgical and orthopedic solutions;

New generation implantation systems and their clinical application;

Immediate and delayed loading of implants: modern protocols;

Complications of implant treatment: diagnosis, prevention and correction;

Prosthetics for complex anatomical and functional disorders;

Functional diagnostics of the masticatory system (gnathology, articulators, digital registration of movements);



Bruxism: impact on orthopedic treatment and correction methods;
Musculoskeletal dysfunctions of the TMJ and complex treatment;
Modern materials in orthopedic dentistry: nanomaterials, bioceramics;
High-level aesthetic dentistry (smile design, digital smile modeling);
Rehabilitation of patients after oncological resections of the maxillofacial region using prostheses and epitheses;
Prosthetics for patients with severe somatic diseases (diabetes, osteoporosis, autoimmune diseases);
Interdisciplinary approach in complex dental rehabilitation;
Clinical errors in orthopedic dentistry and methods of their prevention;
Prospects for the development of orthopedic dentistry in the 21st century.

10th semester.

Complete functional and aesthetic rehabilitation of patients with total tooth loss;
Comprehensive treatment of complex clinical cases in orthopedic dentistry;
Modern digital protocols for total prosthetics (CAD/CAM, 3D printing, digital planning);
Full Mouth Rehabilitation: Planning and Clinical Implementation Stages;
Occlusal diagnostics and restoration of occlusal height in case of complete edentia;
Prosthetics for severe atrophy of jaw bone tissue: surgical and orthopedic methods;
Implantological rehabilitation of patients with complete edentia (All-on-4, All-on-6 and other concepts);
Immediate loading of implants: modern clinical protocols and results;
Complications of implantation treatment and methods of their correction;
Functional diagnostics of the masticatory system: modern methods (electromyography, axiography, digital gnathology);
TMJ dysfunctions: comprehensive diagnostics and interdisciplinary treatment;
Bruxism and its impact on orthopedic structures: diagnosis and treatment;
High-level aesthetic dentistry: digital smile design;
Modern biomaterials in orthopedic dentistry and their clinical application;
Rehabilitation of patients after oncological surgeries in the maxillofacial area (prosthetics and epithetics);
Orthopedic treatment of patients with severe systemic diseases;
Errors in total dentures and their clinical consequences;
Interdisciplinary approach in complex dental rehabilitation;
Quality control and long-term evaluation of orthopedic treatment results;



Prospects for the development of orthopedic dentistry and digital technologies in the future.

Sample situational problems for the discipline:
Situational tasks

Problem 1

A 45-year-old patient presented with difficulty chewing and occasional food ingress into the interdental spaces on the right side of the lower jaw. Objectively: teeth 36 and 37 are missing, with an interdental defect. Teeth 35 and 38 are stable, and the periodontium is free of significant inflammatory changes. The mucous membrane is normal. The bite is intact. What is the clinical diagnosis? Possible complications if left untreated? What is the orthopedic treatment plan?

Problem 2

A 62-year-old patient presented with complaints of difficulty chewing food properly and a loss of facial height. Objectively: complete edentulism of the upper and lower jaws, severe atrophy of the alveolar processes, and thinned, mobile mucosa. What is the clinical diagnosis? What examination methods should be performed? What is the orthopedic treatment plan?

Problem 3

A 30-year-old patient complains of pain in the right temporomandibular joint, clicking when opening the mouth, and limited jaw movement. Symptoms are aggravated by chewing hard foods. What is the clinical diagnosis? What additional tests are needed? What is the treatment plan?

Problem 4

A 40-year-old patient presented with more than 80% decay of the crown of tooth 11. The root is preserved, the canal has been treated, percussion is painless, and there is no mobility. The aesthetic defect is significant. What is the clinical diagnosis? What are the possible orthopedic treatment options? What is the plan for tooth restoration?

Problem 5

A 28-year-old patient presented two weeks after the extraction of tooth 36, complaining of difficulty chewing food on the left side. Objectively, the socket is healing without complications, and the adjacent teeth are intact. What is the



clinical diagnosis? What are the possible methods for restoring the defect? What is the treatment plan?

Problem 6

After receiving a bridge, a 55-year-old patient presented with complaints of loose abutment teeth and discomfort while chewing. Objectively, abutment teeth 24 and 26 showed signs of overload, and the gingiva was hyperemic. What was the clinical diagnosis? What were the potential treatment errors? What is the patient's future management strategy?

Problem 7

A 23-year-old patient presented with complaints of an aesthetic defect in his upper anterior teeth. Objectively, the teeth were intact, with a change in shape and slight discoloration of the enamel, and a normal bite.

Clinical diagnosis? Possible orthopedic treatment methods? Rehabilitation plan?

Problem 8

A 52-year-old patient with partial edentulism in the upper jaw (teeth 14, 15, and 16 are missing) refuses removable dentures for aesthetic reasons. What is the clinical situation? What alternative treatment options are available? What is the patient's management plan?

Problem 9

After a metal-ceramic crown was placed on tooth 46, the patient complains of a high bite and pain when closing the teeth. Objectively: the crown is fixed, but the occlusion is compromised. What is the clinical diagnosis? What is the cause of the complication? What is the dentist's approach?

Problem 10

A 58-year-old patient with type 2 diabetes is scheduled for prosthetic treatment. His condition is well-balanced, his glucose levels are controlled, and he has multiple dental defects. What are the patient's preparation requirements? What are the potential risks? What is the prosthetic treatment plan?

Problem 11

A 35-year-old patient complains of increased tooth wear, sensitivity to cold and hot foods, and decreased bite. Objectively: generalized enamel and dentin wear. Clinical diagnosis? Possible causes? Prosthetic treatment plan?



Problem 12

During an anatomical impression procedure, a 40-year-old patient experiences a severe gag reflex, making the procedure impossible. What is the clinical situation? Methods for preventing the gag reflex? Alternative impression materials?

Problem 13

A 45-year-old patient was referred for implantation in the area of teeth 36 and 37. Objectively: the defect is included, and the bone tissue is moderately atrophic. What examination methods are necessary before implantation? Are there any contraindications? What is the treatment plan?

Problem 14

A 60-year-old patient complains of severe pain when chewing and chafing of the mucous membrane by the denture after receiving a complete removable denture. What is the clinical situation? What are the possible causes of the complication? What is the physician's approach?

Problem 15

A 42-year-old patient has been diagnosed with bruxism, multiple chipped ceramic restorations, increased tooth wear, and complaints of masticatory muscle fatigue. What is the clinical diagnosis? What are the diagnostic methods? What is the comprehensive treatment plan?

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

- testing by section (computer);

Sample test assignments for midterm (modular) assessment:

- **1. The main objectives of orthopedic dentistry include:**

a) treatment of dental caries; b) restoration of the shape and function of the dental system; c) treatment of diseases of the oral mucosa; d) surgical removal of teeth; d) treatment of pulpitis.

- **2. Included defects of the dentition include:**

a) absence of all teeth on the jaw; b) absence of teeth on one side of the jaw; b) absence of one or more teeth with preservation of supporting teeth on both sides; d) absence of front teeth; d) absence of molars.



- **3. A reliable method for diagnosing occlusion is:**
 - a) patient interview; b) oral examination
 - c) use of articulator; d) temperature measurement; d) palpation of soft tissues.
- **4. Central occlusion is determined using:**
 - a) saliva analysis b) determination of facial height at rest d) registration of intermaxillary relationships d) radiography of soft tissues d) thermometry
- **5. Fixed orthopedic structures include:**
 - a) partial denture b) complete denture c) bridge d) mouth guard c) basic denture
- **6. Indications for making a crown are:**
 - a) intact tooth b) destruction of the crown of the tooth more than 50% c) absence of teeth d) third degree tooth mobility d) inflammation of the gums
- **7. Removable dentures include:**
 - a) veneer b) inlay c) clasp denture d) crown ca) pin structure
- **8. The main material for the production of a metal-ceramic crown:**
 - a) plastic b) gypsum c) metal frame and ceramic coating d) cement d) composite only
- **9. The main method of fixing a bridge prosthesis:**
 - a) splinting b) adhesive fixation
 - c) cement fixation d) magnetic fixation d) mechanical fixation without cement
- **10. Functional diagnostic methods in orthopedic dentistry include:**
 - a) determination of tooth color b) occlusion analysis c) blood pressure measurement d) complete blood count d) palpation of lymph nodes

Final control

Final control at the end of the study of the academic discipline it is carried out in the form of an exam, which is exhibited based 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.

	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"

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		



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"


70-72.99%	C-	1.67	2	
67-69.99%	D+	1.33		
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 listener, without receiving grades (awarded to a student if he/she has attended at least 80% of the classes in the additional discipline as a listener).

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.

	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"

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. Orthopedic dentistry. Materials and technologies: textbook / A. I. Abdurakhmanov, O. R. Kurbanov. - 3rd ed. , processed and additional - Moscow: GEOTAR-Media, 2016
2. Orthopedic dentistry (fixed dental prosthetics): textbook / O. R. Kurbanov, A. I. Abdurakhmanov, S. I. Abakarov - Moscow: GEOTAR-Media, 2015
3. Orthopedic dentistry (faculty course): textbook / V. N. Trezubov, A. S. Shcherbakov, L. M. Mishnev; edited by V. N. Trezubova. - 9th ed. , processed and additional - Moscow: GEOTAR-Media, 2019

b) additional literature:

1. Microprosthetics in dentistry: textbook / S. I. Abakarov, D. V. Sorokin, D. S. Abakarova; edited by S. I. Abakarova. - Moscow: GEOTAR-Media,
2. Features of disinfection and sterilization in dentistry: a textbook / edited by BazICyan E. A. - Moscow: GEOTAR-Media,
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. KolesnICov, 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.

	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"

- 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 focus area of "Orthopedic Dentistry" 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 (each body part), 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

	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"


No. p/p	Type	Name	Note
1.	Videos on an interactive whiteboard	<input type="checkbox"/> Diagnosis of diseases of the dental system <input type="checkbox"/> Physiological state of the dental system (normal occlusion and articulation) <input type="checkbox"/> Clinic of partial edentia (defects of dental arches and their classification) <input type="checkbox"/> Complications of orthopedic treatment (errors and complications in prosthetics) <input type="checkbox"/> Orthopedic dentistry (methods of patient examination) <input type="checkbox"/> Pathological abrasion of teeth <input type="checkbox"/> 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

	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"

The research work in the discipline 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 Topics for the 5th Semester

Lecture Topic #1: Clinical examination of an orthopedic patient. Questionnaire, complaints, medical history, and lifestyle. Past and concomitant conditions that impact orthopedic treatment.

1. The purpose of the lecture

To study the specifics of clinical examination of patients in orthopedic dentistry, master the methodology for collecting complaints, medical and life histories, and learn to identify general somatic and dental factors that influence orthopedic treatment planning, the choice of denture design, and the prognosis of patient rehabilitation.

2. The importance of clinical examination in orthopedic dentistry

A clinical examination of a patient in orthopedic dentistry is the basis for diagnosis and subsequent treatment planning. Unlike other areas of dentistry, orthopedic diagnostics aims not only to identify localized dental pathologies but also to comprehensively assess the entire dental system as a functional organ.

The dental system performs several important functions:

- chewing
- speech
- aesthetics
- participation in the formation of facial expressions and profile

A disruption of even one element of this system leads to a functional imbalance, which affects the condition of the temporomandibular joint, muscles, periodontium, and digestive system.

Therefore, the clinical examination of an orthopedic patient includes:

- complaint analysis
- anamnesis collection



- oral examination
- functional tests
- assessment of occlusion and articulation
- TMJ condition analysis

3. Interviewing the patient as the first stage of diagnosis

The interview is a crucial step in the initial consultation. It provides an initial understanding of the patient's condition and guides further examination.

The survey includes:

- clarification of complaints
- collecting anamnesis of the disease
- collection of anamnesis of life
- identification of associated risk factors

The doctor should conduct the conversation consistently, clarifying details, since patients often do not attach importance to important symptoms.

4. Patient complaints in orthopedic dentistry

The patient's complaints reflect functional and aesthetic disorders.

4.1. Main complaints:

Most often, patients seek help with:

- absence of one or more teeth (partial or complete adentia)
- difficulty chewing
- aesthetic defect (change in smile, sunken cheeks, senile appearance of the face)
- speech impairment (lisp, pronunciation defects)
- destruction of the crown of the teeth
- tooth mobility

These complaints directly indicate the need for orthopedic intervention.



4.2. Additional complaints:

- discomfort when wearing old dentures
- rubbing of the mucous membrane
- TMJ pain
- clicking and crunching in the joint
- fatigue of the masticatory muscles
- dry mouth

Additional complaints often indicate complications or improperly performed prosthetics.

5. Anamnesis morbi

The medical history allows us to establish the reason for the visit and the dynamics of the development of the pathological process.

Main questions:


- when did tooth loss begin?
- cause of loss (caries, trauma, periodontitis)
- sequence of tooth loss
- Was treatment carried out previously?
- were prostheses used?
- service life of old structures
- reasons for their breakage or removal
- the presence of progressive malocclusion

Clinical significance of the disease history

Long-term absence of teeth leads to:

- displacement of adjacent teeth
- nomination of antagonists
- occlusion violation
- alveolar ridge atrophy
- decreased chewing efficiency

The longer the defect exists, the more difficult the orthopedic treatment.

	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"

6. Anamnesis vitae

A life history allows us to assess the general condition of the body and identify risk factors that affect orthopedic treatment.

6.1. General somatic diseases

Of particular importance are:

- cardiovascular diseases (hypertension, coronary heart disease)
- diabetes mellitus
- thyroid disease
- blood diseases
- chronic infections
- gastrointestinal diseases

These conditions affect tissue healing, adaptation to prostheses and the choice of materials.

6.2. Allergic history

It is very important in orthopedic dentistry, as various materials are used:


- metals (nickel, cobalt, chromium)
- acrylic plastics
- anesthetics
- adhesive and fixing materials

Allergies can manifest themselves in:

- stomatitis
- burning of the mucous membrane
- edema
- redness

6.3. Bad habits

- smoking (impairs blood supply to the periodontium, reduces the fixation of dentures)
- alcohol

	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"

- bruxism (nighttime teeth grinding)
- incorrect chewing habits

6.4. Professional factors

- harmful chemicals
- increased speech load
- stressful professions (contribute to bruxism)

7. The impact of concomitant diseases on orthopedic treatment

7.1 Diabetes mellitus

- delayed healing of the mucous membrane
- high risk of inflammation
- the need for careful hygiene
- preference for gentle designs

7.2. Cardiovascular diseases

- limitation of surgical interventions
- caution during anesthesia
- stress-limited intake

7.3. Periodontal diseases

- tooth mobility
- the need for splinting
- decreased supporting function of teeth

7.4. Gastrointestinal diseases

- violation of full chewing
- deterioration of digestion
- the need to restore chewing efficiency

7.5. Allergic diseases

- selection of hypoallergenic materials
- preference for metal-free structures
- exclusion of acrylates in the reaction



8. Features of clinical examination of an orthopedic patient

After the survey, an objective examination is carried out.

8.1. Examination of the oral cavity

- condition of the dentition
- presence of defects
- degree of tooth decay
- oral hygiene
- condition of the mucous membrane

8.2. Occlusion assessment

- type of bite (orthognathic, distal, mesial)
- presence of supracontacts
- tooth displacement
- closure failure

8.3. TMJ examination

- range of motion
- presence of pain
- clicks, crunching
- deviation of the lower jaw

8.4. Periodontal condition

- bleeding
- tooth mobility
- pocket depth
- gum recession

9. The importance of history and examination for treatment

Correctly collected data allows you to:

- make an accurate diagnosis
- determine indications for prosthetics
- select the type of construction (removable / non-removable)



- assess the treatment prognosis
- prevent complications
- improve the effectiveness of patient adaptation

10. Conclusion

A clinical examination of an orthopedic patient is a complex, multi-stage process that includes a survey, analysis of complaints, collection of a life and medical history, and an objective examination of the dental system.

The quality of diagnostics directly influences the choice of orthopedic design, the functional outcome of treatment, and the patient's long-term adaptation.

Lecture Topic #2: Examination of the face, dentition, oral mucosa and tongue for further prosthetics. Palpation. Percussion. Probing. Auscultation.

Laboratory research methods: EOD, EMG, anthropometric. Rheography of the periodontium and joints. Mastication. Galvanometry, pH-metry of saliva. Orthopantomogram. Targeted radiography.

1. The purpose of the lecture

To study methods of clinical and additional examination of an orthopedic patient, learn to assess the condition of the face, dentition, oral mucosa and tongue, and apply modern functional and instrumental diagnostic methods to plan orthopedic treatment and prosthetics.

2. The importance of examination in orthopedic dentistry

Examination of a patient in orthopedic dentistry is aimed at a comprehensive assessment of:

- anatomical state of the dental system
- functional state of the masticatory apparatus
- conditions of the mucous membrane and periodontium
- work of the temporomandibular joint
- occlusal relationships



The peculiarity of orthopedic diagnostics lies in the need to evaluate not only individual teeth, but the entire functional system as a whole.

3. Examination of the patient

3.1. Facial examination

During an external examination, the following is assessed:

- facial symmetry
- height of the lower third of the face
- severity of nasolabial folds
- presence of sunken cheeks (in the absence of teeth)
- facial profile (straight, convex, concave)
- lip condition (closure, tension)

Facial changes often reflect the extent of tooth loss and decreased bite height.

3.2. Examination of the dental arches

Rated by:

- integrity of the dentition
- presence of defects (partial or complete adentia)
- deformations of the dental arches
- tooth displacement
- presence of supra- and infraocclusion
- abrasion of hard dental tissues
- condition of fillings and dentures

3.3. Examination of the oral mucosa

Rated by:

- color of the mucous membrane (normal - pale pink)
- humidity
- presence of inflammation
- hyperemia or atrophy
- ulcers, erosions, scars
- condition of the prosthetic bed



3.4. Examination of the tongue

- size and shape of the tongue
- presence of plaque
- cracks, teeth marks
- mobility
- sensitivity
- condition of the papillae

The tongue often reflects the general condition of the body and adaptation to prostheses.

4. Palpation

Palpation is used to assess soft tissues and functional structures.

Rated by:

- pain in the chewing muscles
- muscle tone
- seals
- condition of the mucous membrane
- lymph nodes
- TMJ area

In case of pathology, pain, hypertonicity or muscle asymmetry may be detected.

5. Percussion

Percussion is used to assess the condition of teeth:

- vertical percussion - determines periodontal inflammation
- horizontal percussion - evaluates the lateral periodontal tissues

Positive tenderness may indicate:

- periodontitis
- tooth overload
- inflammatory processes



6. Probing

Used for:

- assessment of the depth of periodontal pockets
- detection of carious cavities
- determining the state of marginal fit of prostheses

Probing allows us to determine the extent of damage to the periodontium and dental tissues.

7. Auscultation

In orthopedic dentistry it is used to examine the temporomandibular joint:

Rated by:

- presence of clicks
- crunching when moving
- friction of articular surfaces

This is important when diagnosing TMJ dysfunction.

8. Laboratory and functional research methods

8.1. Electroodontodiagnostics (EOD)

Method for assessing the vitality of dental pulp.

Allows you to determine:

- is the tooth alive?
- degree of pulp inflammation
- pulp necrosis

The higher the irritation threshold, the more severe the pulp damage.

8.2. Electromyography (EMG)

Investigates the bioelectrical activity of the masticatory muscles.

Allows you to:



- evaluate muscle work
- identify imbalances
- diagnose bruxism
- monitor adaptation to prostheses

8.3. Anthropometric methods

Used for:

- measuring facial proportions
- assessment of the bite height
- symmetry analysis

They allow to determine the aesthetic parameters of prosthetics.

8.4. Rheography of the periodontium and joints

Method for studying tissue blood supply.

Allows you to:

- assess microcirculation in the periodontium
- identify vascular disorders
- assess the condition of the TMJ

Used for periodontitis and functional disorders.

8.5. Mastication

Method of recording chewing movements.

Allows you to determine:

- chewing efficiency
- coordination of movements of the lower jaw
- dysfunction of the masticatory apparatus

8.6. Galvanometry

Investigates the presence of galvanic currents in the oral cavity.



Reasons:

- various metal structures
- corrosion of materials

Symptoms:

- metallic taste
- burning sensation of the mucous membrane

8.7. Saliva pH-metry

Assesses the acid-base balance of the oral cavity.

Norm: slightly alkaline environment.

Meaning:

- low pH → risk of caries and inflammation
- high pH → decreased protective properties of saliva

9. Radiological examination methods

9.1. Orthopantomogram (OPTG)

General view of both jaws.

Allows you to:

- evaluate all teeth
- identify hidden foci of inflammation
- determine the condition of bone tissue
- diagnose impacted teeth
- assess the periodontium

It is a mandatory method before prosthetics.

9.2. Targeted radiography

Used for detailed examination of one or more teeth.



Allows you to:

- evaluate the roots of the teeth
- identify periapical changes
- monitor endodontic treatment
- assess the quality of canal filling

10. The importance of a comprehensive examination

Using all methods allows:

- make an accurate diagnosis
- identify functional disorders
- choose the optimal design of the prosthesis
- predict the outcome of treatment
- prevent complications
- improve the quality of orthopedic rehabilitation

11. Conclusion

Clinical and additional examination of an orthopedic patient is a multi-layered process, incorporating visual, functional, and instrumental diagnostic methods. Only a comprehensive approach ensures proper orthopedic treatment planning and the achievement of stable functional and aesthetic results.

Lecture Topic No. 3. The main nosological entities of diseases subject to treatment in an orthopedic dentistry clinic. Drawing up an orthopedic treatment plan and choosing a prosthetic design. Medical history and work order. Rules for completing the medical history of an orthopedic patient. The importance of the medical history as a scientific, medical, and legal document.

1. The purpose of the lecture

Explore the main clinical entities treated in orthopedic dentistry, master the principles of developing an orthopedic treatment plan, and select a prosthetic design. Review the rules for maintaining an orthopedic patient's medical record and creating a work order, as well as the importance of medical documentation as a clinical, scientific, and legal document.



2. The main nosological forms of diseases in orthopedic dentistry

Orthopedic dentistry deals with the diagnosis and treatment of diseases accompanied by a violation of the integrity and function of the dental system.

2.1. Main groups of diseases:

1) Partial and complete edentia

- absence of one, several, or all teeth
- the most common reason for visiting an orthopedic clinic
- leads to disruption of chewing, speech and aesthetics

2) Defects of dental arches

- included defects
- end defects
- combined defects
- multiple defects

The classification is often carried out according to Kennedy.

3) Pathological abrasion of teeth

- increased abrasion of enamel and dentin
- reduction of the bite height
- functional and aesthetic disorders

4) Deformations of the dental arches

- tilting and displacement of teeth
- nomination of antagonists
- crowded teeth
- occlusion violation

5) Periodontal diseases (in the orthopedic aspect)

- periodontitis
- periodontosis
- tooth mobility
- the need for splinting



6) Defects of hard dental tissues

- destruction of the crown of the tooth
- after caries
- after injuries
- after endodontic treatment

7) Temporomandibular joint disorders

- TMJ dysfunction
- pain syndrome
- clicks, crunching
- limitation of movement

3. Drawing up an orthopedic treatment plan


The treatment plan is individualized and based on clinical and additional examination data.

3.1. Stages of planning:

1. making a diagnosis
2. assessment of the patient's general condition
3. analysis of the dental system
4. determination of indications and contraindications
5. choice of prosthetic method
6. oral cavity preparation
7. manufacturing of a prosthesis
8. patient adaptation

3.2. Planning principles:

- individual approach
- functionality
- biocompatibility
- aesthetics
- durability of the structure
- economic feasibility

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

4. Selecting the prosthesis design

The choice of design depends on:

- type of defect
- condition of the supporting teeth
- periodontal conditions
- bite height
- patient's age
- general health

4.1. Main types of structures:

Fixed dentures:

- crowns
- bridge prostheses
- inlays and onlays
- implantological structures

Removable dentures:

- partial plate dentures
- clasp dentures
- complete removable dentures

4.2. Selection criteria:

- for minor defects → fixed structures
- for large defects → removable or combined
- for periodontitis → splinting clasp dentures
- in case of complete edentia → complete removable dentures

5. Medical history of an orthopedic patient

The medical history is the main medical document reflecting the entire process of examination and treatment of the patient.

5.1. Structure of the medical history:

- passport details



- complaints
- medical history
- life history
- objective examination
- additional research methods
- diagnosis
- treatment plan
- stages of treatment
- treatment results

6. Work order in orthopedic dentistry

A work order is an official document sent to a dental laboratory.

6.1 Contents:

- patient data
- type of construction
- material of manufacture
- stages of work
- deadlines
- doctor's signature


6.2. Meaning:

- legal liability
- quality control of work
- interaction between doctor and technician
- documentation of prosthesis manufacturing

7. Rules for filling out a medical history

Basic requirements:

- complete and accurate completion of all sections
- use of medical terminology
- clear description of defects
- justification of diagnosis
- recording of all stages of treatment
- indication of materials used

	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"

Typical mistakes:

- incomplete anamnesis
- lack of justification for diagnosis
- there is no treatment plan
- incorrect description of the defect
- lack of treatment dynamics

8. The importance of the medical history as a document

8.1 Medical significance:

- basis of diagnostics
- treatment control
- analysis of therapy effectiveness
- base for retreatment

8.2. Scientific significance:

- research material
- clinical observations
- statistical analysis
- development of new treatment methods


8.3. Legal significance:

- confirmation of assistance provided
- protection of doctor and patient
- proof of treatment quality
- document in legal proceedings

9. Conclusion

Orthopedic dentistry covers a wide range of conditions associated with the integrity and function of the dental system. Proper treatment planning and prosthetic design directly depend on the quality of clinical examination and diagnostics.

The medical history and work order are not only medical, but also legally significant documents that ensure quality control of treatment and the responsibility of the physician.

	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"

Lecture Topic No. 4. Orthopedic treatment methods for patients with dental crown hard tissue defects due to carious and non-carious lesions. IROPZ. Clinical examination and patient analysis. Inlays. Types. Methods and clinical and laboratory stages of manufacture. Indications for use and features of cavity formation during inlay prosthetics depending on the defect topography.

1. The purpose of the lecture

To study methods of orthopedic treatment of patients with defects of hard tissues of the dental crown, to master the classification and clinical significance of the index of destruction of the occlusal surface of the tooth (IODZ), to consider the indications for the use of inlays, their types, as well as the clinical and laboratory stages of manufacture and the features of cavity formation depending on the location of the defect.

2. Defects of hard tissues of the tooth crown


Defects of hard dental tissues are a violation of the anatomical shape of the crown due to carious or non-carious lesions.

2.1. Carious lesions:

- deep caries
- complicated caries (pulpitis, periodontitis with destruction of the crown)
- secondary caries under fillings

2.2 Non-carious lesions:

- wedge-shaped defects
- pathological abrasion
- enamel erosion
- traumatic chips
- enamel hypoplasia

	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"

3. Index of destruction of the occlusal surface of the tooth (IODT)

IROPZ is an indicator used to assess the degree of destruction of the crown of the tooth and to select a method of orthopedic treatment.

3.1. Index value:

- 0–0.2 – minor defects (filling)
- 0.2–0.5 — medium defects (inlays)
- 0.5–0.8 — pronounced defects (crowns)
- 0.8 - significant destruction (pin structures, removal)

3.2 Clinical significance:

IROPZ helps:

- choose a restoration method
- predict the longevity of a tooth
- determine indications for inlays or crowns

4. Methods of orthopedic treatment of tooth crown defects

4.1 Direct methods:

- filling with composites
- glass ionomer cements

4.2. Indirect methods (orthopedic):

- tabs (inlay, onlay, overlay)
- veneers
- crowns
- pin structures

5. Inlays as a method of tooth restoration

An inlay is a non-removable microprosthetic structure manufactured in a laboratory and fixed into the cavity of a tooth to restore its anatomical shape and function.



6. Types of tabs

6.1. Based on the material:

- metal (cast alloys)
- ceramic (porcelain, zirconium)
- composite

6.2. By design:

- inlay - intracoronal inlay
- onlay - with overlapping bumps
- overlay - complete covering of the chewing surface
- pinley - with additional fixation with pins

7. Indications for the use of inlays

Tabs are used when:

- carious cavities of classes II, III, IV according to Black
- defects after treatment of deep caries
- partial destruction of the crown (IROPZ 0.2–0.5)
- the need to restore the anatomy of the chewing surface
- increased aesthetic requirements
- impossibility of high-quality filling

8. Contraindications

- deep subgingival defects
- high caries activity without sanitation
- pronounced tooth mobility
- poor oral hygiene
- IROPS > 0.5 (crowns are more often indicated)

9. Features of the formation of cavities for inlays

The shape of the cavity is determined by the principles of retention, stability and prevention of displacement of the inlay.



9.1 Basic requirements:

- the walls should be slightly divergent
- absence of undercuts
- clear boundaries
- rounded internal corners
- creation of mechanical retention

9.2. Features of the defect topography:

Class I (chewing surface):

- a cavity of oval or rectangular shape
- preservation of tubercles
- creating parallel walls

Class II (proximal surfaces):

- formation of a "box-shaped" cavity
- extension for access
- protection of the adjacent tooth

Class III (incisor teeth, proximal defects):

- gentle preparation
- maximum preservation of aesthetics
- thin walls

Class IV (with crown angle violation):

- complex combined form
- an onlay or crown is often required

10. Clinical and laboratory stages of inlay production

10.1 Clinical stages:

1. patient examination
2. diagnosis and treatment plan
3. cavity preparation
4. taking an impression



5. color determination (for ceramics)
6. temporary restoration
7. Trying on the tab
8. cement fixation

10.2. Laboratory stages:

1. casting a plaster model
2. tab modeling
3. manufacturing (casting/pressing/CAD-CAM)
4. processing and polishing
5. quality control

11. Clinical reception and analysis of patients

At a clinical appointment, the doctor:

- collects complaints (pain, aesthetics, sensitivity)
- conducts examination and diagnostics
- determines the IRPZ
- selects a recovery method
- draws up a treatment plan
- demonstrates a clinical case (analysis)

12. Features of clinical analysis

When analyzing patients, the following are assessed:

- degree of crown destruction
- pulp condition
- occlusal contacts
- oral hygiene
- tooth prognosis

13. Conclusion

Inlays are a highly effective method for restoring dental hard tissue defects with moderate crown damage. Their use allows for the preservation of tooth anatomy, restoration of chewing function, and long-lasting clinical results.



The IROPZ is a key diagnostic criterion for choosing between a filling, an inlay, and a crown.

Lecture Topic #5. Metal crowns. Types (stamped, cast). Indications and contraindications for their use. Tooth preparation for stamped and cast metal crowns. Assessment of preparation quality.

1. The purpose of the lecture

Explore the types of metal crowns, their clinical and biological characteristics, and their indications and contraindications. Master the principles of tooth preparation for stamped and cast metal crowns, as well as the criteria for assessing the quality of tooth preparation for prosthetics.

2. General characteristics of metal crowns

Metal crowns are permanent orthopedic structures made entirely of metal that cover the crown of a tooth to restore its shape, function, and protect it from further decay.

Key Features:

- high strength
- durability
- minimal abrasion
- good adaptation to chewing load
- low aesthetics (limited use in the smile zone)


3. Types of metal crowns

3.1. Stamped metal crowns

These are crowns made by stamping from standard metal sleeves.

Characteristic:

- thin (0.2–0.3 mm)
- are produced quickly
- require minimal laboratory stage
- most often made of stainless steel or alloys

	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"

Flaws:

- imprecise fit
- risk of subgingival injury
- low anatomical accuracy
- development of secondary caries

3.2. Solid metal crowns

They are made using a casting method using an individual wax model.

Characteristic:

- high precision fit
- anatomically accurate shape
- strength higher than stamped ones
- the possibility of precise occlusal correction

Advantages:

- high functionality
- durability
- biological adaptation

4. Indications for the use of metal crowns

4.1. General indications:

- significant destruction of the crown of the tooth
- restoration of tooth shape after treatment
- protection of depulped teeth
- supporting teeth for bridge prostheses
- increased tooth wear

4.2. For stamped crowns:

- temporary structures
- limited financial resources
- lack of high aesthetic requirements



4.3. For cast crowns:

- chewing group of teeth
- supporting teeth of bridge prostheses
- occlusion restoration
- bruxism and increased chewing load

5. Contraindications

General contraindications:

- severe allergy to metal
- low clinical crown of the tooth
- acute inflammatory periodontal diseases
- poor oral hygiene
- active untreated caries

Relative contraindications:

- smile zone (aesthetics)
- thin tooth walls
- severe tooth mobility

6. Preparation of teeth for metal crowns

Preparation is the controlled removal of hard dental tissue to create a shape that will provide fixation and stability for the crown.

7. Preparation for stamped crowns

7.1 Basic principles:

- minimal tissue removal
- creation of a cylindrical shape
- parallelism of walls
- absence of undercuts

7.2. Stages:

1. separation of contact surfaces
2. reduction of the occlusal surface (1–1.5 mm)



3. formation of walls with minimal taper
4. smoothing edges

7.3. Features:

- no pronounced ledge is formed
- a supragingival margin location is often used
- fit errors are possible

8. Preparation for cast crowns

8.1 Basic principles:

- anatomical restoration of shape
- creating a clear ledge
- ensuring retention
- uniform removal of tissues

8.2. Stages:

1. occlusal preparation (1.5–2 mm)
2. reduction of the vestibular and oral surfaces
3. formation of a ledge (usually shoulder or rounded)
4. creating a taper of 6–10°
5. smoothing and finishing

8.3. Features:

- mandatory formation of a ledge
- precise observance of tooth anatomy
- control of occlusal contacts

9. Assessment of the quality of preparation

9.1. Main criteria:

1) *Shape of the tooth stump:*

- correct taper
- absence of undercuts
- sufficient height



2) *Ledge:*

- clear and uniform
- correct width (0.5–1.2 mm)
- without overhanging edges

3) *Surface smoothness:*

- lack of steps
- absence of roughness
- uniform processing

4) *Occlusal reduction:*

- sufficient space for metal
- absence of bite overload

5) *Biological criteria:*

- absence of pulp trauma
- periodontal preservation
- minimal invasion

10. Preparation errors

- excessive tissue removal
- insufficient reduction (crown overload)
- absence of a ledge (for cast crowns)
- excessive taper (loss of fixation)
- gum damage

11. Conclusion

Metal crowns remain an important method of orthopedic treatment, especially for chewing teeth. Stamped crowns are used sparingly, primarily as temporary restorations. Cast crowns are more modern and precise, providing high functionality and durability.

The quality of preparation is a key factor in the success of orthopedic treatment and directly affects the fixation and service life of the crown.



Lecture Topic No. 6. Methods for taking impressions using various impression materials and criteria for their evaluation. Methods for fitting single metal crowns. Rules and sequence for crown cementation.

1. The purpose of the lecture

Explore modern methods of taking impressions in orthopedic dentistry using various impression materials and master the criteria for assessing impression quality. Review the fitting technique for single metal crowns and the sequence of their final cementation.

2. The Importance of Impressions in Orthopedic Dentistry

The impression is one of the key stages of prosthetics, as it:

- reflects the anatomy of the teeth and oral tissues
- serves as a basis for the production of prostheses
- determines the accuracy of the fit of structures
- affects the functional and aesthetic outcome of treatment

Errors at the stage of obtaining an impression lead to:

- inaccuracies of prostheses
- poor fixation of crowns
- secondary caries
- periodontal trauma

3. Classification of impression materials

3.1. By elasticity:

Elastic materials:

- alginate masses
- silicone materials (C-silicones, A-silicones)
- polyester materials
- thiokol (polysulfide) masses



Inelastic materials:

- gypsum
- thermoplastic materials
- zinc-eugenol pastes

4. Methodology for obtaining impressions

4.1. Alginate masses

Indications:

- diagnostic models
- temporary structures
- removable dentures

Methodology:

1. spoon selection
2. kneading the mass
3. even distribution in a spoon
4. introduction into the oral cavity
5. fixation before polymerization
6. removing the impression in one motion

Peculiarities:

- quick setting
- low accuracy compared to silicones
- the need for immediate casting of the model

4.2. Silicone materials

Indications:

- fixed structures
- crowns and bridges

Methodology (two-layer):

1. preliminary (base) layer
2. corrective layer



3. introduction into the oral cavity
4. fixation
5. complete curing

Advantages:

- high precision
- dimensional stability
- possibility of repeated control

4.3. Polyester materials

- high precision
- hardness after polymerization
- used for complex prostheses

5. Criteria for assessing the quality of the print

5.1 Anatomical accuracy:

- clear display of teeth
- precise interdental spaces
- absence of distortion

5.2. Edge quality:

- gum line clarity
- absence of gaps
- no streaks

5.3. Integrity:

- absence of bubbles
- absence of material breaks
- absence of deformation

5.4 Functional suitability:

- accurate display of prepared teeth
- sufficient depth of the gingival sulcus
- clear fixation of the ledge



6. Fitting of single metal crowns

Fitting is the stage of checking and adjusting the finished crown before final fixation.

7. Fitting stages

7.1. Checking the fit on the tooth stump:

- the crown should fit completely without any effort
- absence of cracks
- tight fit to the ledge

7.2. Checking the marginal fit:

- absence of gaps
- absence of overhanging edges
- uniform contact around the entire perimeter

7.3. Occlusion check:

- contacts with antagonists
- absence of overbite
- uniform load distribution

7.4 Checking contact points:

- tight contact with adjacent teeth
- absence of trauma to the gingival papilla

7.5. Correction:

- grinding of metal areas
- bite adjustment
- re-check landing

8. Fixation of crowns

9. Fixation materials

Main cements:

- phosphate cement
- glass ionomer cement



- polycarboxylate cement
- temporary cements (zinc oxide eugenol)

10. Sequence of crown fixation

1. Tooth preparation:

- cleansing the stump
- isolation from saliva
- drying

2. Preparing the crown:

- internal surface treatment
- degreasing
- drying

3. Mixing cement:

- strictly according to the instructions
- achieving a creamy consistency

4. Application of cement:

- evenly inside the crown
- without air bubbles

5. Installing the crown:

- tooth seating with pressure
- control of correct position

6. Removing excess cement:

- until completely hardened
- especially in the interdental spaces

7. Bite control:

- occlusion check
- correction if necessary



8. Recommendations for the patient:

- do not eat for 1–2 hours
- maintain hygiene
- follow-up inspection

11. Fixation errors

- excess cement → gum inflammation
- lack of cement → poor fixation
- incorrect fit of the crown
- overbite
- saliva contamination

12. Conclusion

The quality of orthopedic treatment directly depends on the accuracy of the impression, the proper fit, and the adherence to the crown fixation technology. Each stage requires strict adherence to clinical guidelines, as even minor errors can reduce the lifespan of the prosthesis and lead to complications.

Lecture Topic #7: One-visit plastic crown manufacturing technology. Advantages and disadvantages of plastic crowns. Metal-acrylic crowns. Indications and contraindications for their use. Clinical and laboratory manufacturing stages.

1. The purpose of the lecture

Learn the technology for producing temporary and permanent plastic crowns in a single visit, and consider their advantages and disadvantages. Understand the indications and contraindications for the use of metal-acrylic crowns, as well as the key clinical and laboratory stages of their fabrication.

2. Plastic crowns

A plastic crown is an orthopedic structure made of acrylic or composite materials that covers the crown of a tooth to restore its shape, aesthetics, and temporary or permanent function.



3. Technology for making a plastic crown in one visit

This method is used mainly for temporary prosthetics.

3.1. Indications for one-stage manufacturing:

- protection of the prepared tooth
- temporary restoration of aesthetics
- preparation for permanent prosthetics
- use in the smile zone during treatment

3.2. Manufacturing stages:

1. *Tooth preparation:*

- uniform removal of tissues
- formation of a ledge (or without it for temporary crowns)
- creation of retention

2. *Taking an impression or using a silicone key:*

- preliminary impression before preparation
- or silicone template

3. *Making a temporary crown:*

- filling the template with plastic mass
- installation on the tooth
- polymerization of the material in the mouth or outside the oral cavity

4. *Removal and processing:*

- crown extraction
- removal of excess
- grinding and polishing

5. *Fixation:*

- temporary cement
- bite control



4. Advantages of plastic crowns

- fast production times
- low cost
- satisfactory aesthetics
- ease of correction
- protection of pulp and dental tissues
- possibility of use as a temporary structure

5. Disadvantages of plastic crowns

- low strength
- rapid wear
- color change (pigmentation)
- porosity of the material
- limited service life
- possible toxicity of the monomer if the technology is violated

6. Metal-acrylic crowns

A metal-acrylic crown is a combined orthopedic structure consisting of a metal frame and acrylic plastic lining.

7. Indications for the use of metal-acrylic crowns

- restoration of the chewing group of teeth
- temporary and permanent structures
- supporting teeth of bridge prostheses
- restoration of significant crown defects
- the need to combine strength and aesthetics

8. Contraindications

- allergy to acrylic materials
- low clinical height of the tooth crown
- severe inflammatory periodontal diseases
- severe bruxism
- poor oral hygiene
- expressed aesthetic requirements (ceramics are better)



9. Clinical and laboratory stages of manufacturing metal-acrylic crowns

10. Clinical stages

1. Patient examination:

- making a diagnosis
- choice of design

2. Tooth preparation:

- uniform removal of tissues
- ledge formation
- creation of an anatomical shape of the stump

3. Obtaining impressions:

- alginate or silicone masses
- imprint of antagonists
- bite registration

4. Making a temporary crown:

- tooth protection during manufacturing

5. Trying on the metal frame:

- landing check
- correction if necessary

6. Trying on the cladding:

- aesthetics assessment
- bite check

7. Final fixation:

- crown cementation
- occlusion control



11. Laboratory stages

1. Model casting:

- plaster model from an impression

2. Making a wax model:

- anatomical shape modeling

3. Casting of metal frame:

- wax melting
- metal pouring

4. Frame processing:

- grinding
- fitting on a model

5. Plastic cladding:

- acrylic application
- polymerization

6. Polishing:

- smoothing
- aesthetic treatment

12. Complications when using plastic and metal-acrylic crowns

- gum inflammation
- secondary caries
- chipped cladding
- color change
- malocclusion



13. Conclusion

Plastic crowns are widely used as temporary structures due to their simplicity and speed of manufacture, but they have limited strength and service life.

Metal-acrylic crowns are a more durable alternative, combining a metal frame and aesthetic veneers, and are used as an intermediate or permanent prosthetic option.

The success of treatment depends on precise adherence to clinical and laboratory stages and the correct choice of design.

Lecture Topic #8: Metal-ceramic crowns. Indications and contraindications for their use. Clinical and laboratory stages of fabrication.

1. The purpose of the lecture

Explore the design of metal-ceramic crowns, their clinical capabilities, indications, and contraindications. Master the key clinical and laboratory stages of metal-ceramic crown fabrication and the principles of achieving aesthetic and functional results.

2. General characteristics of metal-ceramic crowns

A metal-ceramic crown is a fixed orthopedic structure consisting of:

- **metal frame**, providing strength
- **ceramic cladding**, providing aesthetics

This design combines the high mechanical resistance of metal and the aesthetic properties of ceramics.

3. Advantages of metal-ceramic crowns

- high strength and durability
- good aesthetics (especially in the frontal area)
- resistance to chewing load
- biocompatibility of modern alloys
- the possibility of restoring the anatomical shape of the tooth
- wide clinical application



4. Disadvantages of metal-ceramic crowns

- the need for significant tooth preparation
- risk of chipping of ceramic tiles
- the possibility of a gray tint appearing on the gums (metal edge)
- high cost compared to metal crowns
- the need for precise laboratory equipment

5. Indications for the use of metal-ceramic crowns

5.1 Clinical indications:

- significant destruction of the crown of the tooth
- restoration of depulped teeth
- aesthetic defects of the anterior teeth
- anomalies in the shape and color of teeth
- increased abrasion of hard tissues

5.2. Functional indications:

- restoration of chewing function
- supporting teeth of bridge prostheses
- occlusion correction
- stabilization of the dentition

6. Contraindications

6.1 Absolute:

- allergy to metals or ceramic components
- severe tooth mobility (grade III)
- acute inflammatory processes of the periodontium

6.2 Relative:

- low clinical crown of the tooth
- deep bite with pronounced load
- bruxism (without protective mouth guards)
- poor oral hygiene
- young patients with a large pulp chamber



7. Clinical and laboratory stages of manufacturing metal-ceramic crowns

8. Clinical stages

1. Examination of the patient

- anamnesis collection
- clinical examination
- X-ray diagnostics
- determination of indications

2. Tooth preparation

- uniform removal of hard tissue
- creating a ledge (shoulder or rounded)
- providing sufficient space for metal and ceramics
- formation of a taper of 6–10°

3. Obtaining impressions

- high-precision silicone materials
- imprint of antagonists
- central occlusion registration

4. Making a temporary crown

- tooth protection
- preserving aesthetics
- prevention of tooth displacement

5. Trying on the metal frame

- landing check
- assessment of marginal fit
- occlusion correction

6. Fitting the facing (ceramics)

- assessment of shape and color
- checking contacts
- refinement of aesthetics



7. Final fixation

- cementing
- bite control
- removal of excess cement

9. Laboratory stages

1. Making a plaster model

- obtaining a working model from an impression

2. Modeling the wax frame

- anatomical modeling
- occlusion accounting

3. Casting of metal frame

- replacing wax with metal
- processing and fitting

4. Frame processing

- grinding
- checking the landing accuracy

5. Application of ceramic mass

- layer-by-layer application
- anatomy and color modeling

6. Firing ceramics

- high-temperature processing
- formation of a strong structure

7. Glazing

- adding shine
- final aesthetic treatment



10. Assessment of the quality of a metal-ceramic crown

Clinical criteria:

- precise marginal fit
- absence of overhanging edges
- correct occlusal contacts
- natural aesthetics
- absence of gum trauma

Laboratory criteria:

- frame accuracy
- uniformity of the ceramic layer
- absence of pores and cracks
- matching the color of adjacent teeth

11. Possible complications

- ceramic chips
- gum inflammation
- secondary caries
- occlusion violation
- aesthetic disharmony

12. Conclusion

Metal-ceramic crowns are one of the most versatile and widely used types of fixed prosthetics. They provide an optimal combination of strength and aesthetics, making them effective for both anterior and posterior teeth.

The success of treatment depends on precise adherence to all clinical and laboratory stages, correct tooth preparation, and the correct choice of design.

Lecture Topic #9: Peculiarities of tooth preparation and obtaining double impressions. Gingival retraction. Methods and materials for gingival retraction. Procedure methodology. Clinical examination and patient analysis.



1. The purpose of the lecture

Learn the specifics of tooth preparation for fixed prosthetics, taking into account marginal fit requirements, and master the technique of taking double (two-layer) impressions. Review methods and materials for gingival retraction, its technique, and clinical significance. Understand the specifics of clinical appointments with orthopedic patients.

2. Features of tooth preparation in the manufacture of precision structures

Tooth preparation in fixed prosthetics is aimed at creating an optimal stump shape that ensures:

- prosthesis retention
- structural stability
- precise marginal fit
- preservation of the periodontium and pulp

2.1. Basic principles of preparation:

- maximum preservation of hard dental tissues
- formation of uniform taper (6–10°)
- creating a clear ledge (for precision crowns)
- absence of undercuts
- smooth surfaces of the stump

2.2. Features of the marginal crown placement:

- the ledge line must be clear and continuous
- minimal trauma to the gums
- taking into account biological width
- elimination of overhanging restoration margins

3. Obtaining double (two-layer) impressions

Double impression is a method of obtaining a highly accurate image of a row of teeth using two layers of impression material.



3.1. Purpose of the method:

- high accuracy of display of prepared teeth
- fixing the boundaries of the ledge
- improving the marginal fit of crowns

3.2. Materials:

- silicone materials (A-silicones, C-silicones)
- polyester masses
- low-viscosity corrective pastes

3.3. Method of obtaining:

1. *First (main) layer:*

- high viscosity base mass print
- formation of a preliminary form

2. *Oral cavity preparation:*

- gingival retraction
- drying the working field

3. *Second (corrective) layer:*

- introduction of liquid mass
- precise display of the ledge and cervical zone

4. *Fixation:*

- installing a spoon
- waiting for polymerization
- careful extraction

4. Gum retraction

Gingival retraction is a temporary mechanical or medicinal movement of the gingival margin in order to open the periodontal sulcus and obtain an accurate impression.



5. Objectives of retraction:

- exposure of the preparation margin
- improving the quality of the print
- control of the marginal fit of the crown
- preventing the ingress of blood and fluid

6. Methods of gum retraction

6.1. Mechanical methods:

- retraction threads
- retraction rings
- special mouth guards

Advantages: simplicity,

control

Flaws: gum injury is possible

6.2. Chemical-mechanical methods:

- threads impregnated with solutions
- adrenaline, aluminum sulfate

6.3. Surgical methods:

- electrosurgery
- laser retraction

Used for severe gum hypertrophy

7. Retraction materials

- retraction threads (cotton, braided)
- hemostatic solutions:
 - aluminum sulfate
 - aluminum chloride
 - adrenaline (limited)
- retraction pastes
- coagulation gels



8. Methodology for performing retraction

Stages:

1. cleaning the gingival sulcus
2. selection of the retraction cord size
3. impregnation with a hemostatic solution
4. insertion of thread into the groove
5. exposure 3-10 minutes
6. removing the thread before printing
7. immediate impression

Key requirements:

- absence of gum trauma
- bleeding control
- sufficient opening of the furrow
- quick work after thread removal

9. Clinical appointment with an orthopedic patient

Main stages:

1. Initial examination:


- complaints
- anamnesis
- oral examination

2. Diagnostics:

- identification of defects
- bite assessment
- X-ray examination

3. Treatment planning:

- choice of design
- definition of the stages of prosthetics

	<p align="center">Educational institution Royal Metropolitan University</p>
	<p align="center">Quality management system Educational and methodological complex of the discipline "Orthopedic dentistry" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"</p>

4. Preparation:

- creating a stump shape
- ledge preparation

5. Obtaining impressions:

- double print
- quality control

10. Analysis of clinical cases

When examining a patient, the following is assessed:

- periodontal condition
- gingival sulcus depth
- quality of preparation
- print accuracy
- choice of retraction method

Example analysis:

- insufficient retraction → poor impression
- bleeding → disruption of fixation
- lack of shoulder → imprecise fit of the crown

11. Errors and complications

- gum injury
- bleeding during impression
- incomplete display of the ledge
- deformation of the impression
- periodontal inflammation

12. Conclusion

The quality of fixed orthopedic structures directly depends on the correct preparation of teeth, the accuracy of obtaining double impressions, and the competent implementation of gum retraction.



Compliance with all stages ensures:

- precise marginal fit
- long service life of the prosthesis
- maintaining periodontal health

**Thematic plan of lectures
in orthopedic dentistry
for 3rd year students of the 6th semester**

Lesson **Topic** **#1: Introduction to orthopedic dentistry.**
Goals and objectives of the course. Main types of orthopedic treatment. Organization of orthopedic dental care.

1. The purpose of the lecture:

To develop students' understanding of orthopedic dentistry as a clinical discipline that studies the diagnosis, prevention, and treatment of dental defects, dentition, and the maxillofacial region. To explore the main types of orthopedic treatment and the principles of organizing orthopedic dental care.


2. Issues under consideration:

- orthopedic dentistry as a section of clinical medicine;
- goals and objectives of orthopedic dentistry;
- the importance of orthopedic treatment in restoring the functions of the dentoalveolar system;
- the main types of orthopedic structures;
- fixed, removable and combined prosthetics;
- stages of orthopedic treatment;
- organization of orthopedic dental care;
- structure of a dental clinic and orthopedic department;
- the role of a dental laboratory;
- interaction of an orthopedic surgeon with other specialists.

3. Main provisions of the topic

Orthopedic dentistry is an important section of clinical dentistry that deals with the diagnosis, prevention, and treatment of dental defects, dental arches, and disorders of the masticatory apparatus using orthopedic structures.

The primary goal of orthopedic dentistry is to restore lost functions of the dental system: chewing, speech, and aesthetics. Furthermore, an important task is the

	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"

prevention of complications that arise after tooth loss, such as dental malalignment, malocclusion, bone atrophy, and temporomandibular joint pathology.

The tasks of orthopedic dentistry include:

- restoration of the integrity of the dental arches;
- normalization of chewing function;
- speech restoration;
- elimination of aesthetic defects;
- prevention of periodontal and TMJ diseases;
- improving the patient's quality of life.

Orthopedic dentistry is closely related to therapeutic, surgical and orthodontic dentistry, as well as to anatomy, physiology, pathological anatomy and biomechanics.

Main types of orthopedic treatment

In modern dentistry, there are several main types of orthopedic treatment:

1. Fixed prosthetics

Fixed structures are permanently fixed in the oral cavity and cannot be removed by the patient. These include:


- crowns (metal, metal-ceramic, ceramic);
- bridge prostheses;
- inlays and onlays;
- veneers.

Fixed prosthetics are used for partial defects of the dentition and for destruction of the crown part of the tooth.

2. Removable dentures

Removable appliances can be removed and put on by the patient themselves. They are used for significant or complete dental defects.

A distinction is made between:

	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"

- plate dentures (complete and partial);
- clasp dentures;
- conditionally removable structures on implants.

3. Combined prosthetics

Combines elements of removable and fixed prosthetics. Used in complex clinical situations.

Stages of orthopedic treatment

Orthopedic treatment includes the following sequential stages:

1. Initial examination of the patient;
2. Making a diagnosis;
3. Drawing up a treatment plan;
4. Oral cavity preparation (therapeutic, surgical, orthodontic);
5. Clinical stages (preparation, taking impressions);
6. Laboratory stages (manufacturing of the structure);
7. Fitting and correction of the prosthesis;
8. Fixing the structure;
9. Control and surveillance.

Organization of orthopedic dental care

Orthopedic dental care is provided in dental clinics, private clinics and hospitals.

Main structural divisions:

- orthopedic dental office;
- dental laboratory;
- X-ray room;
- sterilization unit;
- registry and medical documentation.

The orthopedic surgeon performs the clinical stage of treatment: diagnosis, planning, preparation of teeth, taking impressions, fitting and fixation of prostheses.

The dental technician performs the laboratory stage: the production of models, frames and finished orthopedic structures.



The effectiveness of treatment depends on close cooperation between the doctor and the dental technician.

The Importance of Orthopedic Dentistry

Orthopedic dentistry is of great medical and social importance. It allows:

- restore chewing function;
- improve facial aesthetics;
- normalize speech;
- prevent deformation of dental arches;
- improve the patient's psycho-emotional state;
- improve the quality of life.

Conclusion

Orthopedic dentistry is an important clinical discipline aimed at restoring the function and aesthetics of the dental system. Successful treatment depends on accurate diagnosis, competent planning, and collaboration between all participants in the treatment process.

Lecture Topic #2: Anatomical and physiological foundations of the masticatory apparatus. Structure of the dental system. Functions of teeth, periodontium, and TMJ.

1. The purpose of the lecture:

To study the anatomical and physiological foundations of the masticatory system, the structural features of the dental system, as well as the functions of teeth, periodontium, and the temporomandibular joint (TMJ). To develop an understanding of the unity and interrelationship of all elements of the masticatory system as the basis for orthopedic dental treatment.

2. Issues under consideration:

- General characteristics of the masticatory apparatus as a functional system
- Structure of the dentoalveolar system
- Tooth as an anatomical and functional unit
- Periodontium: structure and functions
- Temporomandibular joint (TMJ): anatomy and biomechanics
- Muscles of the masticatory apparatus and their role



- Functions of teeth (incisors, canines, premolars, molars)
- Functional interaction of elements of the masticatory system
- The importance of the masticatory apparatus in orthopedic dentistry

3. Educational technologies:

- Lecture with multimedia presentation
- Demonstration of anatomical diagrams and 3D models
- Analysis of clinical examples of occlusion and chewing function disorders

4. Primary and secondary literature:

1. Prosthodontics Principles and Management Strategies
2. Sturdevant's Art and Science of Operative Dentistry
3. Carranza's Clinical Periodontology
4. Okeson Management of Temporomandibular Disorders
5. Orthopedic dentistry: textbook (edited by V. N. Trezubov, S. I. Borovsky)
6. Clinical Orthopedic Dentistry (edited by E. I. Gavrilov)

5. Lecture content

5.1. General characteristics of the masticatory apparatus

The masticatory system is a functionally integrated system of organs responsible for the mechanical processing of food, the formation of the food bolus, and participation in speech and swallowing. It includes:

- teeth
- periodontium
- upper and lower jaws
- temporomandibular joint
- chewing muscles
- vascular-nerve structures
- oral mucosa

All elements of the masticatory apparatus function as a single whole, and disruption of one link leads to changes in the entire system.



5.2. Structure of the dental system

The dental system includes the maxilla and mandible, the dental arches, and the surrounding tissues. Its key feature is the functional relationship between form and function.

Dental row is an arched arrangement of teeth:

- the upper dental arch is wider and more immobile
- the lower dental arch is mobile and forms occlusion

Main elements:

- crown of the tooth
- neck of the tooth
- tooth root

Teeth are divided into:

- incisors - biting off food
- fangs - tearing
- premolars - primary grinding
- molars - primary chewing

5.3. Periodontium: structure and functions


The periodontium is a complex of tissues that surround the tooth and ensure its fixation in the jaw.

The periodontium consists of:

- gum
- periodontium
- tooth root cementum
- alveolar bone

The main functions of the periodontium:

- supporting (fixation of the tooth in the alveolus)
- shock-absorbing (softening the chewing load)

	<p align="center">Educational institution Royal Metropolitan University</p>
	<p align="center">Quality management system Educational and methodological complex of the discipline "Orthopedic dentistry" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"</p>

- trophic (nutrition of dental tissues)
- protective (barrier against infection)
- sensory (reaction to pressure and pain)

The periodontium plays a key role in distributing chewing loads and maintaining the stability of the dentition.

5.4. Temporomandibular joint (TMJ)

The TMJ is a paired joint that connects the lower jaw to the temporal bone.

Anatomical elements:

- articular head of the mandible
- glenoid fossa of the temporal bone
- articular disc
- joint capsule
- ligamentous apparatus

Peculiarities:

- combined joint (rotation + sliding)
- synchronous work of both sides
- high adaptability

Functions of the TMJ:

- opening and closing the mouth
- chewing movements
- lateral movements of the lower jaw
- participation in speech and swallowing

Dysfunction of the TMJ leads to pain syndromes, limited movement and dysfunction of the masticatory apparatus.

5.5. Muscles of the masticatory apparatus

The main chewing muscles are:

- chewing muscle (m. masseter)



- temporal muscle (m. temporalis)
- medial pterygoid muscle
- lateral pterygoid muscle

Functions:

- lifting of the lower jaw
- advancement and displacement
- participation in chewing cycles
- TMJ stabilization

5.6. Functions of teeth and the masticatory system

Teeth perform the following functions:

- mechanical processing of food
- participation in speech formation
- maintaining facial shape
- aesthetic function
- participation in occlusion

The masticatory system as a whole provides:


- efficient chewing of food
- uniform load distribution
- stimulation of periodontal and bone tissue
- normal functioning of the gastrointestinal tract

5.7. Functional interaction of system elements

All elements of the masticatory apparatus are closely interconnected:

- changes in occlusion affect the TMJ
- tooth loss leads to bone atrophy
- Periodontal disease disrupts the stability of teeth
- muscle dysfunction affects the joint

Thus, the masticatory apparatus represents a single biomechanical system.

	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"

5.8. Significance for orthopedic dentistry

Understanding the anatomical and physiological foundations is necessary for:

- correct diagnosis of defects of the dental system
- prosthetic planning
- selection of prosthesis design
- prevention of complications
- restoration of chewing function and aesthetics

6. Conclusion: The masticatory system is a complex functional system comprising the teeth, periodontium, TMJ, and masticatory muscles. Their coordinated function ensures complete chewing function. Understanding the anatomical and physiological foundations is the foundation for successful orthopedic treatment and restoration of dental and jaw function.

Lecture Topic #3: Examination of patients in orthopedic dentistry. Clinical and additional examination methods. Diagnosis of dental defects.

1. The purpose of the lecture:


Learn methods of clinical and additional examination of patients in orthopedic dentistry, master the algorithm for diagnosing dental defects, and learn how to form a preliminary clinical diagnosis for planning orthopedic treatment.

2. Issues under consideration:

- The importance of patient examination in orthopedic dentistry
- Stages of clinical examination
- Questioning (complaints, medical history and illness)
- Examination of the face and oral cavity
- Palpation, percussion, probing
- Assessment of occlusion and articulation
- Additional research methods
- Radiographic diagnostic methods
- Functional research methods
- Diagnosis of dental defects
- Clinical significance of diagnostics for choosing a prosthesis

3. Educational technologies:

- Lecture with multimedia presentation
- Demonstration of clinical cases
- Analysis of diagnostic algorithms

	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"

- Working with X-ray images

4. Primary and secondary literature:

1. Prosthodontics Principles and Management Strategies
2. Shillingburg Fundamentals of Fixed Prosthodontics
3. Carranza's Clinical Periodontology
4. Okeson Management of Temporomandibular Disorders
5. Orthopedic dentistry: textbook (edited by Trezubov V.N.)
6. Clinical orthopedic dentistry (edited by E.I. Gavrilov)

5. Lecture content

5.1. The Importance of Patient Examination

A patient examination in orthopedic dentistry is the basis for diagnosis and treatment planning. It allows:

- identify defects in dental arches and teeth
- assess the condition of the dental system
- identify functional disorders
- choose a rational design of the prosthesis
- prevent complications of prosthetics

A comprehensive examination includes clinical and additional methods.

5.2. Stages of clinical examination


The clinical examination is carried out in stages:

1. Patient survey
2. Examination of the face and oral cavity
3. Palpation and percussion
4. Occlusion assessment
5. Functional tests

Each stage has diagnostic value and complements the previous one.

5.3. Patient survey

The survey includes:

	<p align="center">Educational institution Royal Metropolitan University</p>
	<p align="center">Quality management system Educational and methodological complex of the discipline "Orthopedic dentistry" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"</p>

Patient complaints:

- lack of teeth
- difficulty chewing
- aesthetic disorders
- pain in the teeth or TMJ area
- speech impairment

Medical history:

- cause of tooth loss
- age of the defect
- treatment carried out
- presence of dentures in the past

Life history:

- concomitant diseases (diabetes, cardiovascular pathologies)
- bad habits
- oral hygiene
- professional factors

5.4. Examination of the patient


The inspection is carried out in two directions:

1. Facial examination:

- facial symmetry
- lower facial height
- severity of nasolabial folds
- lip condition
- smile aesthetics

2. Examination of the oral cavity:

- condition of the dentition
- presence of defects
- condition of the mucous membrane
- periodontal condition

	<p align="center">Educational institution Royal Metropolitan University</p>
	<p align="center">Quality management system Educational and methodological complex of the discipline "Orthopedic dentistry" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"</p>

- hygienic index

5.5. Palpation, percussion, probing

- **Palpation**- determination of pain and soft tissue condition
- **Percussion**- assessment of the periodontal condition of the teeth
- **Probing**— determination of carious cavities and restoration margins

These methods allow us to identify hidden pathological processes.

5.6. Assessment of occlusion and articulation

Occlusion is the closure of the dental arches.

Determine:

- central occlusion
- lateral occlusions
- anterior occlusion

Also assessed:

- bite
- interalveolar height
- presence of supracontacts
- TMJ function

5.7. Additional examination methods


Additional methods include:

Radiographic methods:

- targeted radiography
- orthopantomogram
- computed tomography

Functional methods:

- electromyography
- rheography

	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"

- mastication photography
- galvanometry
- pH-metry of saliva

These methods allow us to assess the functional state of the masticatory apparatus.

5.8. Diagnosis of dental defects

Defects in dental arches can be:

- included (bounded on both sides by teeth)
- end (one-sided lack of support)
- combined
- complete defects

Also distinguished:

- dental defects (crowns)
- partial edentia
- complete edentia

Classification of defects is important for choosing the design of the prosthesis.

5.9. Clinical significance of diagnostics

Correct diagnosis allows:

- determine indications for prosthetics
- choose the type of construction (removable or fixed prosthesis)
- assess the treatment prognosis
- prevent periodontal overload
- provide functional and aesthetic rehabilitation

6. Conclusion

A patient's examination in orthopedic dentistry is a multi-stage process that includes clinical and additional diagnostic methods. This comprehensive approach allows us to accurately determine the nature of dental defects and develop a personalized orthopedic treatment plan to restore the function and aesthetics of the dental system.



Lecture Topic #4: Classification of defects of dental arches and teeth. Classification of dental defects. Indications for various types of prosthetics.

1. The purpose of the lecture:

To study the main types of dental defects and teeth, master modern classifications of partial and complete edentia, and determine clinical indications for various types of orthopedic treatment and prosthetics.

2. Issues under consideration:

- Concept of defects of dentition and teeth
- Etiology of tooth loss
- Classification of dental defects
- Classification of defects of dentition
- Classification of partial and complete edentia
- Features of included and terminal defects
- Clinical manifestations of defects of dentition
- Indications for fixed prosthetics
- Indications for removable dentures
- Choice of orthopedic treatment method

3. Educational technologies:

- Lecture with multimedia presentation
- Analysis of clinical cases
- Analysis of orthopedic defect patterns
- Working with classification tables

4. Primary and secondary literature:

1. Shillingburg Fundamentals of Fixed Prosthodontics
2. Prosthodontics Principles and Management Strategies
3. Carranza's Clinical Periodontology
4. McCracken's Removable Partial Prosthodontics
5. Orthopedic dentistry (edited by Trezubov V.N.)
6. Clinical orthopedic dentistry (Gavrilov E.I.)

5. Lecture content

5.1. The concept of defects of dental arches and teeth

Dental arch defects are a violation of the integrity of the dental arch due to the absence of one or more teeth.



Dental defects are the destruction of the crown of the tooth of varying degrees of severity (caries, trauma, non-cariou lesions).

Reasons:

- caries and its complications
- dental injuries
- periodontitis
- congenital adentia
- surgical removal of teeth

5.2. Classification of dental defects

Dental defects are classified according to the degree of destruction:

- partial destruction of the crown
- significant destruction of the crown
- complete destruction of the crown while preserving the root
- combined defects

Also distinguished:

- carious defects
- non-cariou lesions (erosions, wedge-shaped defects, fluorosis)
- traumatic defects

5.3. Classification of dental defects

There are several classifications, but the most commonly used is the clinical-anatomical division.

By the extent of the defect:

- single defects
- multiple defects
- combined defects

By localization:

- frontal defects



- lateral defects
- combined defects

5.4. Classification of partial edentia

The most common is the Kennedy classification:

- Class I - bilateral end defects
- Class II - unilateral terminal defect
- Class III - included defect (limited by teeth on both sides)
- Class IV - a defect in the anterior region crossing the midline

This classification is of great importance for the choice of prosthesis design.

5.5. Complete edentia

Complete edentia is the absence of all teeth on one or both jaws.

Consequences:

- violation of chewing function
- change in facial appearance
- bone tissue atrophy
- speech impairment
- decreased quality of life

5.6. Clinical manifestations of dental defects

If there are defects, the following are observed:

- tooth displacement
- tilt of adjacent teeth
- supraeruption of antagonists
- occlusion violation
- periodontal overload
- TMJ dysfunction

5.7. Indications for fixed prosthetics

Fixed structures are indicated for:



- included defects of the dentition
- preserved supporting teeth
- good periodontal condition
- limited in extent defects
- high aesthetic requirements

Types of fixed structures:

- crowns
- bridge prostheses
- inlays and onlays

5.8. Indications for removable dentures

Removable dentures are indicated for:

- terminal defects of the dental arches
- multiple defects
- significant tooth loss
- complete edentia
- impossibility of using fixed structures

Types:

- partial removable dentures
- complete removable dentures
- clasp dentures

5.9. Selecting a prosthetic method

The choice depends on:

- clinical situation
- condition of the supporting teeth
- periodontal conditions
- patient's age
- aesthetic requirements
- financial opportunities



The main goal is to restore chewing function, speech and aesthetics with maximum tissue preservation.

6. Conclusion

Classifying dental arch and tooth defects is of great clinical importance in orthopedic dentistry. It allows for the correct identification of the defect type, selection of the optimal prosthetic method, and provision of comprehensive functional and aesthetic rehabilitation for the patient.

Lecture Topic #5: Fixed dentures.

Types of fixed structures. Indications and contraindications.

1. The purpose of the lecture:

To study modern types of fixed dentures, their design features, indications, and contraindications. To develop an understanding of the principles of selecting fixed orthopedic appliances in clinical practice.

2. Issues under consideration:

- The concept of fixed prosthetics
- The main types of fixed structures
- Crowns and their varieties
- Bridge prostheses
- Inlays, onlays and veneers
- Adhesive structures
- Indications for fixed prosthetics
- Contraindications to fixed prosthetics
- Clinical criteria for choosing a structure

3. Educational technologies:

- Lecture with multimedia presentation
- Analysis of clinical situations
- Demonstration of models of fixed dentures
- Analysis of radiological data

4. Primary and secondary literature:

1. Shillingburg Fundamentals of Fixed Prosthodontics
2. Prosthodontics Principles and Management Strategies
3. Contemporary Fixed Prosthodontics Rosenstiel
4. Sturdevant's Art and Science of Operative Dentistry



5. Orthopedic dentistry (V.N. Trezubov)
6. Clinical orthopedic dentistry (Gavrilov E.I.)

5. Lecture content

5.1. The concept of fixed prosthetics

Fixed prosthetics is a type of orthopedic treatment in which the prosthesis is fixed to teeth or implants and is not removed by the patient independently.

Main objective:

- restoration of the anatomical shape of teeth
- restoration of chewing function
- improving aesthetics
- stabilization of the dentition

Fixed structures provide a more physiological transfer of chewing load compared to removable dentures.

5.2. Types of fixed structures

Fixed dentures include:

1. *Crowns:*

- metal
- metal-ceramic
- all-ceramic
- plastic (temporary)

2. *Bridge prostheses:*

- supported by natural teeth
- implant-supported

3. *Inlays and onlays:*

- inlay
- onlay
- overlay



4. Veneers:

- ceramic
- composite

5. Adhesive structures:

- minimally prepared bridges
- splinting structures

5.3. Crowns as the main type of fixed prostheses

A crown is a prosthesis that covers the anatomical crown of a tooth.

Functions:

- tooth shape restoration
- protection of a weakened tooth
- aesthetic correction

5.4. Bridge prostheses

A bridge prosthesis is used when there are defects in the dental row.

Consists of:

- supporting crowns
- intermediate part (artificial teeth)

Advantages:

- restoration of dental continuity
- good aesthetics
- high chewing efficiency

5.5. Inlays, onlays and veneers

Tabs:

They are used to restore defects in the crown of the tooth.



Overlays:

Cover the chewing surface of the tooth.

Veneers:

Thin plates fixed on the vestibular surface of the teeth for aesthetic correction.

5.6. Indications for fixed prosthetics

Fixed structures are used in the following cases:

- single and included defects of the dentition
- preserved supporting teeth
- sufficient height of the clinical crown
- good periodontal condition
- need for aesthetic rehabilitation
- partial destruction of dental crowns

5.7. Contraindications to fixed prosthetics

Absolute and relative contraindications:

Absolute:

- complete edentia without the possibility of implantation
- severe tooth mobility grade III
- severe forms of periodontitis
- absence of supporting teeth

Relative:

- poor oral hygiene
- bruxism
- insufficient height of the crown of the tooth
- general somatic diseases in the decompensation stage

5.8. Clinical criteria for design selection

The choice of a fixed structure depends on:



- defect localization
- condition of the supporting teeth
- occlusal relationships
- aesthetic requirements
- patient's age
- functional load

6. Conclusion

Fixed dentures are an important area of orthopedic dentistry, providing reliable restoration of the function and aesthetics of the dental system. The correct choice of design depends on the clinical situation, the condition of the supporting tissues, and the individual characteristics of the patient.

Lecture Topic #6: Preparing teeth for artificial crowns.

Types of preparation. Principles of tooth stump formation.

1. The purpose of the lecture:

Learn the basic steps of preparing teeth for artificial crowns, the types of hard dental tissue preparation, and the principles of dental stump formation, ensuring reliable fixation and durability of the orthopedic structure.

2. Issues under consideration:

- The concept of tooth preparation
- The goals and objectives of preparing a tooth for a crown
- Biological principles of preparation
- Types of tooth preparation
- Instruments for preparation
- Principles of forming a tooth stump
- Requirements for the shape and surface of the stump
- Preparation errors and their consequences
- Clinical significance of proper tooth preparation

3. Educational technologies:

- Lecture with multimedia presentation
- Demonstration of clinical stages of dissection
- Working with dental phantoms and models
- Analysis of clinical errors



4. Primary and secondary literature:

1. Shillingburg Fundamentals of Fixed Prosthodontics
2. Sturdevant's Art and Science of Operative Dentistry
3. Prosthodontics Principles and Management Strategies
4. Contemporary Fixed Prosthodontics Rosenstiel
5. Orthopedic dentistry (V.N. Trezubov)
6. Clinical orthopedic dentistry (Gavrilov E.I.)

5. Lecture content

5.1. The concept of tooth preparation

Tooth preparation is the process of mechanical treatment of hard dental tissues in order to create the optimal shape of the stump for fixing an artificial crown.

Main tasks:

- creating the correct geometry of the stump
- ensuring retention and stability of the crown
- preserving the maximum volume of healthy tissue
- prevention of periodontal injury


5.2. Goals of tooth preparation for a crown

- ensuring reliable fixation of the prosthesis
- creating resistance to chewing loads
- formation of an anatomically correct tooth shape
- ensuring an aesthetic result
- maintaining the biological width of the gums

5.3. Biological principles of dissection

When preparing a tooth, it is necessary to observe:

- maximum preservation of hard tissues
- minimal trauma to the pulp
- taking into account the thickness of the future crown
- preservation of periodontal attachment
- ensuring a smooth surface without overhanging edges

	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"

5.4. Types of tooth preparation

1. *By volume of processing:*

- minimal preparation
- moderate preparation
- significant dissection

2. *By design type:*

- for stamped crowns
- for cast crowns
- for metal-ceramic crowns
- for all-ceramic crowns

3. *By processing method:*

- with a ledge (shoulder preparation)
- without a ledge
- combined preparation

5.5. Instruments for preparation

Used:

- diamond burs
- carbide burs
- turbine tips
- micromotor handpieces
- water cooling to prevent overheating

Correct selection of instrument reduces the risk of pulp damage.

5.6. Principles of tooth stump formation

The tooth stump must ensure reliable fixation of the crown.

Basic principles:



1. Retention form:

- slightly conical shape
- wall convergence angle 6–10°

2. Displacement resistance:

- sufficient stump height
- uniform distribution of loads

3. Creating a ledge:

- for aesthetic and ceramic structures
- shoulder width 0.5–1.5 mm

4. Surface smoothness:

- absence of sharp corners
- polished surface

5. Maintaining biological width:

- the distance to the gum is not less than 2 mm

5.7. Requirements for the tooth stump

The stump should be:

- resistant to chewing load
- anatomically correct
- smooth and without defects
- sufficient in height
- ensuring a tight fit of the crown

5.8. Preparation errors

The most common mistakes:

- excessive removal of tooth tissue
- pulp overheating
- creating sharp corners



- insufficient cone angle
- gum injury
- violation of biological width

Consequences:

- inflammation of the pulp
- poor fixation of the crown
- development of secondary caries
- periodontal damage

5.9. Clinical significance of correct preparation

Proper tooth preparation ensures:

- crown durability
- absence of complications
- maintaining tooth vitality
- uniform load distribution
- aesthetic result


6. Conclusion

Preparing teeth for artificial crowns is a key stage of orthopedic treatment. Adherence to preparation principles and proper formation of the tooth core ensure reliable fixation of the structure, functional stability, and long-term clinical success.

Lecture Topic #7: Removable plate dentures. Indications, design, manufacturing stages.

1. The purpose of the lecture

To study the indications for the use of removable plate dentures, their design features, key components, and clinical and laboratory manufacturing stages. To develop students' understanding of the principles of restoring partial and complete tooth loss using removable dentures, as well as the specifics of patient adaptation to these dentures.

	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"

2. General information

Removable plate dentures are orthopedic structures designed to replace partial or complete dental defects and restore chewing, aesthetic, and speech functions. They are the most common type of prosthetic treatment for significant tooth loss, especially in elderly patients or those with contraindications to fixed structures.

Removable dentures can be:

- **full-** in case of complete edentia;
- **partial-** if there are remaining teeth.

3. Indications for use

Removable plate dentures are indicated for:

- complete loss of teeth on one or both jaws;
- significant inclusion or terminal defects of the dentition;
- impossibility of using fixed structures;
- periodontal diseases with tooth mobility;
- contraindications to implantation;
- temporary prosthetics (including the healing period after tooth extraction or surgery).

4. Contraindications

Absolute contraindications are rare, but relative ones include:

- acute inflammatory processes of the oral mucosa;
- severe atrophy of the alveolar process without the possibility of fixing the prosthesis;
- severe psychoneurological diseases;
- allergy to the materials of the denture base;
- low patient motivation to use removable structures.

5. Design of a removable plate prosthesis

A removable plate denture consists of the following main elements:



1. **Prosthesis base**

The main part of the structure is made of acrylic plastic or nylon materials. It rests on the mucous membrane and alveolar process.

2. **Artificial teeth**

They are made of plastic or ceramics and are selected according to shape, size and color.

3. **Clasps (retaining elements)**

They are used in partial dentures for fixation on supporting teeth.

4. **Connecting elements**

They ensure structural strength and uniform distribution of chewing load.

6. Functions of a removable plate denture

- restoration of chewing function;
- restoration of facial aesthetics;
- normalization of diction;
- prevention of tooth displacement and deformation of dental arches;
- maintaining the bite height;
- prevention of bone tissue atrophy.

7. Clinical and laboratory stages of production

I. Clinical stage

- patient examination;
- diagnosis and choice of design;
- taking anatomical impressions;
- determination of the central relationship of the jaws;
- selection and placement of artificial teeth in wax;
- trying on a wax composition;
- checking occlusion and aesthetics;
- delivery of the finished prosthesis.

II. Laboratory stage

- casting models;
- making a custom spoon;
- base modeling;
- teeth setting;



- polymerization of plastics;
- processing and polishing of the prosthesis.

8. Stages of patient adaptation

Adaptation to removable dentures goes through several phases:

1. **Irritation phase**- sensation of a foreign body, increased salivation.
2. **Partial adaptation phase**— formation of new reflexes.
3. **Full adaptation phase**— getting used to the prosthesis and restoring functions.

The average adaptation period is from 1 to 4 weeks.

9. Features of denture care

The patient needs:

- clean the denture daily with a brush and special products;
- remove the prosthesis at night;
- store in clean water or solution;
- Regularly visit an orthopedic doctor for correction;
- avoid mechanical damage and overheating.

10. Advantages and disadvantages

Advantages:

- accessibility;
- can be used in the complete absence of teeth;
- ease of manufacture;
- maintainability.

Flaws:

- less comfortable compared to fixed structures;
- long period of adaptation;
- possible bone tissue atrophy;
- the need for regular correction.



11. Conclusion

Removable plate dentures remain an important orthopedic treatment option for significant dental defects. Their proper use requires a thorough patient examination, careful design selection, and adherence to all manufacturing stages. The effectiveness of the prosthetics depends on the interaction between the doctor and the patient, as well as the quality of the clinical and laboratory procedures.

Lecture Topic #8: Removable plate dentures. Indications, design, manufacturing stages.

1. The purpose of the lecture

To study the design features of clasp dentures, the principles of their fixation using a clasp system, and the indications for this type of removable prosthetics. To develop students' understanding of the biomechanics of clasp dentures and their role in the functional rehabilitation of patients with partial tooth loss.

2. General information

Clasp dentures are removable arch-mounted structures designed to replace partial dental defects. Their key feature is the use of a metal frame (arch, or "clasp"), which ensures high strength, minimal base volume, and even distribution of chewing forces.

Unlike plate dentures, clasp structures are more physiological, comfortable and durable.

3. Design of the clasp denture

The clasp denture consists of the following main elements:

1. Metal frame (clasp)

- The main load-bearing element of the structure.
- It is an arc connecting the right and left sides of the prosthesis.
- Can be located on the upper or lower jaw.
- It is made of cobalt-chromium, titanium-nickel or other biocompatible alloys.



2. Support and retaining elements

- Clasps;
- Occlusal pads;
- Additional stabilizing elements.

3. Prosthesis base

- A plastic part that imitates gums.
- Serves to fix artificial teeth.

4. Artificial teeth

- They are selected individually by shape, color and size.
- They can be plastic or ceramic.

5. Connecting elements

- They connect individual parts of the structure into a single functional apparatus.

4. Clasp system

Clasps are the main element for fixing the clasp denture on the supporting teeth.

Functions of clasps:

- fixation of the prosthesis;
- stabilization of the structure;
- distribution of chewing load;
- preventing displacement of the prosthesis.

Main types of clasps:

1. **Wire clasps**

- Easy to make;
- Less aesthetic and less accurate.

2. **Cast clasps**

- Manufactured together with the frame;
- Provide high precision and reliability.



3. Support-retaining clasps

- They provide not only fixation, but also support for the tooth.

Clasp elements:

- shoulder (retention part);
- body;
- occlusal pad;
- connecting part.

5. Indications for the use of clasp dentures

Clasp dentures are indicated for:

- partial defects of the dental arches (especially terminal ones);
- the presence of a sufficient number of supporting teeth;
- periodontal diseases with moderate tooth mobility (as splinting structures);
- impossibility of installing permanent structures;
- the need for uniform distribution of the chewing load;
- the patient's aesthetic requirements on a limited budget.

6. Contraindications

- lack of a sufficient number of supporting teeth;
- pronounced atrophy of the alveolar process;
- severe forms of periodontitis with high tooth mobility;
- acute inflammatory diseases of the oral mucosa;
- allergy to metal alloys (relative contraindication).

7. Advantages of clasp dentures

- high structural strength;
- smaller base sizes compared to plate dentures;
- wearing comfort;
- improved fixation;
- uniform load distribution;
- possibility of use as splinting structures.



8. Disadvantages

- the need for supporting teeth;
- complexity of manufacturing;
- high cost compared to plate prostheses;
- possible visibility of clasps in an aesthetically significant area;
- the need for highly qualified doctors and technicians.

9. Biomechanical features

Clasp dentures provide:

- support and retention fixation;
- redistribution of chewing pressure on the teeth and mucous membrane;
- reducing pressure on the alveolar ridge;
- reducing the risk of accelerated bone tissue atrophy.


10. Conclusion

Clasp dentures are a modern and functionally effective method for treating partial edentulism. Their design combines strength, comfort, and physiology. The correct choice of design, careful planning of the clasp system, and precise execution of clinical and laboratory procedures are key to successful treatment.

Lecture Topic #9: Complications in orthopedic treatment and their prevention. Errors in prosthetics, methods of prevention and correction.

1. The purpose of the lecture

To study the main complications that arise during orthopedic treatment, their causes, clinical manifestations, and prevention and correction methods. To develop students' understanding of medical errors in prosthetics and methods for preventing them at all stages of orthopedic care.

	<p align="center">Educational institution Royal Metropolitan University</p>
	<p align="center">Quality management system Educational and methodological complex of the discipline "Orthopedic dentistry" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"</p>

2. General information

Orthopedic treatment in dentistry aims to restore the function and aesthetics of the dental system using various types of prosthetics. However, complications may arise during the prosthetic process, both due to medical errors and individual patient characteristics.

Complications may develop:

- at the diagnostic stage;
- when preparing the oral cavity;
- during the manufacturing process of the prosthesis;
- after fixing the structure;
- during the period of adaptation and operation.

3. Classification of complications

1. *By time of occurrence:*

- early (during treatment);
- late (after fixation of the prosthesis).

2. *By character:*

- biological;
- mechanical;
- functional;
- aesthetic;
- technical.

4. Complications in orthopedic treatment

4.1. *Biological complications*

- inflammation of the oral mucosa (denture stomatitis);
- traumatic ulcers;
- allergic reactions to prosthesis materials;
- gingivitis and periodontitis of supporting teeth;
- atrophy of the alveolar process due to prolonged pressure of the prosthesis.



4.2. Mechanical complications

- fracture of the prosthesis;
- deformation of the base;
- de-cementation of crowns;
- breakage of clasps;
- violation of the structure's fixation.

4.3. Functional complications

- chewing disorder;
- speech impairment;
- pain when biting;
- discomfort when talking;
- hypersalivation or dry mouth.

4.4 Aesthetic complications

- discrepancy between the shape and color of teeth;
- noticeable clasps;
- change in the height of the lower third of the face;
- smile asymmetry.


4.5. Complications of the TMJ

- pain in the temporomandibular joint;
- clicks and crunches;
- restriction of mouth opening;
- joint dysfunction due to malocclusion.

5. Basic mistakes in prosthetics

5.1. Diagnostic errors

- incomplete examination of the patient;
- ignoring the condition of the periodontium;
- incorrect assessment of occlusion;
- lack of X-ray control.

	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"

5.2. *Planning errors*

- incorrect choice of prosthesis design;
- ignoring the biomechanics of the masticatory apparatus;
- incorrect distribution of supports.

5.3. *Clinical stage errors*

- inaccurate preparation of teeth;
- incorrect impression taking;
- errors in determining central occlusion;
- inaccurate bite registration.

5.4. *Laboratory stage errors*

- deformation of models;
- incorrect placement of teeth;
- violation of manufacturing technology;
- use of low-quality materials.

5.5. *Fixation errors*

- incorrect fit of the prosthesis;
- excess amount of cement;
- insufficient sealing;
- violation of occlusal contacts.

6. Prevention of complications

Prevention of complications includes a range of measures:

6.1. *At the diagnostic stage:*

- careful collection of anamnesis;
- clinical and radiological examination;
- assessment of the condition of the periodontium and TMJ.

6.2. *At the planning stage:*

- correct choice of prosthesis design;



- taking into account biomechanical principles;
- modeling of the future design.

6.3. *At the clinical stage:*

- precise preparation of teeth;
- high-quality impression taking;
- correct determination of bite.

6.4. *At the laboratory stage:*

- quality control of models;
- compliance with manufacturing technology;
- interaction between the doctor and the dental technician.

6.5 *After fixation:*

- occlusion control;
- prosthesis correction;
- teaching the patient hygiene;
- regular preventive examinations.

7. Methods for correcting complications

- grinding and correction of occlusal contacts;
- relining of removable dentures;
- replacement or repair of structures;
- treatment of inflammatory diseases of the mucous membrane;
- prescription of anti-inflammatory therapy;
- Physiotherapy treatment for TMJ disorders.

8. The role of the physician in preventing complications

The orthopedic surgeon is responsible for:

- correct diagnosis;
- selection of a rational method of prosthetics;
- control of all stages of treatment;
- teaching the patient how to use the prosthesis;
- timely detection and elimination of complications.



9. Conclusion

Complications during orthopedic treatment are multifactorial and can be associated with diagnostic, clinical, and technical errors. Their prevention relies on strict adherence to treatment protocols, accurate diagnosis, proper planning, and a high level of professional training for the doctor and dental technician. Timely correction of complications helps maintain the effectiveness of prosthetics and the patient's health.

Lecture notes on Orthopedic Dentistry - 7th semester.

Lecture Topic #1: Introduction to orthopedic dentistry. Objectives and classifications of dental defects.

1. The purpose of the lecture

To familiarize students with the subject of orthopedic dentistry, its main objectives, place in the dental care system, as well as with modern classifications of dental defects and the importance of their correct definition for choosing a prosthetic method.

2. General information about orthopedic dentistry

Orthopedic dentistry is a branch of dentistry that studies the diagnosis, prevention, and treatment of disorders of the function and form of the dental system through the use of various types of dental prostheses and orthopedic devices.

The main goal of the discipline is to restore lost functions of the masticatory apparatus (chewing, speech, aesthetic) and prevent further complications associated with tooth loss.

Orthopedic treatment is the final stage of the patient's comprehensive dental rehabilitation.

3. The main objectives of orthopedic dentistry

The main tasks include:

- restoration of the integrity of dental arches in case of their defects;
- restoration of chewing function;
- restoration of facial and smile aesthetics;



- normalization of the function of the temporomandibular joint (TMJ);
- prevention of tooth displacement and deformation of dental arches;
- prevention of alveolar ridge atrophy;
- improving the patient's quality of life;
- development and implementation of new prosthetic methods.

4. The place of orthopedic dentistry in the healthcare system

Orthopedic dentistry is closely related to other areas of dentistry:

- therapeutic dentistry (treatment of caries and its complications before prosthetics);
- surgical dentistry (tooth extraction, implantation);
- periodontology (treatment of periodontal diseases);
- Orthodontics (correction of teeth position and bite).

Thus, orthopedic dentistry is the final link in complex dental treatment.

5. Causes of dental defects

Defects in dental arches can occur due to:

- caries and its complications;
- periodontal diseases;
- injuries to teeth and jaws;
- congenital adentia;
- surgical interventions;
- oncological diseases;
- age-related changes.

6. Classification of dental defects

There are several classifications of dental defects. The most widely used is the Kennedy classification.

6.1 Kennedy Classification

1st grade- bilateral terminal defects (absence of chewing teeth on both sides).

Class II- one-sided terminal defect.



Class III— an included defect in the lateral part of the dental row (with preservation of teeth in front and behind the defect).

4th grade- a defect in the anterior part of the dental arch, crossing the midline.

6.2. *Additional (modifications)*

Each class may have modifications - additional defects located outside the main defect of the dentition.

7. Clinical significance of classification

Classification of dental defects is necessary for:

- selection of prosthesis design;
- planning orthopedic treatment;
- assessment of the distribution of chewing load;
- determination of supporting teeth;
- predicting the functional outcome.

8. The impact of dental defects on the body

Missing teeth leads to:

- chewing disorders;
- decreased digestive efficiency;
- malocclusion;
- displacement of teeth;
- overload of the remaining teeth;
- speech impairment;
- aesthetic defects;
- changes in the TMJ;
- bone tissue atrophy.

9. Indications for orthopedic treatment

Orthopedic treatment is indicated for:

- partial and complete loss of teeth;
- disruption of chewing function;



- aesthetic defects;
- periodontal diseases;
- the need to prevent complications.

10. Basic principles of orthopedic treatment

- individual approach to the patient;
- restoration of function and aesthetics;
- preservation of remaining teeth;
- uniform distribution of chewing load;
- biomechanical validity of the design;
- minimally invasive.

11. Conclusion

An introduction to orthopedic dentistry provides students with a basic understanding of the goals and objectives of the discipline. Classification of dental defects plays a key role in diagnosis and selection of an appropriate prosthetic method, ensuring successful functional and aesthetic rehabilitation of the patient.

Lecture Topic #2: Methods of examination of orthopedic patients.

1. The purpose of the lecture

To explore modern methods of patient examination in orthopedic dentistry, their importance for diagnosis, orthopedic treatment planning, and the selection of dental prosthesis designs. To develop students' understanding of a comprehensive approach to diagnosing dental defects and functional disorders of the dentoalveolar system.

2. General information

Examination of a patient in orthopedic dentistry is a complex of clinical and additional research methods aimed at assessing the condition of the dental system, identifying defects in the dental arches, functional disorders and determining indications for prosthetics.

The quality of diagnostics directly influences the choice of prosthesis design, treatment prognosis and its durability.



3. Stages of examination of an orthopedic patient

The examination includes several consecutive stages:

1. Patient interview (anamnesis).
2. Clinical examination.
3. Special functional tests.
4. Additional (instrumental and laboratory) methods.
5. Making a diagnosis and drawing up a treatment plan.

4. Patient interview (anamnesis)

The survey is the first and important stage of the examination.

4.1. Patient complaints:

- absence of teeth;
- difficulty chewing;
- speech impairment;
- aesthetic defects;
- tooth mobility;
- pain in the TMJ area;
- discomfort when wearing old dentures.

4.2. History of the disease:

- when defects in the dental arches appeared;
- causes of tooth loss (caries, trauma, periodontitis);
- previous treatment;
- the presence of prostheses and the period of their use.

4.3. Life history:

- concomitant diseases (diabetes, cardiovascular, endocrine);
- bad habits;
- occupational hazards;
- hygiene skills.



5. Clinical examination

Clinical examination includes:

5.1. *Facial examination:*

- facial symmetry;
- height of the lower third of the face;
- severity of nasolabial folds;
- condition of the lips and soft tissues.

5.2. *Examination of the oral cavity:*

- condition of the mucous membrane;
- hygienic condition;
- presence of inflammation;
- condition of the vestibule of the oral cavity.

5.3. *Examination of the dental arches:*

- presence of defects;
- shape of dental arches;
- tooth displacement;
- presence of secondary deformations;
- occlusal contacts.


5.4. *Periodontal examination:*

- tooth mobility;
- bleeding gums;
- depth of periodontal pockets.

6. Special research methods

6.1. *Palpation*

- assessment of soft tissue condition;
- detection of pain;
- TMJ 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"

6.2. Percussion

- determination of inflammatory processes of the periodontium;
- assessment of tooth sensitivity.

6.3. Probing

- examination of carious cavities;
- assessment of marginal fit of restorations.

6.4. Functional tests

- occlusion determination;
- assessment of chewing efficiency;
- articulation study.

7. Additional examination methods

7.1. Radiographic methods:

- targeted radiography;
- orthopantomography;
- computed tomography (CT);
- assessment of the condition of bone tissue and tooth roots.

7.2 Functional methods:


- electromyography (EMG) of the masticatory muscles;
- periodontal rheography;
- mastication;
- gnathodynamometry.

7.3 Laboratory methods:

- saliva analysis (pH-metry);
- microbiological studies;
- determination of inflammatory markers.

8. Occlusion assessment

Occlusion is assessed by:

	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"

- central relationship of the jaws;
- the presence of premature contacts;
- symmetry of teeth occlusion;
- height of bite.

9. Diagnosis of dental defects

The following are taken into account when making a diagnosis:

- localization of the defect;
- length;
- condition of the supporting teeth;
- periodontal condition;
- presence of secondary deformations.

10. The importance of a comprehensive examination

A comprehensive examination allows:

- establish an accurate diagnosis;
- choose the optimal method of prosthetics;
- prevent complications;
- increase the effectiveness of treatment;
- improve the prognosis of patient adaptation.

11. Conclusion

Examination methods in orthopedic dentistry include a wide range of clinical, functional, and instrumental examinations. Only a comprehensive approach allows for an accurate assessment of the dental system and ensures successful orthopedic treatment with restoration of function and aesthetics.

Lecture Topic #3: Fixed orthopedic structures: general classification and indications.

1. The purpose of the lecture

To study the main types of fixed prosthetics, their classification, indications for use, and clinical significance in restoring the dental system. To develop students'



understanding of the principles of selecting fixed prosthetics based on the clinical situation.

2. General information

Fixed orthopedic structures are types of dentures that are permanently fixed in the mouth and cannot be removed by the patient. They provide high functional effectiveness, comfort, and aesthetics.

The main goal of fixed prosthetics is to restore the anatomical shape of teeth, chewing function, aesthetics and prevent further complications of the dental system.

3. Main characteristics of fixed structures

- fixed on natural teeth or implants;
- provide stable occlusion;
- have high aesthetics;
- require minimal patient involvement in operation;
- have a long service life with proper care.

4. Classification of fixed orthopedic structures

Fixed structures are classified according to various characteristics:

4.1. *By functional purpose:*

- restorative (restorative);
- supporting;
- splinting;
- preventive;
- combined.

4.2. *By design:*

- **tabs (inlay, onlay, overlay);**
- **veneers;**
- **crowns;**
- **bridge prostheses;**
- **pin structures;**
- **adhesive prostheses (Maryland bridges).**



4.3. *By material of manufacture:*

- metal (cast, stamped);
- metal-ceramic;
- ceramic (metal-free);
- composite;
- zirconium.

4.4. *By fixation method:*

- cemented structures;
- adhesive structures;
- screw (in implantology).

5. Main types of fixed structures

5.1. *Tabs*

They are used to restore defects in hard dental tissue. They are used when the crown of a tooth is damaged and a filling is insufficiently effective.

5.2. *Veneers*

Thin overlays on the vestibular surface of teeth to improve aesthetics.

5.3. *Crowns*

They completely cover the crown of the tooth, restoring its shape and function.

5.4. *Bridge prostheses*

They are designed to replace one or more missing teeth with support from adjacent teeth.

5.5. *Pin structures*

They are used in cases of significant destruction of the crown part of the tooth while preserving the root.



6. Indications for the use of fixed structures

Fixed dentures are indicated for:

- defects of hard dental tissues (caries, trauma, non-carious lesions);
- partial loss of teeth (included defects);
- the need to restore the aesthetics of the frontal group of teeth;
- increased functional loads;
- normal or good condition of the supporting teeth;
- absence of pronounced periodontal diseases;
- sufficient oral hygiene of the patient.

7. Contraindications

- severe periodontal disease with tooth mobility;
- significant terminal defects without supporting teeth;
- poor oral hygiene;
- severe somatic diseases in the decompensation stage;
- impossibility of teeth preparation.

8. Advantages of fixed structures

- high aesthetics;
- patient comfort;
- good functional efficiency;
- stable fixation;
- no need for daily removal.

9. Disadvantages

- the need for tooth preparation;
- irreversibility of intervention;
- higher cost;
- complexity of manufacturing;
- risk of complications if installed incorrectly.



10. Importance in orthopedic dentistry

Fixed restorations are the primary method for restoring dental arches with limited defects. They help restore the anatomical integrity of teeth, preserve chewing and speech functions, and prevent tooth displacement and malocclusion.

11. Conclusion

Fixed orthopedic appliances occupy a vital place in modern dentistry. Their correct selection and use depend on a thorough diagnosis, the condition of the supporting teeth, and the individual characteristics of the patient. Knowledge of the classification and indications allows the orthopedist to select the optimal treatment method and ensure long-term functional and aesthetic results.

Lecture Topic #4: Stamped, cast and solid-cast crowns: types, features.

1. The purpose of the lecture

To study the main types of metal crowns (stamped, cast, and solid), their design features, indications, and clinical significance in orthopedic dentistry. To develop students' understanding of the advantages and disadvantages of various crown types and the principles of their use.

2. General information

Crowns are one of the main types of fixed orthopedic structures designed to restore the anatomical form, function and aesthetics of damaged teeth.

Metal crowns are traditionally used in orthopedic dentistry due to their high strength, durability, and resistance to chewing forces. These include stamped, cast, and solid-cast designs.

3. Stamped crowns

3.1 Definition

A stamped crown is a metal crown made by mechanically stamping a metal sleeve using a pre-prepared tooth model.



3.2. Manufacturing technology

- obtaining an impression;
- making a plaster model;
- selection of metal sleeve;
- stamping of the crown using special stamps;
- fitting and polishing.

3.3. Features

- thin walls;
- relatively simple to manufacture;
- limited fit accuracy;
- possible deformation of the marginal fit.

3.4. Indications

- temporary prosthetics;
- restoration of lateral teeth with moderate load;
- limited financial capabilities of the patient.

3.5. Disadvantages

- imprecise marginal fit;
- risk of developing secondary caries;
- insufficient anatomical accuracy;
- low aesthetics.


4. Cast crowns

4.1 Definition

A cast crown is manufactured using precision metal casting using a wax model, which ensures high precision and a tight fit to the tooth tissue.

4.2. Manufacturing technology

- tooth preparation;
- obtaining an accurate impression;
- making a plaster model;

	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"

- wax crown modeling;
- metal alloy casting;
- processing and polishing.

4.3. Features

- high precision fit;
- structural strength;
- uniform load distribution;
- durability.

4.4. Indications

- restoration of chewing teeth;
- the presence of significant destruction of the crown of the tooth;
- use as a support for bridge prostheses;
- the need for high structural strength.

4.5. Disadvantages

- lack of aesthetics (metallic color);
- the need for significant tooth preparation;
- possible thermal conductivity of the metal.

5. Cast crowns

5.1 Definition

A cast crown is a type of cast crown made entirely from a single metal alloy without any stamped elements.

5.2. Design Features

- monolithic structure;
- absence of seams and joints;
- high strength;
- precise marginal fit.

5.3. Manufacturing technology

- precise tooth preparation;



- obtaining a high-precision impression;
- wax composition modeling;
- alloy casting (cobalt-chromium, nickel-chromium, etc.);
- finishing and polishing.

5.4. Indications

- lateral teeth with high chewing load;
- supporting teeth for bridge prostheses;
- patients with bruxism;
- cases where aesthetics is not a priority.

5.5. Advantages

- high strength;
- precise marginal fit;
- durability;
- resistance to deformation.

5.6. Disadvantages

- low aesthetics;
- the need for significant dissection;
- possible impact on antagonists in case of incorrect occlusion.

6. Comparative characteristics of crowns

- **Stamped**- simple, cheap, but less accurate.
- **Cast**- more accurate and reliable.
- **Solid cast**— the most durable and functional among metal structures.

7. Clinical significance

The choice of crown type depends on:

- tooth localization;
- functional load;
- condition of dental tissues;
- aesthetic requirements;
- general condition of the patient's oral cavity.



8. Conclusion

Stamped, cast, and solid-cast crowns occupy an important place in orthopedic dentistry. Despite the development of modern aesthetic materials, metal crowns remain a reliable and functionally sound method for restoring teeth, especially in the posterior regions. The correct choice of design ensures long-lasting treatment and stable chewing function.

Lecture Topic No. 5. Preparation of teeth for different types of crowns.

1. The purpose of the lecture

To study the principles, features, and clinical and biological foundations of tooth preparation for various types of fixed orthopedic structures (stamped, cast, metal-ceramic, plastic, and combined crowns), and to develop an understanding of the requirements for the formation of a tooth stump that ensures the durability of the prosthesis and the preservation of periodontal tissues.

2. Issues under consideration

- biological principles of preparation of hard dental tissues;
- goals and objectives of preparation for artificial crowns;
- basic principles of formation of a tooth stump;
- types of preparation depending on the type of crown;
- features of preparation for stamped crowns;
- features of preparation for cast and metal-ceramic crowns;
- stages of tooth preparation;
- instruments and technologies used in preparation;
- criteria for the quality of preparation;
- prevention of complications during preparation.

3. Main points of the lecture

3.1. Biological principles of tooth preparation

Tooth preparation for fixed prosthetics is one of the most critical stages of orthopedic treatment. It involves mechanically removing hard tooth tissue to create an optimal stump shape for the implant's abutment.

In this case, it is necessary to take into account:

- vitality of dental pulp;
- thickness of the remaining hard tissues;
- periodontal condition;



- thermal and mechanical sensitivity of tissues;
- risk of developing complications (pulpitis, periodontitis, hyperesthesia).

The main principle is the minimum necessary preparation with maximum preservation of tooth tissue.

3.2. Objectives of preparation

The main objectives are:

- creation of the correct geometric shape of the stump;
- ensuring retention and stability of the future crown;
- formation of a clear and uniform ledge (if necessary);
- ensuring a tight fit of the crown;
- preservation of the anatomical shape of the dental arch;
- prevention of periodontal injury.

3.3. Principles of tooth stump formation

The tooth stump after preparation must meet the following requirements:

- have the correct taper (usually 3–6°);
- provide mechanical retention;
- have no sharp edges or overhanging areas;
- have a smooth surface;
- maintain sufficient height to secure the prosthesis;
- do not injure the marginal periodontium.

3.4 Types of preparation

The following main types are distinguished:

- circular (full) preparation;
- partial preparation;
- with the formation of a ledge (stepped);
- without ledge (conical);
- combined.

The choice of method depends on the type of crown, the clinical situation and the condition of the tooth.



3.5. Preparation for stamped crowns

Stamped crowns are among the simplest designs.

Features of preparation:

- minimal removal of hard tissue;
- formation of a cylindrical or slightly conical shape;
- absence of a mandatory, clearly defined ledge;
- smoothing of contact surfaces;
- preserving maximum tooth volume.

Disadvantage of the method: insufficient precision of fit and risk of secondary caries.

3.6. Preparation for cast crowns

Cast crowns require more precise preparation.

Peculiarities:

- formation of a pronounced taper (6–10°);
- mandatory creation of a ledge or its modification;
- uniform grinding of tissues;
- creating clear preparation boundaries;
- mandatory retention form of the stump.

Advantages:

- high accuracy;
- uniform distribution of chewing load;
- durability of the structure.

3.7. Preparation for metal-ceramic crowns

Metal-ceramic structures require the most precise and accurate preparation.

Key Features:

- significant removal of hard tissue;



- formation of a pronounced circular ledge (usually of the shoulder type);
- uniform tissue reduction over all surfaces;
- mandatory creation of space for the ceramic layer;
- absence of sharp transitions and edges.

It is important to consider:

- pulp preservation;
- preventing tooth overheating;
- precise adherence to anatomical contours.

3.8. Instruments for preparation

Used:

- diamond burs of various shapes;
- carbide cutters;
- turbine tips with cooling;
- abrasive discs and strips;
- polishing tools.

A prerequisite is constant water cooling to prevent thermal damage to the pulp.

3.9. Criteria for the quality of preparation

A high-quality preparation must meet the following criteria:

- uniform taper of the stump;
- absence of undercuts;
- smooth tooth surface;
- clear ledge line;
- sufficient stump height;
- preservation of the anatomical shape of the dental arch.

3.10. Possible complications

If the preparation technique is not followed, the following may occur:

- thermal burn of the pulp;
- traumatic pulpitis;



- dentin hyperesthesia;
- gum damage;
- secondary caries;
- occlusion violation.

3.11. Prevention of complications

To prevent complications it is necessary:

- strictly observe the cooling regime;
- use sharp instruments;
- observe the stages of preparation;
- take into account the anatomy of the tooth;
- provide adequate anesthesia;
- control the grinding depth.

4. Conclusion

Tooth preparation for artificial crowns is a key stage of orthopedic treatment. The quality of this preparation determines the fixation of the structure, the longevity of the prosthesis, and the condition of the periodontal tissues. The modern approach involves maximum gentleness to the hard tissues of the tooth while strictly adhering to the biomechanical principles of crown formation.

Lecture Topic No. 6. Intermediate and supporting elements of bridge prostheses.

1. The purpose of the lecture

To study the design features of bridge prostheses, the role of supporting and intermediate elements, their functional significance, biomechanical principles of masticatory load distribution, as well as clinical indications and requirements for the design of bridge structures.

2. Issues under consideration

- general characteristics of bridge prostheses;
- the concept of supporting elements and their types;
- the intermediate part of a bridge prosthesis (pontic);
- biomechanics of bridge structures;
- requirements for supporting teeth;
- shapes of the intermediate part and their clinical significance;
- connecting elements of bridge prostheses;



- indications and contraindications for use;
- errors in the design of supports and intermediate parts.

3. Main points of the lecture

3.1. *General characteristics of bridge prostheses*

A bridge prosthesis is a fixed orthopedic structure designed to restore one or more missing teeth in the presence of supporting teeth on both sides of the defect in the dental arch.

The design includes three main components:

- supporting elements;
- intermediate part (pontic);
- connecting elements.

The main objective of a bridge prosthesis is to restore chewing function, speech and aesthetics while evenly distributing the chewing load on the supporting teeth and periodontal tissues.

3.2. *Supporting elements of a bridge prosthesis*

Support elements are parts of the structure that are fixed to natural teeth or implants and bear the main chewing load.

These include:

- crowns (stamped, cast, metal-ceramic, zirconium);
- tabs;
- pin structures;
- adhesive (sticky) elements.

Basic requirements for supporting teeth:

- sufficient clinical height;
- stability (absence of pathological mobility);
- preserved or restored periodontium;
- absence of pronounced inflammatory processes;
- adequate ratio of crown and root parts.



3.3 Functions of supporting elements

The supporting elements perform the following functions:

- fixation of a bridge prosthesis;
- perception and distribution of chewing load;
- stabilization of the structure in the oral cavity;
- preventing displacement of the intermediate part;
- participation in the restoration of occlusion.

The load placed on missing teeth is transmitted through the periodontal supports, so a correct biomechanical assessment is important.

3.4. Intermediate part (pontic)

The intermediate part of a bridge prosthesis is made up of artificial teeth that replace a defect in the dental arch.

Main functions:

- restoration of chewing efficiency;
- restoration of aesthetics;
- maintaining phonetics;
- preventing displacement of adjacent teeth and antagonists.

3.5. Forms of the intermediate part

In clinical practice, several forms of pontic are distinguished:

1. **Flushing (hygienic)**

- does not come into contact with mucous membranes;
- easy to clean;
- used more often in the lateral sections.

2. **Saddle-shaped**

- partially adjacent to the mucous membrane;
- provides better aesthetics;
- more difficult to maintain hygiene.



3. **Tangent (tangential)**

- light touch of the mucous membrane;
- used in aesthetically significant areas.

4. **Conical (hygienic modified)**

- Improved version for easier maintenance.

The choice of form depends on:

- localization of the defect;
- conditions of the mucous membrane;
- aesthetic requirements;
- the patient's hygienic capabilities.

3.6. Biomechanics of bridge prostheses

A bridge prosthesis functions on the principle of a beam resting on supporting teeth.

Main biomechanical features:

- the load is distributed between the supports;
- a leverage effect occurs;
- the load on the periodontium of the supporting teeth increases;
- The correct span length is important (excessive extension is not recommended).


The larger the defect and the fewer supports, the higher the risk of overload.

3.7. Connecting elements

The connection between the supporting and intermediate parts can be:

- rigid (cast, soldered connection);
- semi-rigid (with stress compensation elements);
- articulated (rarely used).

Rigid connection is the most common and provides stability to the structure.

	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"

3.8. *Clinical design requirements*

When planning a bridge prosthesis, it is necessary to take into account:

- ratio of span length to number of supports;
- periodontal condition;
- occlusal relationships;
- anatomy of the dentition;
- distribution of chewing load;
- aesthetic requirements.

3.9. *Indications for use*

Bridge prostheses are indicated for:

- absence of 1-3 teeth in a row;
- the presence of stable supporting teeth;
- impossibility of implantation;
- defects in an aesthetically significant area.

3.10. *Contraindications*

- pronounced mobility of the supporting teeth;
- severe forms of periodontitis;
- multiple end defects;
- poor oral hygiene;
- short clinical crowns of abutment teeth.

3.11. *Design errors*

The most common mistakes:

- incorrect choice of supporting teeth;
- excessive span length;
- incorrect shape of the pontic;
- overload of supports;
- occlusion disorder;
- poor hygienic accessibility.

Consequences of errors:



- loosening of supporting teeth;
- periodontal inflammation;
- destruction of the structure;
- disruption of chewing function.

4. Conclusion

The intermediate and supporting elements of bridge prostheses are key components of the structure, ensuring its functionality and durability. The success of orthopedic treatment directly depends on the correct choice of supports, rational load distribution, and the competent design of the intermediate portion of the prosthesis, taking into account the anatomical, physiological, and biomechanical characteristics of the dental system.

Lecture Topic No. 7. Temporary orthopedic structures.

1. The purpose of the lecture

To study the concept, classification, clinical significance and stages of manufacturing temporary orthopedic structures, their role in complex orthopedic treatment, as well as the requirements for temporary prostheses from the point of view of biomechanics, aesthetics and protection of tissues of the dental system.

2. Issues under consideration

- concept of temporary orthopedic structures;
- goals and objectives of temporary prosthetics;
- classification of temporary structures;
- indications and contraindications for use;
- functions of temporary prostheses;
- materials used for manufacturing;
- clinical and laboratory stages of manufacturing;
- features of fixation of temporary structures;
- possible complications and their prevention.

3. Main points of the lecture

3.1. The concept of temporary orthopedic structures

Temporary orthopedic structures are prostheses intended for short-term use during the period of preparation for permanent prosthetics or during the stages of orthopedic treatment.



They are used for periods ranging from several days to several months and perform important biological, functional and aesthetic tasks.

3.2. Objectives and tasks of temporary prosthetics

The main purposes of temporary structures:

- protection of prepared teeth from external influences;
- prevention of displacement of teeth and antagonists;
- restoration of chewing function;
- maintaining the aesthetics of the dentition;
- adaptation of the patient to the future permanent prosthesis;
- formation of the correct gum contour.

3.3. Classification of temporary structures

Temporary orthopedic structures are divided into:

1. By period of use:

- short-term (days);
- medium-term (weeks);
- long-term (months).

2. By manufacturing method:

- straight (made in the oral cavity);
- indirect (laboratory).

3. By design:

- temporary crowns;
- temporary bridge prostheses;
- temporary removable dentures;
- adhesive (Maryland type bridges).

3.4. Indications for use

Temporary structures are indicated for:



- preparation of teeth for permanent crowns;
- manufacturing of bridge prostheses;
- implantation treatment;
- the need for aesthetic correction;
- treatment of patients with severe defects of the dental arches;
- adaptation period before permanent prosthetics.

3.5. Contraindications

- severe allergic reactions to materials;
- severe inflammatory diseases of the mucous membrane;
- lack of possibility to fix the structure;
- poor oral hygiene (relative contraindication).

3.6. Functions of temporary structures

Temporary dentures perform the following functions:

- **protective**— prevent thermal and mechanical irritation of the tooth;
- **aesthetic**- restore appearance;
- **functional**- participate in chewing;
- **stabilizing**- prevent teeth displacement;
- **formative**- support the gum contour;
- **diagnostic**— allow you to evaluate the future design.

3.7. Materials for temporary structures

The most commonly used are:

- acrylic plastics;
- composite materials;
- bis-acrylic resins;
- light-curing materials;
- thermoplastic materials.

The choice of material depends on the clinical situation, duration of use and aesthetic requirements.



3.8. Clinical and laboratory stages of manufacturing

Direct method:

1. Tooth preparation.
2. Taking a preliminary impression.
3. Filling the impression with material.
4. Formation of a temporary structure in the mouth.
5. Correction and polishing.
6. Fixation with temporary cement.

Indirect method:

1. Obtaining impressions.
2. Making a model.
3. Modeling of a temporary structure in the laboratory.
4. Fitting.
5. Fixation in the oral cavity.

3.9. Temporary crowns

Temporary crowns are used to protect individual teeth after preparation.

Requirements:

- precise fit to the tooth stump;
- no pressure on the gums;
- restoration of anatomical shape;
- sufficient strength;
- aesthetics.

3.10. Temporary bridge structures

They are used when several teeth are missing.

Peculiarities:

- mandatory fixation on supporting teeth;
- distribution of chewing load;
- preventing tooth migration;



- maintaining interdental contacts.

3.11. Possible complications

If manufactured or fixed incorrectly, the following may occur:

- gum inflammation;
- secondary caries;
- de-cementation;
- occlusion disorder;
- trauma to the mucous membrane.

3.12. Prevention of complications

- precise adherence to production stages;
- high-quality processing of the edges of the structure;
- the right choice of cement;
- occlusion control;
- patient hygiene.

4. Conclusion

Temporary orthopedic structures are an important stage of comprehensive orthopedic treatment. They ensure dental protection, restore function and aesthetics, and facilitate patient adaptation to permanent dentures. Proper planning and fabrication of temporary structures significantly improves the quality of the final orthopedic outcome.

Lecture Topic No. 8. Errors and complications at the stages of preparation and fixation.

1. The purpose of the lecture

To study the main errors that occur during the stages of tooth preparation and fixation of fixed orthopedic structures, their causes, clinical manifestations and methods of prevention, as well as to form an understanding of possible complications and ways to eliminate them.



2. Issues under consideration

- the importance of the stages of preparation and fixation in orthopedic treatment;
- classification of errors at the stage of preparation;
- clinical complications of tooth preparation;
- errors in taking impressions, forming a stump and temporary prosthetics;
- errors at the stage of fixing orthopedic structures;
- complications after fixing crowns and bridges;
- prevention of errors and complications;
- doctor's tactics in case of complications.

3. Main points of the lecture

3.1. *The importance of the stages of preparation and fixation*

Tooth preparation and subsequent fixation of orthopedic structures are key stages of fixed prosthetics. Their quality determines:

- durability of the prosthesis;
- functional efficiency;
- condition of the pulp and periodontium;
- prevention of secondary caries;
- patient adaptation to the design.

Errors at these stages can lead to serious functional and biological complications.

3.2. *Errors at the stage of tooth preparation*

The most common mistakes include:

1. Insufficient preparation

- insufficient tissue reduction;
- lack of space for construction;
- occlusion violation.

Consequences:

- poor fixation of the crown;
- overload of the structure;
- premature wear of the material.

2. Over-preparation



- excessive removal of hard tissue;
- opening of the pulp;
- thinning of the tooth walls.

Consequences:

- pulpitis;
- the need for endodontic treatment;
- decrease in tooth strength.

3. Overheating of the tooth during preparation

- insufficient cooling;
- long-term exposure to boron.

Consequences:

- thermal pulp necrosis;
- postoperative sensitivity.

4. Formation of an incorrect stump

- lack of taper;
- presence of undercuts;
- uneven edges.

Consequences:


- impossibility of precise crown fit;
- violation of fixation.

5. Periodontal trauma

- deep subgingival preparation;
- damage to the gingival margin.

Consequences:

- gingivitis;
- gum recession;

	<p align="center">Educational institution Royal Metropolitan University</p>
	<p align="center">Quality management system Educational and methodological complex of the discipline "Orthopedic dentistry" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"</p>

- bleeding.

3.3. Errors in taking impressions and temporary prosthetics

Imprint errors:

- deformation of the impression material;
- presence of bubbles and ruptures;
- inaccurate display of the ledge.

Consequences:

- imprecise fit of the prosthesis;
- violation of marginal adhesion.

Errors in temporary structures:

- poor fixation;
- mucosal injury;
- overbite.

3.4. Errors at the commit stage

1. Incorrect choice of fixative cement

- use of unsuitable material.

Consequences:

- weak fixation;
- early de-cementation.

2. Violation of the isolation of the surgical field

- contact with saliva or blood.

Consequences:

- decreased adhesion;
- breach of tightness.



3. Excessive amount of cement

- lack of control during crown seating.

Consequences:

- gum inflammation;
 - mechanical irritation of tissues.
-

4. Insufficient cement removal

- leaving residues in the subgingival area.

Consequences:

- chronic gingivitis;
- periodontitis.

5. Incorrect fit of the structure

- discrepancy with the stump anatomy;
- occlusion violation.

Consequences:

- traumatic occlusion;
- pain when chewing;
- overload of supporting teeth.

3.5. *Complications after fixation*

After fixing the prosthesis, the following may occur:

- postoperative tooth sensitivity;
- secondary caries;
- gum inflammation;
- de-cementation of the structure;
- occlusion disorder;
- overload of supporting teeth;



- pathological mobility of teeth.

3.6. Causes of complications

Main reasons:

- violation of dissection technique;
- laboratory stage errors;
- inaccurate diagnosis;
- improper design planning;
- failure to comply with fixation rules;
- poor oral hygiene of the patient.

3.7. Prevention of errors and complications

To prevent complications it is necessary:

- strictly follow the dissection protocol;
- use cooling when treating the tooth;
- control the depth and shape of preparation;
- carefully isolate the working area when fixing;
- choose the right fixing cement;
- carry out occlusion control;
- remove excess cement;
- teach the patient hygiene.

3.8. Physician's tactics in case of complications

Depending on the situation:

- occlusion correction (in case of overbite);
- removal and re-fixation of the structure;
- endodontic treatment for pulpitis;
- treatment of periodontal inflammation;
- replacement of a prosthesis in case of gross manufacturing errors.

4. Conclusion

Errors during the preparation and cementation stages are one of the main causes of complications in orthopedic dentistry. Their prevention requires strict adherence to



clinical protocols, careful treatment planning, and high-quality professional training of the dentist. High-quality execution of these stages ensures the longevity of the prostheses and the preservation of healthy oral tissues.

Lecture Topic #9. Materials in fixed prosthetics (metals, ceramics, cements).

1. The purpose of the lecture

To study the main groups of materials used in fixed prosthetics (metals, ceramic materials and fixing cements), their properties, requirements for them, clinical indications and features of use in orthopedic dentistry.

2. Issues under consideration

- general requirements for materials for fixed prosthetics;
- classification of dental metals;
- properties and application of noble and non-noble alloys;
- ceramic materials: types and features;
- metal-ceramic structures;
- dental cements: classification and properties;
- modern adhesive systems;
- clinical errors in the selection of materials;
- biocompatibility and corrosion resistance of materials.

3. Main points of the lecture

3.1. General requirements for materials

Materials used in fixed prosthetics must meet a number of requirements:

- biocompatibility with oral tissues;
- high mechanical strength;
- resistance to corrosion and chemical influences;
- aesthetics (especially for front teeth);
- precision of processing and modeling;
- stability of shape over time;
- minimal toxicity.

3.2. Metals and alloys in orthopedic dentistry

Metals are the basis of most fixed structures.

Classification:



1. Precious metals:

- gold and its alloys;
- platinum;
- palladium.

2. Base metals:

- cobalt-chromium alloys;
- nickel-chromium alloys;
- titanium and its alloys.

3.3 Properties of metals

Noble alloys:

- high biocompatibility;
- excellent corrosion resistance;
- plastic;
- high cost.

Base alloys:

- high strength;
- low cost;
- allergic reaction possible (especially nickel);
- complexity of processing.


Titanium:

- ease;
- high biocompatibility;
- corrosion resistance;
- complexity of casting and processing.

3.4. Application of metals

Metals are used for:

- crown frames;

	<p align="center">Educational institution Royal Metropolitan University</p>
	<p align="center">Quality management system Educational and methodological complex of the discipline "Orthopedic dentistry" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"</p>

- bridge prostheses;
- pin structures;
- clasp dentures;
- metal-ceramic frameworks.

3.5. Ceramic materials

Ceramics are widely used in aesthetic orthopedic dentistry.

Main types of ceramics:

- porcelain ceramics;
- glass ceramics;
- zirconium oxide;
- lithium disilicate.

3.6. Properties of ceramics

- high aesthetics;
- similarity to natural teeth;
- high hardness;
- fragility;
- low plasticity;
- high resistance to staining.

3.7. Application of ceramics

Ceramics are used for:

- veneers;
- metal-free crowns;
- metal-ceramic structures (facing);
- inlays and onlays.

3.8. Metal-ceramic structures

Metal ceramics combines:

- durable metal frame;
- aesthetic ceramic coating.



Advantages:

- high strength;
- good aesthetics;
- durability.

Flaws:

- risk of ceramic chipping;
- the need for significant tooth preparation.

3.9. Dental cements

Cements are used to fix orthopedic structures.

Classification of cements:

1. Phosphate cements
2. Zinc oxide eugenol cements
3. Polycarboxylate cements
4. Glass ionomer cements
5. Rubber (composite) cements

3.10. Properties of cements


Phosphate cements:

- high strength;
- but lack of adhesion;
- possible pulp irritation.

Glass ionomer cements:

- chemical bond with dental tissue;
- fluoride release;
- good biocompatibility.

Composite cements:

	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"

- high adhesion;
- high aesthetics;
- complex application technique.

3.11. Selection of cement

Depends on:

- type of construction;
- depth of preparation;
- pulp conditions;
- aesthetic requirements;
- retention of the structure.

3.12. Biocompatibility and corrosion

An important aspect is the interaction of materials with the biological environment:

- corrosion of metals can lead to toxic reactions;
- galvanic currents when combining different metals;
- allergic reactions to nickel and chromium;
- irritation of the mucous membrane by cements.

3.13. Clinical errors in the selection of materials

- use of incompatible metals;
- wrong choice of cement;
- inconsistency of the material with the clinical situation;
- ignoring allergic history;
- Violation of fixation technology.

4. Conclusion

The materials used in fixed prosthetics play a key role in the success of orthopedic treatment. The correct choice of metals, ceramics, and cements ensures the durability of the structure, biocompatibility, and high aesthetic results. Modern orthopedic dentistry strives to use highly aesthetic and bioinert materials with minimal impact on oral tissues.

Lecture plan for the 8th semester



Lecture Topic No. 1. Bridge prostheses: types, indications, designs.

1. The purpose of the lecture

Learn the main types of bridges, their design features, indications, and contraindications. Understand the principles of choosing a bridge design based on the clinical situation, the condition of the supporting teeth, and the extent of the dental defect.

2. Issues under consideration

- definition and general characteristics of bridge prostheses;
- elements of bridge prosthesis design;
- classification of bridge prostheses;
- indications for the use of bridge structures;
- contraindications to bridge prosthetics;
- requirements for supporting teeth;
- features of distribution of chewing load;
- modern materials for bridge prostheses;
- clinical errors and complications.

3. Main points of the lecture

3.1. The concept of bridge prostheses

A bridge prosthesis is a fixed orthopedic structure designed to replace one or more missing teeth, supported by natural teeth or implants.

The main function of a bridge prosthesis is to restore chewing efficiency, aesthetics and normalize occlusal relationships.


3.2. Design of a bridge prosthesis

A bridge prosthesis consists of three main elements:

- **supporting elements**— crowns or inlays fixed on supporting teeth;
- **intermediate part (prosthesis body)**- replaces missing teeth;
- **connecting elements**— ensure strength and stability of the structure.

The shape of the prosthesis body can be:

- flushing;
- tangent;
- saddle-shaped;
- combined.

	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"

3.3. Classification of bridge prostheses

1. By manufacturing method:

- stamped;
- soldered;
- one-piece;
- combined;
- metal-ceramic;
- metal-free (ceramic).

2. By fixation method:

- on crowns;
- on tabs;
- on implants;
- adhesive bridge prostheses.

3. By the extent of the defect:

- small (1 tooth);
- medium (2-3 teeth);
- extended defects.

4. By location of the defect:

- included defects;
- end defects (limited use).

3.4. Indications for use

Bridge prostheses are indicated for:

- included defects of the dentition;
- absence of one or more teeth;
- sufficient quantity and quality of supporting teeth;
- stable periodontium of supporting teeth;
- normal occlusal relationships;
- impossibility or unwillingness of implantation.



3.5. Contraindications

- pronounced tooth mobility;
- severe forms of periodontitis;
- significant end defects without support;
- low clinical crowns of supporting teeth;
- poor oral hygiene;
- pronounced bite anomalies without preliminary correction.

3.6. Requirements for supporting teeth

The supporting teeth must have:

- sufficient root length;
- stable periodontium;
- lack of pronounced mobility;
- preserved anatomical form or the possibility of restoration;
- adequate crown-to-root ratio.

3.7. Biomechanics of bridge prostheses

When a bridge prosthesis is functioning, the chewing load is distributed between the supporting teeth and the intermediate part.


Basic biomechanical principles:

- uniform load distribution;
- taking into account the length of the span (the longer it is, the higher the load on the supports);
- taking into account the periodontal area of the supporting teeth;
- elimination of lever overloads;
- control of occlusal contacts.

3.8. Modern materials

The following materials are used to make bridge prostheses:

- metals and alloys (cobalt-chromium, titanium);
- metal ceramics;
- metal-free ceramics (zirconium dioxide, lithium disilicate);

	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"

- composite materials.

3.9 Clinical errors and complications

Possible errors:

- incorrect choice of supporting teeth;
- inconsistency of the design with the clinical situation;
- overload of supporting teeth;
- imprecise fit of the prosthesis;
- occlusion violation.

Complications:

- mobility of supporting teeth;
- periodontal inflammation;
- secondary caries;
- de-cementation of the prosthesis;
- chips in the facing material.

4. Conclusion

Bridges are an important method for restoring dental arches in cases of partial tooth loss. Successful treatment depends on the correct design, assessment of the supporting teeth, adherence to biomechanical principles, and precise clinical execution of all stages of the prosthetic procedure.

Lecture Topic No. 2. Prosthetics for single and multiple defects.

1. The purpose of the lecture

Explore the specifics of orthopedic treatment for patients with single and multiple dental defects. Learn the principles of choosing prosthetic designs based on the clinical situation, the condition of the dental system, the nature of the defect, and the functional load.



2. Issues under consideration

• concept of dental arch defects; • classification of single and multiple defects; • features of prosthetics for single defects; • features of prosthetics for multiple defects; • choice of orthopedic structure; • the role of supporting teeth and their assessment; • biomechanical principles of load distribution; • use of removable and non-removable structures; • combined prosthetics; • complications and errors in treatment.

3. Main points of the lecture

3.1. The concept of dental defects

A dental defect is the absence of one or more teeth, resulting in a disruption of the integrity of the dental arch, decreased chewing efficiency, and changes in occlusion and aesthetics.

Defects can be:

- single (absence of one tooth);
- multiple (absence of several teeth);
- included;
- terminal;
- combined.

3.2. Classification of defects

Single defects:

- absence of one tooth in the dental row;
- most commonly included defects;
- relatively simple orthopedic situation.

Multiple defects:

- absence of several teeth;
- can be located in different parts of the dental row;
- often accompanied by secondary malocclusions.



3.3. Prosthetics for single defects

For single defects the following are used:

- bridge prostheses;
- implantological structures;
- adhesive bridge prostheses (in some cases).

Peculiarities:

- minimum length of the structure;
- preservation of adjacent teeth;
- high aesthetic demands (especially in the frontal area);
- the need for precise occlusion planning.

Advantages:

- rapid restoration of function;
- high aesthetics;
- stable result.

3.4. Prosthetics for multiple defects

Multiple defects require a more complex approach.

Used:

- removable plate dentures;
- clasp dentures;
- combined structures;
- bridge prostheses supported by several groups of teeth;
- implantation systems.

Peculiarities:

- the need to redistribute the chewing load;
- often reduced supporting capacity of teeth;
- presence of secondary deformations;
- the need for preliminary orthodontic or therapeutic preparation.



3.5. Selection of prosthesis design

The choice depends on:

- number and location of defects;
- condition of the supporting teeth;
- periodontal conditions;
- occlusal relationships;
- patient's age;
- hygienic condition of the oral cavity.

3.6. Biomechanical features

When making prosthetics, it is important to consider:

- distribution of chewing load;
- lever effects;
- length of the defect;
- stability of supporting teeth;
- periodontal condition.

With multiple defects, the risk of overload is significantly higher.

3.7. Combined prosthetics

Combined designs are used for complex defects and include:

- combination of fixed and removable elements;
- use of locking fasteners;
- supporting and retaining clasp dentures;
- bridge structures in combination with partial dentures.

3.8. Errors and complications

Possible errors:

- incorrect assessment of supporting teeth;
- failure to take biomechanics into account;
- overload of individual teeth;
- incorrect choice of design;



- occlusion violation.

Complications:

- tooth mobility;
- periodontal inflammation;
- chewing dysfunction;
- de-cementation or failure of the structure.

4. Conclusion

Prosthetic treatment for single and multiple dental defects requires an individualized approach, accurate diagnosis, and careful design selection. For single defects, fixed dentures are preferred, while for multiple defects, combined or removable prosthetics are often required. Successful treatment depends on the condition of the supporting teeth, the periodontium, and proper load distribution.

Lecture Topic No. 3. Biomechanics of fixed prosthetics.

1. The purpose of the lecture

To study the basic biomechanical principles of functioning of fixed orthopedic structures, the features of distribution of chewing load in the "tooth - periodontium - prosthesis" system, as well as factors influencing the durability and stability of fixed prostheses.

2. The issues under consideration

- the concept of biomechanics in orthopedic dentistry;
- features of distribution of chewing load in the dental system;
- biomechanics of supporting teeth and periodontium;
- biomechanics of bridge prostheses;
- the concept of a lever in orthopedic dentistry;
- the influence of span length and number of supports on the load;
- overload of supporting teeth and its consequences;
- the role of occlusion in the biomechanics of prostheses;
- prevention of biomechanical complications.

3. Key points of the lecture

3.1. The concept of biomechanics in orthopedic dentistry



The biomechanics of fixed prosthetics studies the interaction of forces acting on teeth, dentures, and the periodontium during chewing, speaking, and swallowing. The primary goal is to ensure uniform load distribution and prevent overloading of the supporting structures.

The dental system is considered as a functional-dynamic system in which the prosthesis becomes part of a single biomechanical complex.

3.2. Distribution of chewing load

Normally, the chewing load is distributed as follows:

- through the crown of the tooth to the root;
- through the periodontal ligament to the alveolar bone;
- further to the bone structures of the jaw.

The periodontium performs a shock-absorbing function, reducing peak loads due to the elasticity of the periodontal ligament.

In the presence of fixed dentures, the load is redistributed between the supporting teeth and the intermediate elements of the structure.

3.3. Biomechanics of supporting teeth

The supporting tooth in a fixed structure experiences:

- vertical loads (axial);
- horizontal (lateral);
- torque moments.

Axial loads are the most physiological. Lateral and tilting forces are considered traumatic for the periodontium.

The degree of stability of the supporting tooth depends on:

- length and shape of the root;
- area of the periodontal ligament;
- condition of the periodontium;
- crown/root ratio.

3.4. Biomechanics of bridge prostheses

A bridge prosthesis is a system that operates on the principle of a beam fixed to supports.

Main biomechanical features:



- the supporting teeth take the load from the intermediate part;
- a lever effect occurs;
- the longer the span, the higher the load on the supports.

The intermediate part (pont) transfers pressure to the supports, which requires strict design calculations.

3.5. The concept of a lever in orthopedic dentistry

A bridge can be considered as a lever system:

- supporting teeth - support points;
- intermediate part - lever;
- chewing load - force of impact.

As the span length increases, the lever effect increases, which leads to overload of the periodontium of the supporting teeth.

3.6. Influence of span length and number of supports

The biomechanical stability of the structure depends on:

- the number of supporting teeth;
- the length of the defect in the dental arch;
- the shape of the intermediate part.

The greater the number of supports, the more evenly the load is distributed.

However, excessive inclusion of teeth in the structure can lead to uneven mobility and complications.

3.7. Overloading of supporting teeth

Overload occurs when:

- incorrectly designed prosthesis;
- insufficient number of supports;
- occlusion disorders;
- overbite;
- presence of parafunctions (bruxism).

Consequences of overload:

- mobility of supporting teeth;
- periodontal inflammation;
- bone resorption;
- failure of the prosthesis.

3.8. The role of occlusion in biomechanics



Occlusion determines the nature of the contacts of the teeth when the jaws are closed.

Correct occlusion ensures:

- uniform load distribution;
- absence of premature contacts;
- stability of the prosthetic structure.

Occlusion errors are one of the main causes of biomechanical complications.

3.9. Prevention of biomechanical complications

To prevent overload, it is necessary:

- correct planning of the prosthesis design;
- taking into account the periodontal condition of the supporting teeth;
- rational choice of the number of supports;
- precise occlusal correction;
- use of diagnostic models and articulators;
- regular monitoring after fixation of the prosthesis.

4. Conclusion

The biomechanics of fixed prosthetics is a key area of orthopedic dentistry, determining the functional success of orthopedic treatment. Proper distribution of chewing loads, proper design of the structure, and consideration of the condition of the supporting teeth ensure the longevity of the prosthesis and prevent the development of periodontal and dental complications.

Lecture Topic No. 4. Features of preparation of periodontal patient.

1. The purpose of the lecture

To study the specifics of preparing patients with periodontal disease for orthopedic treatment, the stages of complex therapy, the principles of periodontal stabilization, and the conditions necessary for successful prosthetics.

2. The issues under consideration



- the concept of a periodontal patient;
- the influence of periodontal diseases on orthopedic treatment;
- stages of patient preparation;
- professional oral hygiene;
- anti-inflammatory therapy;
- dental splinting;
- occlusion correction;
- criteria for patient readiness for prosthetics;
- prevention of complications.

3. Key points of the lecture

3.1. The concept of a periodontal patient

A periodontal patient is a patient with periodontal tissue diseases (gingivitis, periodontitis, periodontosis), accompanied by inflammation, destruction of the dental ligament apparatus, bone resorption and loss of tooth stability.

Such patients require a special approach, since orthopedic treatment without preliminary preparation can lead to deterioration of the condition and tooth loss.

3.2. The impact of periodontal diseases on prosthetics

In case of periodontal pathology the following is observed:

- tooth mobility;
- decreased height of the alveolar bone;
- occlusion disorders;
- increased tooth sensitivity;
- tendency to inflammatory processes.

These factors significantly limit the choice of orthopedic structures and require preliminary stabilization of the condition.

3.3. Stages of preparation of a periodontal patient

Preparation includes several successive stages:

1. Diagnostic stage
2. Therapeutic (conservative) stage
3. Surgical stage (if necessary)
4. Orthopedic stage

An integrated approach ensures maximum treatment effectiveness.

3.4. Diagnostic stage

At this stage the following is carried out:



• collecting anamnesis; • clinical examination; • determination of the degree of tooth mobility; • assessment of the depth of periodontal pockets; • x-ray examination (assessment of bone tissue); • determination of hygiene and inflammation indices.

Based on this data, an individual treatment plan is drawn up.

3.5. Professional oral hygiene

It is a mandatory stage of preparation and includes:

• removal of plaque; • removal of supra- and subgingival tartar; • polishing of teeth; • teaching the patient personal hygiene.

Hygiene reduces the bacterial load and creates conditions for tissue healing.

3.6. Anti-inflammatory therapy

Aimed at eliminating inflammation in periodontal tissues:

• antiseptic treatments (chlorhexidine, miramistin); • use of anti-inflammatory gels; • if necessary, antibiotic therapy; • physiotherapeutic methods.

The goal is to put the disease into remission.

3.7. Dental splinting

If teeth are mobile, they are stabilized:

• temporary splinting (for the period of treatment); • permanent splinting (as an element of an orthopedic structure).

Splinting distributes the load between the teeth and reduces their mobility.

3.8. Occlusion correction

Malocclusion and premature contacts increase periodontal trauma.

Conducted:



- grinding of teeth;
- elimination of supercontacts;
- restoration of correct occlusal relationships.

This reduces congestion and improves the treatment prognosis.

3.9. Surgical preparation

In case of significant changes, surgical methods are used:

- curettage of periodontal pockets;
- flap operations;
- gingivoplasty;
- bone plastic surgery.

Surgical treatment is aimed at eliminating deep pockets and restoring tissue.

3.10. Criteria for readiness for orthopedic treatment

A patient is considered prepared if he/she has:

- absence of active inflammation;
- stable periodontal condition;
- satisfactory oral hygiene;
- reduction or absence of tooth mobility;
- normalized occlusion.

Only under these conditions is it possible to perform prosthetics.

3.11. Features of the selection of orthopedic structures

For periodontal patients, preference is given to:

- splinting structures;
- clasp dentures with load distribution;
- bridge dentures with an increased number of supports;
- structures with minimal tissue trauma.

It is not recommended to create excessive load on individual teeth.

3.12. Prevention of complications

To prevent relapses it is necessary:

- regular examinations (once every 3–6 months);
- maintenance hygiene;
- occlusion control;
- patient compliance with doctor's recommendations;
- timely correction of prostheses.



4. Conclusion

Preparing a periodontal patient is a mandatory and crucial stage of orthopedic treatment. Only a comprehensive approach, including oral hygiene, inflammation management, dental stabilization, and occlusion normalization, can achieve successful and long-lasting prosthetic results. Ignoring these principles leads to the rapid development of complications and decreased treatment effectiveness.

Lecture Topic #5. Prevention of overload of supporting teeth.

1. The purpose of the lecture

To study the causes of overload of supporting teeth during orthopedic treatment, the mechanisms of its development, clinical manifestations, as well as the main methods of prevention and correction to ensure the durability of orthopedic structures.

2. The issues under consideration

- concept of overload of supporting teeth;
- causes of overload during orthopedic treatment;
- biomechanical features of load distribution;
- risk factors of overload;
- clinical manifestations of overload;
- the role of occlusion in the development of overload;
- prevention of overload of supporting teeth;
- choice of orthopedic structures;
- control and observation after prosthetics.

3. Key points of the lecture

3.1. The concept of overloading of supporting teeth

Overload of supporting teeth is a pathological condition that occurs when there is excessive functional or non-physiological impact of chewing forces on the teeth used as support for orthopedic structures.

It leads to disruption of periodontal function, decreased tooth stability and the development of complications.

3.2. Causes of overload



The main reasons are:

- incorrect planning of the orthopedic structure;
- insufficient number of supporting teeth;
- excessive length of the bridge span;
- occlusion disorder;
- overbite;
- uneven distribution of chewing load;
- periodontal weakness;
- parafunctions (bruxism, clenching of teeth).

3.3. Biomechanical bases of overload

Normally, the chewing load is directed along the tooth axis. When the force deviates from the axis, the following occurs:

- tilting loads;
- shear forces;
- torques.

These forces are the most dangerous for the periodontium and lead to its damage.

Long bridges, where the leverage effect occurs, are particularly unfavorable.

3.4 Risk factors

Factors that increase the risk of overload:

- periodontal disease;
- shortened or curved tooth roots;
- decreased height of the alveolar bone;
- malocclusion;
- lack of antagonists;
- age-related changes;
- poor quality prosthetics.

3.5. Clinical manifestations of overload

Overload of supporting teeth is manifested by:

- tooth mobility;
- pain when biting;
- gum inflammation;
- deepening of periodontal pockets;
- gum recession;
- bone tissue resorption;
- breakage or de-cementation of the prosthesis.

3.6 The Role of Occlusion

Occlusion plays a key role in preventing overload.

Occlusion disorders lead to:



- premature contacts;
- uneven distribution of load;
- local overload of individual teeth.

Correct occlusion ensures uniform distribution of chewing forces and reduces the risk of complications.

3.7. Basic principles of prevention

Overload prevention includes:

- careful planning of orthopedic treatment;
- taking into account the biomechanics of the dental system;
- correct choice of prosthesis design;
- increasing the number of supports if necessary;
- reducing the length of the span of the bridge prosthesis;
- uniform distribution of the load;
- restoration of the anatomical shape of the teeth.

3.8. Selection of orthopedic structures

In case of risk of overload, preference is given to:

- structures with multiple supports;
- splinting prostheses;
- clasp prostheses with load distribution;
- implants (if possible).

Should be avoided:

- long bridge prostheses;
- cantilever structures;
- excessive load on one tooth.

3.9. Preparation of supporting teeth

Before prosthetics it is necessary:

- treat periodontal diseases;
- strengthen loose teeth (splinting);
- assess the crown/root ratio;
- eliminate inflammatory processes.

Only functionally complete teeth can serve as a reliable support.

3.10. Occlusion correction

To prevent overload, carry out:

- grinding of premature contacts;
- restoration of correct bite;
- creation of multiple occlusal contacts;
- occlusion control after fixation of the prosthesis.



3.11. The role of temporary structures

Temporary dentures allow:

- adapt the patient to the load;
- assess the correct distribution of chewing forces;
- identify possible errors before permanent prosthetics.

3.12. Outpatient observation

After prosthetics it is necessary:

- regular patient monitoring;
- monitoring the condition of supporting teeth;
- assessment of occlusion;
- professional oral hygiene.

Early detection of overload helps prevent complications.

4. Conclusion

Preventing overload on supporting teeth is a crucial condition for successful orthopedic treatment. Rational design planning, consideration of biomechanical principles, proper occlusion, and regular patient monitoring can significantly increase the longevity of prostheses and maintain periodontal health.

Lecture Topic #6. Methods of dental splinting for periodontal diseases

1. The purpose of the lecture

To study the indications, types and methods of dental splinting for periodontal diseases, their biomechanical rationale, clinical features of application and significance in complex orthopedic treatment.

2. The issues under consideration

- concept of dental splinting;
- goals and objectives of splinting;
- indications and contraindications;
- classification of splinting methods;
- temporary and permanent splinting;
- fixed and removable splints;
- modern materials for splinting;
- biomechanical principles;
- complications and their prevention.

3. Key points of the lecture

3.1. The concept of dental splinting



Splinting is a method of orthopedic treatment aimed at uniting a group of teeth into a single functional system in order to reduce their mobility and redistribute the chewing load.

In periodontal diseases, splinting is an important part of complex treatment, allowing teeth to be stabilized and the prognosis to be improved.

3.2. Objectives of splinting

Main objectives:

- reduction of tooth mobility;
- uniform distribution of chewing load;
- creation of a functional block of several teeth;
- prevention of further destruction of the periodontium;
- improvement of conditions for tissue regeneration;
- increasing the effectiveness of orthopedic treatment.

3.3. Indications for splinting

Splinting is indicated for:

- tooth mobility of I–III degree;
- generalized periodontitis;
- traumatic occlusion;
- after periodontal treatment;
- preparation for prosthetics;
- defects of dental arches with weakened supports.

3.4. Contraindications

- acute inflammatory processes;
- poor oral hygiene;
- severe tooth decay;
- inability to include a tooth in a splint;
- severe general condition of the patient.

3.5. Classification of splinting methods

By duration:

- temporary splinting;
- permanent splinting.

By design:

- non-removable tires;
- removable tires.

Based on the material:



- metal;• fiberglass;• composite;• combined.

3.6. Temporary splinting

It is used at the treatment stage and is aimed at temporary stabilization of teeth.

Methods:

- ligature splinting;• use of wire and composite;• temporary plastic structures.

Advantages:

- ease of implementation; • possibility of correction; • minimal invasiveness.

Flaws:

- insufficient strength;• limited service life.

3.7. Permanent splinting

It is used after periodontal stabilization.

Types:

- splinting crowns; • bridge prostheses; • adhesive splints; • clasp dentures with splinting elements.

Provides long-lasting fixation and reliable load distribution.

3.8. Non-removable tires

These include:

- fiberglass splints;• composite splints;• metal splints;• orthopedic structures (crowns, bridges).

Advantages:

- high aesthetics;• good fixation;• comfort for the patient.

Flaws:



- complexity of hygiene; • need for precise execution.

3.9. Removable tires

They are used for significant defects in the dental arches.

Types:

- plate dentures with splinting elements; • clasp dentures.

Advantages:

- possibility of hygienic treatment; • uniform distribution of the load.

Flaws:

- adaptation period; • less stability compared to fixed structures.

3.10. Modern materials

The most widely used are:

- fiberglass tapes; • composite materials; • metal alloys; • adhesive systems.

Fiberglass has high strength and aesthetics, making it the method of choice in modern practice.

3.11. Biomechanical principles of splinting

Splinting is based on the following principles:

- combining teeth with different degrees of mobility; • redistribution of the load on more stable teeth; • reducing the amplitude of movement of each tooth; • creation of a single functional block.

The more teeth included in the splint, the more effectively the load is distributed.

3.12. Complications

Possible complications:



- poor hygiene and development of caries;
- gum inflammation;
- breakdown of the structure;
- de-cementation;
- overload of individual teeth.

3.13. Prevention of complications

To prevent complications it is necessary:

- careful observance of hygiene;
- regular examinations;
- correct choice of design;
- precise execution of splinting technique;
- occlusion control.

4. Conclusion

Dental splinting is an effective method for stabilizing the dental system in patients with periodontal disease. The correct choice of splint method and design, consideration of biomechanical principles, and a comprehensive approach to treatment can significantly improve the prognosis and preserve the patient's teeth.

Lecture Topic #7. Periodontal indications for orthopedic treatment.

1. The purpose of the lecture

To study the indications for orthopedic treatment in patients with periodontal diseases, determine the criteria for patient selection, and the features of planning and selecting orthopedic structures taking into account the condition of the periodontium.

2. The issues under consideration

- the relationship between periodontology and orthopedic dentistry;
- the impact of periodontal diseases on the dental system;
- the main periodontal indications for orthopedic treatment;
- criteria for assessing the condition of the periodontium;
- features of treatment planning;
- the choice of orthopedic structures;
- the role of splinting;
- prevention of complications.

3. Key points of the lecture

3.1. The relationship between periodontology and orthopedic dentistry



Periodontology and orthopedic dentistry are closely interrelated, since the condition of periodontal tissues directly affects the possibility and effectiveness of prosthetics.

Orthopedic treatment can perform not only a restorative but also a therapeutic function, stabilizing the dental system in periodontal diseases.

3.2. Impact of periodontal diseases

In case of periodontal pathology the following is observed:

- destruction of the ligamentous apparatus of the tooth;
- resorption of the alveolar bone;
- tooth mobility;
- change in the position of the teeth;
- occlusion disorders.

These changes create functional and aesthetic disturbances that require orthopedic correction.

3.3. Main indications for orthopedic treatment

Periodontal indications include:

- tooth mobility of I–III degree;
- traumatic occlusion;
- deformation of dental arches due to tooth migration;
- defects of dental arches with weakened periodontium;
- decrease in the height of the lower part of the face;
- increased abrasion of teeth;
- need for dental splinting;
- preparation for complex treatment.

3.4. Tooth mobility

Tooth mobility is one of the key indications.

Orthopedic treatment is aimed at:

- stabilization of teeth (splinting);
- redistribution of the load;
- reduction of periodontal trauma.

3.5. Traumatic occlusion

Traumatic occlusion occurs when chewing forces are not distributed correctly.

It manifests itself:



- overload of individual teeth;
- pain when biting;
- accelerated destruction of the periodontium.

Orthopedic treatment includes correction of occlusion and restoration of correct contacts.

3.6. Deformations of the dental arches

In periodontal diseases the following are often observed:

- fan-shaped divergence of teeth;
- tilts and rotations;
- formation of diastemas and tremas.

Orthopedic treatment allows:

- restore the shape of the teeth;
- normalize chewing function;
- improve aesthetics.

3.7. Defects of dental arches

Tooth loss due to periodontitis leads to redistribution of the load and overload of the remaining teeth.

Shown:

- replacement of defects with prostheses;
- use of structures that evenly distribute the load.

3.8. Increased tooth wear

Wear may be increased by periodontal disease.

Orthopedic treatment is aimed at:

- restoration of the anatomical shape of teeth;
- normalization of occlusion;
- protection of hard dental tissues.

3.9. Criteria for assessing the condition of the periodontium

Before starting treatment, evaluate:



- depth of periodontal pockets; • degree of tooth mobility; • level of bone tissue; • presence of inflammation; • hygienic condition of the oral cavity.

Only when the process has stabilized can prosthetics be performed.

3.10. Features of treatment planning

Planning includes:

- preliminary periodontal treatment; • elimination of inflammation; • splinting of teeth; • correction of occlusion; • selection of the optimal design of the prosthesis.

Treatment should be comprehensive and step-by-step.

3.11. Selection of orthopedic structures

For patients with periodontal disease, preference is given to:

- splinting structures; • clasp dentures; • bridge dentures with an increased number of supports; • adhesive systems.

Should be avoided:

- overload of individual teeth; • long cantilever dentures.

3.12. The role of splinting

Splinting is an important element of orthopedic treatment:

- reduces tooth mobility; • unites teeth into a single block; • improves load distribution.

3.13. Prevention of complications

To prevent complications it is necessary:

- regular monitoring; • maintenance therapy of periodontal disease; • hygiene control; • timely correction of dentures; • elimination of occlusal disorders.

4. Conclusion



Periodontal indications play a crucial role in determining orthopedic treatment strategies. A comprehensive approach, including preliminary preparation, proper design selection, and consideration of biomechanical principles, allows for periodontal stabilization and long-term functional results.

Lecture Topic #8. Orthopedic rehabilitation for increased tooth wear.

1. The purpose of the lecture

To study the causes and mechanisms of increased tooth wear, clinical manifestations, diagnostic methods, and the basic principles of orthopedic rehabilitation with restoration of the function and aesthetics of the dental system.

2. The issues under consideration

- concept and classification of increased tooth wear;
- etiology and pathogenesis;
- clinical manifestations;
- diagnostics;
- influence on occlusion and TMJ;
- principles of orthopedic treatment;
- restoration of bite height;
- choice of orthopedic structures;
- stages of rehabilitation;
- prevention of complications.

3. Key points of the lecture

3.1. The concept of increased tooth wear

Increased abrasion is a pathological process of accelerated loss of hard dental tissues (enamel and dentin), exceeding physiological norms and leading to impaired function and aesthetics.

Normally, wear occurs slowly and is compensated for by adaptive mechanisms. In pathological cases, these mechanisms fail.

3.2. Classification of abrasion

By origin:

- physiological;
- pathological.

By depth of damage:



- I degree – abrasion of enamel;
- II degree – abrasion of enamel and partially dentin;
- III degree – significant destruction of the crown of the tooth.

By localization:

- generalized;
- localized.

3.3. Etiology

Main reasons:

- bruxism;
- incorrect occlusion;
- defects in the dental arches;
- increased chewing loads;
- occupational hazards;
- periodontal disease;
- incorrect prosthetics.

3.4 Pathogenesis

Erasability is accompanied by:

- reduction in the height of the crowns of the teeth;
- reduction in the interalveolar height;
- changes in occlusal relationships;
- overload of individual teeth;
- involvement of the temporomandibular joint.

3.5. Clinical manifestations

Main symptoms:

- shortened crowns of teeth;
- smoothing of tubercles;
- increased sensitivity of teeth;
- pain when chewing;
- decrease in the height of the lower part of the face;
- aesthetic disorders;
- TMJ dysfunction.

3.6. Diagnostics

Diagnostics includes:

- clinical examination;
- occlusion analysis;
- functional tests;
- x-ray examination;
- diagnostic models;
- analysis in the articulator.

The degree of wear and tear and the need for bite restoration are determined.

3.7. Impact on occlusion and TMJ



In case of severe abrasion:

- the bite height decreases;
- a distal displacement of the lower jaw occurs;
- pathological contacts appear;
- TMJ dysfunction develops.

This requires a comprehensive approach to treatment.

3.8. Principles of orthopedic rehabilitation

Basic principles:

- restoration of the anatomical shape of the teeth;
- normalization of occlusion;
- restoration of the bite height;
- uniform distribution of the load;
- preservation of the remaining tooth tissue.

Treatment should be step-by-step and individualized.

3.9. Restoring the bite height

The key stage of treatment.

Conducted:

- using temporary structures;
- gradually, for patient adaptation;
- under control of TMJ function.

A sharp increase in bite height can lead to complications.

3.10. Selection of orthopedic structures

Depending on the clinical situation, the following are used:

- inlays and onlays;
- crowns (metal-ceramic, ceramic);
- bridges;
- veneers (for mild cases);
- removable structures (for extensive defects).

In case of generalized abrasion, complex prosthetics are often required.

3.11. Stages of orthopedic rehabilitation

1. Diagnostic stage
2. Preparatory stage (treatment of caries, periodontal disease)



3. Determination and modeling of bite height
4. Temporary prosthetics
5. Permanent prosthetics
6. Control and correction

3.12. The role of temporary structures

Temporary dentures allow:

- check the correctness of the bite height;
- evaluate the chewing function;
- adapt the patient;
- identify possible complications.

3.13. Complications

Possible complications:

- pain in the TMJ;
- impaired chewing function;
- overload of teeth;
- destruction of dentures;
- relapse of wear.

3.14. Prevention

For prevention it is necessary:

- elimination of causes (bruxism, occlusal disorders);
- use of protective mouth guards;
- regular examinations;
- monitoring the condition of dentures;
- maintaining oral hygiene.

4. Conclusion

Orthopedic rehabilitation for increased tooth wear is a complex, multi-stage process that requires consideration of functional, aesthetic, and biomechanical aspects. Correct restoration of the bite height, selection of appropriate appliances, and a comprehensive treatment approach help restore dental function and improve the patient's quality of life.

Lecture Topic #9. Periodontal indications for orthopedic treatment.

1. The purpose of the lecture



To study the main indications for orthopedic treatment in patients with periodontal diseases, determine the criteria for patient selection, principles of treatment planning, and the specifics of choosing orthopedic structures taking into account the condition of the periodontal tissues.

2. The issues under consideration

- the relationship between periodontology and orthopedic dentistry;
- the impact of periodontal diseases on the dental system;
- the main periodontal indications;
- clinical forms of periodontal damage;
- criteria for assessing the condition of the periodontium;
- features of treatment planning;
- the choice of orthopedic structures;
- the role of splinting;
- prevention of complications.

3. Key points of the lecture

3.1. The relationship between periodontology and orthopedic dentistry

Periodontal disease has a significant impact on the health of the dental system and the feasibility of orthopedic treatment. Orthodontic treatments, in turn, can either improve periodontal health or worsen it if improperly planned.

In this case, orthopedic treatment performs not only a restorative, but also a therapeutic and preventive function.

3.2. The impact of periodontal diseases on the dental system

In case of periodontal pathology the following occurs:

- destruction of the periodontal ligament;
- resorption of the alveolar bone;
- tooth mobility;
- displacement of teeth;
- formation of diastemas and tremas;
- occlusion disorders.

These changes lead to functional and aesthetic disturbances.

3.3. Main periodontal indications

Orthopedic treatment is used in cases of:

- tooth mobility of I–III degree;
- traumatic occlusion;
- deformations of dental arches;
- defects of dental arches against the background of periodontitis;
-



decrease in bite height; • increased abrasion of teeth; • need for dental splinting; • preparation for complex rehabilitation.

3.4. Tooth mobility

Mobility is an important indication for orthopedic intervention.

Main tasks:

- stabilization of teeth; • reduction of the load on the periodontium; • prevention of further tissue destruction.

3.5. Traumatic occlusion

Incorrect distribution of chewing load causes overload of individual teeth.

Manifestations:

- pain when chewing; • increased mobility; • accelerated destruction of the periodontium.

Orthopedic treatment is aimed at eliminating traumatic factors.

3.6. Deformations of the dental arches

In periodontal diseases the following are often observed:

- tilt of teeth; • fan-shaped divergence; • rotation; • formation of spaces between teeth.

Treatment is aimed at restoring the anatomical form and function of the dentition.

3.7. Defects of dental arches

Tooth loss leads to:

- redistribution of the load; • overload of the remaining teeth; • deterioration of the periodontal condition.

Defect replacement is shown taking into account biomechanics.



3.8. Increased tooth wear

In periodontal diseases, abrasion increases and is accompanied by:

- reduction in bite height;
- disruption of chewing function;
- change in aesthetics.

Orthopedic correction is required.

3.9. Criteria for assessing the condition of the periodontium

Before starting treatment, it is necessary to evaluate:

- depth of periodontal pockets;
- degree of tooth mobility;
- level of bone tissue;
- presence of inflammation;
- hygienic condition of the oral cavity.

Treatment is possible only after the inflammatory process has stabilized.

3.10. Features of treatment planning

Planning should include:

- preliminary periodontal treatment;
- elimination of inflammation;
- splinting of teeth;
- correction of occlusion;
- selection of a rational design of the prosthesis.

An integrated approach is essential.

3.11. Selection of orthopedic structures

For patients with periodontal disease, preference is given to:

- splinting structures;
- clasp dentures;
- bridge dentures with an increased number of supports;
- adhesive structures.

Should be avoided:

- overload of individual teeth;
- long bridge prostheses;
- cantilever structures.

3.12. The role of splinting

Splinting:



- reduces tooth mobility;
- unites them into a single functional block;
- redistributes the chewing load;
- improves the treatment prognosis.

3.13. Prevention of complications

To prevent complications it is necessary:

- regular dispensary observation;
- maintenance therapy of periodontium;
- hygiene control;
- occlusion correction;
- timely replacement or correction of dentures.

4. Conclusion

Periodontal indications play a crucial role in planning orthopedic treatment. Only with a comprehensive approach, including oral hygiene, periodontal stabilization, and a rational choice of orthopedic appliance, can long-lasting and sustainable treatment results be achieved.

Lecture plan for the 9th semester

Lecture Topic No. 1. Partial dentures: designs, indications, selection.

1. The purpose of the lecture

To study the main types of partially removable dentures, their design features, indications and contraindications for use, principles of design selection depending on the clinical situation, as well as the biomechanical and functional aspects of their use in orthopedic dentistry.

2. The issues under consideration

- definition and place of partially removable dentures in orthopedic treatment;
- classification of partially removable dentures;
- design of plate and clasp dentures;
- fixation elements (clasps, attachments);
- indications and contraindications for use;
- choice of denture design;
- advantages and disadvantages of different types of dentures;
- patient adaptation and care of prostheses;
- possible complications and their prevention.

3. Key points of the lecture



3.1. General characteristics of partial dentures

Partial dentures are used when teeth are partially missing and are removable by the patient. They restore chewing function and aesthetics and prevent further deformities of the dental system.

Partial dentures occupy a middle ground between fixed dentures and complete dentures. They are widely used when bridges or implants are not feasible.

3.2. Classification of partial dentures

By design: • plate dentures; • clasp dentures;

By fixation method: • clasp; • lock (on attachments); • telescopic systems;

By material: • acrylic; • nylon; • combined (metal + plastic).

3.3. Plate partial removable dentures

Plate dentures consist of: • a base (usually acrylic); • artificial teeth; • retaining elements (clasps).

Advantages: • ease of manufacture; • availability; • possibility of use in cases of extensive defects.

Disadvantages: • massiveness of the structure; • long adaptation; • uneven distribution of chewing load; • possible atrophy of the alveolar process.

3.4. Clasp dentures

Clasp dentures have a metal frame (clasp), which ensures a more even distribution of the load.

Main elements: • arch (clasp); • saddle parts; • clasps or lock fastenings; • supporting elements (occlusal pads).

Advantages: • compactness; • high strength; • physiological distribution of load; • less trauma to the mucous membrane.

Disadvantages: • more complex manufacturing; • high cost; • need to prepare supporting teeth (in some cases).



3.5. Clasp system

Clasps are fixation elements that enclose the tooth.

Functions: • retention of the prosthesis;
• stabilization; • load distribution.

Types of clasps: • support-retaining; • retaining; • combined.

Disadvantages of clasps: • possible overload of supporting teeth; • aesthetic defect (especially in the frontal zone).

3.6. Attachments and locking systems

Attachments are hidden locking fasteners that provide aesthetic fixation of the prosthesis.

Advantages: • high aesthetics; • reliable fixation; • patient comfort.

Disadvantages: • complex design; • high cost; • need for high manufacturing precision.

3.7. Indications for use

Partially removable dentures are indicated for: • partial edentia; • extensive defects of the dental arches; • absence of distal supports; • contraindications to implantation; • periodontal diseases (as part of complex treatment); • temporary prosthetics.

3.8. Contraindications

• severe diseases of the mucous membrane; • pronounced gag reflex; • allergy to materials; • extremely poor oral hygiene; • mental disorders (inability to use a prosthesis).

3.9. Selecting the prosthesis design

The choice depends on: • the size and location of the defect; • the condition of the supporting teeth; • the condition of the periodontium; • the bite; • the age of the patient; • aesthetic requirements; • the financial capabilities of the patient.



For minor defects, preference is given to clasp dentures or fixed structures. For extensive defects, plate dentures are used.

3.10. Biomechanics of partial dentures

The main task is to evenly distribute the chewing load between the teeth and the mucous membrane.

If the design is incorrect, the following is possible: • overload of the supporting teeth; • bone tissue atrophy; • injury to the mucous membrane.

3.11. Patient adaptation

The adaptation period includes: • getting used to the foreign body; • restoration of chewing function; • normalization of speech.

Recommendations: • gradually increase the wearing time; • soft food in the first days; • maintain hygiene; • regular visits to the doctor.

3.12. Caring for dentures

• daily cleaning; • use of special products; • storage in dry or wet conditions (as recommended); • regular professional correction.

3.13. Complications

• pressure sores of the mucous membrane; • inflammation (stomatitis); • loosening of supporting teeth; • breakage of the prosthesis; • loss of fixation.

Prevention: • correct design; • precise manufacturing; • regular monitoring; • patient hygiene training.

4. Conclusion

Partial dentures are an important method of orthopedic treatment for partial edentulism. The correct choice of design, taking into account the clinical situation and individual patient characteristics, ensures restoration of chewing function, improved aesthetics, and an enhanced quality of life. Modern technologies allow for the creation of more comfortable, aesthetic, and functional dentures, making them an integral part of comprehensive dental rehabilitation.



Lecture Topic No. 2. Partial dentures: designs, indications, selection.

1. The purpose of the lecture

To study the types of partially removable dentures, their design features, selection principles, indications and contraindications for use, as well as clinical aspects of use in orthopedic dentistry.

2. The issues under consideration

- definition of partially removable dentures and their place in orthopedics;
- classification of partially removable dentures;
- structural elements of dentures;
- features of plate and clasp dentures;
- fixation systems (clasps, attachments);
- indications and contraindications;
- criteria for choosing a design;
- biomechanics of partially removable dentures;
- complications and prevention.

3. Key points of the lecture

3.1 General characteristics

Partial dentures are used in cases of partial tooth loss and are structures that the patient can remove and install independently. They are designed to restore chewing function, speech, aesthetics, and prevent further deformities of the dental system.

This type of prosthetics is used in cases where the use of fixed structures or implantation is impossible or impractical.

3.2. Classification of partial dentures

By design: • plate; • clasp;

By fixation method: • clasp; • lock (attachment); • telescopic;

By material: • acrylic; • nylon; • combined (metal frame + plastic).

3.3. Structural elements

The main elements of a partially removable denture: • base - the basis of the denture, adjacent to the mucous membrane; • artificial teeth; • retaining elements



(clasps or locks); • supporting elements (occlusal pads); • connecting elements (arches, jumpers).

3.4 Plate prostheses

Plate dentures have an acrylic base in which artificial teeth are fixed.

Advantages: • ease of manufacture; • availability; • possibility of restoring large defects.

Disadvantages: • significant volume; • uneven distribution of the load; • deterioration of diction; • longer adaptation period.

3.5. Clasp dentures

Clasp dentures have a metal frame that provides rigidity and uniform load distribution.

Main elements: • arch (clasp); • saddle sections; • clasps or attachments; • supporting elements.

Advantages: • compactness; • high strength; • physiological load distribution; • better patient adaptation.

Disadvantages: • complexity of manufacture; • high cost; • need to prepare supporting teeth.

3.6. Clasp fixation

Clasps are metal elements that enclose the tooth.

Functions: • fixation of the prosthesis; • stabilization; • partial load distribution.

Disadvantages: • aesthetic problems; • risk of overloading the supporting teeth.

3.7. Attachments (locking systems)

Attachments provide hidden fixation of the prosthesis.

Advantages: • high aesthetics; • reliable fixation; • comfort when wearing.



Disadvantages: • high cost; • complexity of manufacturing; • need for high precision.

3.8. Indications for use

• partial adentia; • extended defects of the dental arches; • absence of distal supports; • impossibility of fixed prosthetics; • periodontal diseases; • temporary prosthetics.

3.9. Contraindications

• acute inflammatory diseases of the oral cavity; • severe allergic reactions to materials; • severe somatic diseases; • poor oral hygiene; • mental disorders.

3.10. Selecting a design

The choice of prosthesis depends on: • the size and location of the defect; • the condition of the supporting teeth; • the condition of the periodontium; • occlusion; • the age of the patient; • aesthetic requirements; • financial capabilities.

For limited defects, clasp structures are preferable. For extensive defects, plate prostheses are preferable.

3.11. Biomechanics

Partial dentures should ensure: • uniform distribution of chewing load; • preservation of supporting teeth; • minimal pressure on the mucous membrane.

Errors in design can lead to: • overload of teeth; • bone tissue atrophy; • inflammatory processes.

3.12. Patient adaptation

Adaptation includes: • getting used to the prosthesis; • restoration of chewing function; • improvement of speech.

Recommended: • gradual increase in wearing time; • soft diet at the beginning; • regular visits to the doctor.

3.13. Caring for dentures



- daily cleaning of the prosthesis;
- use of special products;
- storage according to recommendations;
- regular correction by a doctor.

3.14. Complications

- trauma to the mucous membrane;
- inflammatory processes;
- breakage of the prosthesis;
- loosening of the supporting teeth;
- violation of fixation.

Prevention: • proper treatment planning;

- precise manufacturing;
- hygiene;
- regular patient monitoring.

4. Conclusion

Partial dentures are an important method for restoring dental arches in cases of partial edentulism. Proper design, taking into account the patient's anatomical and functional characteristics and individual needs, allows for highly effective treatment, restoration of chewing function, and improved quality of life.

Lecture Topic No. 3. Clasp dentures: design and biomechanics.

1. The purpose of the lecture

To study the design principles of clasp dentures, their structural elements, as well as the basics of biomechanics that ensure proper distribution of chewing load and the durability of orthopedic treatment.

2. The issues under consideration

- the concept of a clasp denture and its features;
- basic design elements;
- principles of designing clasp dentures;
- types of clasp systems and supporting elements;
- distribution of chewing load;
- biomechanics of clasp dentures;
- stabilization and fixation of the denture;
- design errors and their consequences;
- prevention of complications.

3. Key points of the lecture

3.1. General characteristics of clasp dentures



Clasp dentures are a type of partially removable denture, the basis of which is a metal frame (clasp), which ensures the strength of the structure and uniform distribution of the chewing load.

A distinctive feature is the combination of support on the teeth and mucous membrane, which makes them more physiological compared to plate dentures.

3.2. Basic design elements

A clasp denture includes: • an arch (clasp); • saddle sections (areas for placing artificial teeth); • supporting elements (occlusal pads); • retaining elements (clasps or attachments); • connecting elements; • base (plastic part).

Each element performs a strictly defined function and must be properly designed.

3.3 Design principles

Designing a clasp denture is a key stage of treatment, which is carried out on a diagnostic model.

Basic principles: • maximum use of supporting teeth; • uniform distribution of the load; • ensuring stability of the prosthesis; • minimal tissue trauma; • maintaining oral hygiene; • taking into account the anatomical features of the patient.

Design includes analysis of the model, determination of the prosthesis insertion line and planning of the location of all structural elements.

3.4. Prosthesis insertion line

The insertion line is the direction in which the prosthesis is inserted into the oral cavity.

It is determined using a parallelometer and affects: • the location of the clasps; • the degree of fixation; • the stability of the structure.

Incorrect choice of injection line leads to decreased fixation and tissue trauma.

3.5. Clasp system

Clasps ensure that the denture is held on the teeth.



Components of the clasp: • shoulder (retention); • body; • occlusal pad; • support part.

Types of clasps: • support-retaining; • retaining; • combined.

Correct placement of clasps ensures the stability of the prosthesis and prevents overloading of the teeth.

3.6. Supporting elements

Occlusal pads transfer the chewing load to the teeth and prevent the prosthesis from sinking into the mucous membrane.

Their functions: • support of the prosthesis; • load distribution; • stabilization.

3.7. Biomechanics of clasp dentures

Biomechanics studies the distribution of forces that occur during chewing.

Basic principles: • uniform distribution of the load between the teeth and the mucous membrane; • prevention of overload of the supporting teeth; • reduction of pressure on soft tissues; • stabilization of the prosthesis during functional movements.

Clasp dentures work as a system of levers, so it is important to consider: • the length of the defect; • the number of supporting teeth; • their periodontal condition.

3.8. Load distribution

The load is transferred: • through the occlusal pads - to the teeth; • through the base - to the mucous membrane.

If the distribution is incorrect, the following occurs: • overload of teeth; • atrophy of bone tissue; • inflammation of the mucous membrane.

3.9. Stabilization and fixation

Fixation is holding the prosthesis at rest. Stabilization is the stability of the prosthesis during chewing.



Provided by: • clasps; • shape of the base; • correct placement of supporting elements; • precision of manufacture.

3.10. Design errors

Main mistakes: • incorrect choice of supporting teeth; • insufficient number of supports; • incorrect placement of clasps; • lack of occlusal pads; • ignoring biomechanical principles.

Consequences: • loosening of teeth; • breakage of the prosthesis; • injury to the mucous membrane; • decreased effectiveness of treatment.

3.11. Prevention of complications

• thorough examination of the patient; • correct planning of the structure; • use of a parallelometer; • taking into account the condition of the periodontium; • regular monitoring after prosthetics.

3.12. Modern trends

Modern orthopedic dentistry uses: • CAD/CAM technologies; • high-precision alloys; • aesthetic locking systems; • combined structures.

This improves the precision, comfort and durability of the prostheses.

4. Conclusion

Clasp dentures are one of the most physiologically sound methods of removable partial dentures. Proper design and consideration of biomechanical principles ensure secure fixation, even load distribution, and durability. Errors at the planning stage can lead to serious complications, so a competent approach to design is the foundation of successful orthopedic treatment.

Lecture Topic No. 4. Complete removable dentures: principles of occlusion restoration.

1. The purpose of the lecture

To study the basic principles of occlusion restoration in complete removable dentures, the features of the formation of occlusal relationships, methods of



registering the central relationship of the jaws and the importance of correct occlusion for the function and stability of dentures.

2. The issues under consideration

- the concept of complete edentia and the features of prosthetics;
- occlusion and its importance in complete removable dentures;
- central relationship of the jaws;
- methods of registering occlusion;
- types of occlusion schemes;
- balanced occlusion;
- factors of denture stability;
- errors in the formation of occlusion;
- patient adaptation to dentures.

3. Key points of the lecture

3.1. General characteristics of complete edentia

Complete edentia is the absence of all teeth on one or both jaws. This is accompanied by significant restructuring of the dental system:

- atrophy of the alveolar processes;
- reduction in the height of the lower face;
- impaired chewing and speech function;
- changes in the functioning of the temporomandibular joint.

Complete removable dentures are aimed at restoring lost functions and aesthetics.

3.2. The concept of occlusion

Occlusion is the relationship between the dental arches when the jaws are closed.

With complete prosthetics, it is necessary to artificially create occlusion that will ensure:

- stability of the prostheses;
- uniform distribution of the load;
- normal chewing function;
- patient comfort.

3.3 Central jaw relation

Central relation is the position of the lower jaw relative to the upper jaw, in which the articular heads occupy a physiologically correct position in the glenoid fossae.

Features:

- does not depend on the presence of teeth;
- is a stable reference point;
- is used as a basis for constructing occlusion.

3.4 Methods for Determining Central Ratio



- anatomical and physiological method;
- functional method;
- graphic methods (using a gnathograph);
- registration using wax bases and occlusal rims.

An important step is determining the bite height (vertical dimension).

3.5. Determining the bite height

Bite height is the distance between the jaws when closed.

It is determined taking into account: • anatomical landmarks of the face; • phonetic tests; • the functional state of the muscles.

Errors in determining the bite height lead to: • disruption of chewing function; • joint pain; • rapid muscle fatigue.

3.6. Occlusal schemes

The main types of occlusion in complete prosthetics: • balanced (bilateral); • linear; • monoplane; • lingualized.

The choice of regimen depends on the clinical situation.

3.7. Balanced occlusion

Balanced occlusion is the simultaneous contact of teeth on both sides during various movements of the lower jaw.

Advantages: • stability of prostheses; • uniform distribution of load; • prevention of displacement of prostheses.

Conditions of formation: • correct positioning of teeth; • taking into account the curves of Spee and Wilson; • use of an articulator.

3.8 Factors influencing occlusion

- anatomy of the alveolar processes;
- condition of the mucous membrane;
- tone of the masticatory muscles;
- features of the TMJ;
- quality of the prosthesis.

3.9. Biomechanics of a complete removable denture



The prosthesis is held in place by: • adhesion; • cohesion; • atmospheric pressure; • muscular balance.

Correct occlusion promotes: • stability of the prosthesis; • reduction of pressure on the mucous membrane; • uniform distribution of the load.

3.10. Errors in occlusion formation

• incorrect determination of the central relationship; • overbite or underbite; • lack of balanced contacts; • incorrect positioning of teeth.

Consequences: • pain in the TMJ; • trauma to the mucous membrane; • instability of the prosthesis; • patient refusal of the prosthesis.

3.11. Patient adaptation

Adaptation to complete removable dentures occurs in several stages: • getting used to the foreign body; • restoration of chewing; • improvement of speech.

Recommendations: • gradually increase the wearing time; • soft food at the beginning; • regular adjustments by a doctor.

3.12. Modern approaches

• use of articulators; • digital modeling of occlusion; • individualization of teeth placement; • use of modern materials.

4. Conclusion

Restoring occlusion in complete removable dentures is a key stage of treatment. Correctly determining the centric relation, vertical dimension, and selecting an occlusal scheme ensures denture stability, patient comfort, and restoration of chewing function. Errors in these stages can lead to serious complications, so careful clinical and laboratory monitoring is essential.

Lecture Topic #5. Features of prosthetics in case of complete edentia.

1. The purpose of the lecture



To study the clinical features of patients with complete edentia, the principles of planning and stages of orthopedic treatment, as well as factors influencing the fixation, stabilization and functional effectiveness of complete removable dentures.

2. The issues under consideration

- the concept of complete edentia and its consequences;
- anatomical and functional changes in the oral cavity;
- features of patient examination;
- stages of prosthetics in case of complete edentia;
- features of fixation and stabilization of prostheses;
- formation of a marginal valve;
- selection of artificial teeth and placement;
- patient adaptation;
- complications and their prevention.

3. Key points of the lecture

3.1. The concept of complete edentia

Complete edentia is the absence of all teeth on one or both jaws. This condition is accompanied by significant functional and anatomical changes in the dental system, requiring a comprehensive orthopedic approach.

Complete edentia is more often observed in older patients and leads to a significant reduction in quality of life.

3.2. Anatomical and functional changes

With complete loss of teeth the following occurs:


- atrophy of the alveolar processes;
- reduction in the height of the lower part of the face;
- change in the relationship of the jaws;
- displacement of the TMJ;
- impairment of chewing, speech and swallowing functions;
- changes in the soft tissues of the denture bed.

3.3. Features of the survey

The examination includes:

- collecting anamnesis (time of tooth loss, reasons);
- assessing the general condition of the patient;
- examining the oral cavity;
- determining the degree of atrophy of the alveolar processes;
- assessing the mucous membrane (compliance, pain sensitivity);
- examining the TMJ;
- determining the interalveolar height.

3.4 Treatment planning

	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"

In case of complete edentia, the most important tasks are: • restoration of chewing function; • restoration of facial aesthetics; • restoration of speech; • ensuring the stability of dentures; • prevention of further tissue atrophy.

3.5. Stages of prosthetics

The main stages: • clinical examination; • obtaining anatomical impressions; • making individual trays; • functional impressions; • determining the central relationship of the jaws; • setting the teeth; • trying on the wax structure; • final production of the prosthesis; • correction and adaptation.

3.6. Features of impressions

In case of complete edentia, the quality of the impressions is of great importance: • the mobility of the mucosa is taken into account; • a functional edge is formed; • the tightness of the prosthetic valve is ensured.

The functional impression determines the fixation of the future prosthesis.

3.7. Fixation of complete dentures

Fixation is ensured by: • adhesion between the mucosa and the base; • cohesion of saliva; • atmospheric pressure; • anatomical retention; • muscular balance.

Of particular importance is the marginal valve, which creates negative pressure.

3.8. Stabilization of prostheses

Stabilization is the stability of the prosthesis during chewing movements.

Provided by: • correct positioning of teeth; • balanced occlusion; • uniform distribution of the load; • precise correspondence of the base to the relief of the mucous membrane.

3.9. Installation of artificial teeth

When placing teeth, the following are taken into account: • aesthetic parameters of the face; • phonetic features; • occlusal relationships; • individual anatomical landmarks.



The choice of shape and color of teeth affects the aesthetic result.

3.10. Patient adaptation

Adaptation to complete dentures occurs in stages: • getting used to the volumetric structure; • restoration of chewing; • normalization of speech; • psychological adaptation.

Recommendations: • gradually increase the wearing time; • soft diet in the first days; • regular visits to the doctor for correction.

3.11. Complications

Possible complications: • chafing of the mucous membrane; • impaired fixation; • decreased bite height; • pain in the TMJ; • speech and chewing disorders.

Prevention: • precise adherence to clinical stages; • correct determination of the central relationship;

• high-quality production of the prosthesis; • regular correction.

3.12. Modern trends

• digital modeling of prostheses; • CAD/CAM technologies; • use of elastic base materials; • individualized placement of teeth.

4. Conclusion

Prosthetic restoration for complete edentulism is a complex, multi-stage process that requires precise clinical and laboratory procedures. Successful treatment depends on proper planning, precise determination of anatomical and functional parameters, and competent patient adaptation. Modern technologies significantly improve the quality of retention, comfort, and functionality of complete removable dentures.

Lecture Topic #6. Anatomical and topographic landmarks for fixing prostheses

1. The purpose of the lecture



To study the main anatomical and topographic landmarks of the oral cavity used in the design and fixation of removable and fixed orthopedic structures, as well as their clinical significance for ensuring the stability and functionality of prostheses.

2. The issues under consideration

- concept of anatomical and topographic landmarks;
- landmarks of the upper jaw;
- landmarks of the lower jaw;
- mucous membrane as a prosthetic bed;
- anatomical formations influencing fixation;
- functional zones of the marginal valve;
- neutral zone;
- the importance of TMJ and occlusion;
- clinical application of landmarks in prosthetics.

3. Key points of the lecture

3.1 General concepts

Anatomical and topographic landmarks are stable anatomical structures and functional zones of the oral cavity that are used in the manufacture and fixation of orthopedic structures.

They allow: • to correctly determine the boundaries of the prosthesis; • to ensure its fixation and stabilization; • to prevent soft tissue injury; • to improve the functional properties of the prosthesis.

3.2. Landmarks of the upper jaw

The main landmarks include: • alveolar process; • incisive papilla; • palatine suture; • transverse palatine folds; • palatine ridge; • maxillary tubercles; • transitional fold.

Meaning: • form the supporting surface of the prosthesis; • determine the boundaries of the base; • influence fixation by creating a marginal valve.

3.3. Landmarks of the lower jaw

Main anatomical structures: • alveolar ridge; • retromolar triangles; • external oblique line;

- internal oblique line;
- sublingual ridges;
- frenulum of the tongue;
- transitional fold.



Features: • the lower jaw has a smaller support area; • fixation of the prosthesis is more complex; • an accurate assessment of the mobility of soft tissues is important.

3.4. The mucous membrane as a prosthetic bed

The mucous membrane plays a key role in the fixation of the prosthesis.

A distinction is made between: • pliable mucosa (favorable for fixation); • dense and slightly pliable (less favorable); • atrophic mucosa (problematic).

Significance: • distribution of chewing load; • pressure cushioning; • participation in creating the tightness of the prosthesis.

3.5. Transitional fold

The transitional fold is the border between the mobile and immobile mucosa.

Meaning: • defines the boundaries of the prosthesis; • provides a marginal valve; • participates in fixing the prosthesis by creating negative pressure.

3.6. Marginal valve

The marginal valve is the area of tight adhesion of the edge of the prosthesis to the mucous membrane.

Functions: • creating a vacuum;
• holding the prosthesis; • preventing air from getting under the base.

It is formed due to: • an accurate impression; • correct modeling of the edge of the prosthesis; • taking into account the mobility of soft tissues.

3.7. Neutral Zone

The neutral zone is the area of balance between the muscles of the tongue and cheeks.

Meaning: • optimal placement of artificial teeth; • increased stability of the prosthesis; • reduced risk of displacement of the structure.

3.8. Retromolar region



It is especially important for the lower jaw: • serves as a support zone; • participates in fixing the prosthesis; • is preserved even with severe atrophy of the alveolar process.

3.9. Temporomandibular joint (TMJ)

TMJ determines: • the position of the lower jaw; • the nature of occlusion; • functional movements.

TMJ disorders can lead to: • instability of prostheses; • pain syndrome; • chewing disorders.

3.10. Functional guidelines

- tongue movements; • tone of the lips and cheeks;
- facial muscles; • chewing muscles.

These factors are taken into account when forming the boundaries of the prosthesis.

3.11. Clinical significance of landmarks

Correct use of anatomical and topographic landmarks allows you to: • ensure reliable fixation of the prosthesis; • increase its stability; • reduce the risk of tissue injury; • improve patient adaptation; • increase the service life of the structure.

3.12. Errors in using landmarks

- incorrect definition of the prosthesis boundaries; • ignoring the mobility of the mucosa; • insufficient formation of the marginal valve; • incorrect assessment of the neutral zone.

Consequences: • poor fixation; • chafing of the mucous membrane; • patient discomfort; • functional failure of the prosthesis.

4. Conclusion

Anatomical and topographic landmarks of the oral cavity are the foundation of successful orthopedic treatment. Their correct use ensures precise design of prostheses, their secure fit, and stable functional performance. A thorough



understanding of the anatomy and functional characteristics of the denture bed is essential for high-quality prosthetic restoration.

Lecture Topic #7. Centric occlusion: restoration in cases of edentia.

1. The purpose of the lecture

To study the concept of centric occlusion, its importance in orthopedic dentistry and methods of restoring occlusal relationships in patients with complete edentia to ensure the stability and functional effectiveness of complete removable dentures.

2. The issues under consideration

- the concept of centric occlusion and central relationship of the jaws;
- anatomical and functional foundations of occlusion;
- changes in complete edentia;
- methods for determining the central relationship;
- clinical stages of fixing bite rollers;
- registration of occlusion;
- errors in determining the central occlusion;
- the importance of occlusion for fixing complete dentures.

3. Key points of the lecture

3.1. The concept of centric occlusion

Centric occlusion is the maximum multiple contact of the dental arches with the lower jaw in a central relationship with the articular head located in the most stable and physiologically correct position in the glenoid fossa.

In orthopedic dentistry, the following are also distinguished: • central relationship of the jaws (CRJ) – articular position; • habitual occlusion – an individually formed function in the patient.

3.2 The meaning of central ratio

The central dentition is the basic starting point for: • constructing artificial dental arches; • placing teeth in a prosthesis; • restoring chewing function; • stabilizing the lower jaw; • preventing overload of the TMJ.

3.3. Changes in complete edentia



When teeth are missing: • occlusal contacts disappear; • bite height is lost; • the position of the lower jaw changes; • the function of the chewing muscles is impaired; • atrophy of the alveolar processes occurs.

This leads to the need for artificial restoration of occlusion.

3.4. Determination of the central relation of the jaws

The CSC is the most posterior and superior physiological position of the lower jaw with relaxed muscles.

Methods of determination: • anatomical and physiological method; • functional and physiological method; • instrumental methods (facial arches, articulators); • method of wax bases with bite rollers.

3.5. Clinical stage with bite rollers

Bite rollers are used to: • restore the bite height; • fix the position of the jaws; • determine the central relationship.

Stages:

1. production of bases;
2. modeling of occlusal ridges;
3. determination of the height of the lower third of the face;
4. fixation of the central position of the jaws;
5. bite registration.

3.6. Determining the bite height

A distinction is made between: • physiological height of rest; • occlusal height; • interocclusal space.

Normally, the difference between the height of rest and occlusion is 2–4 mm.

3.7. Registration of central occlusion

After the central denture is established, fixation is carried out: • with wax; • with silicone materials; • with thermoplastic masses.



The goal is to transfer the position of the jaws to the articulator.

3.8. Landmarks for setting occlusion

The following are used: • smile line; • interpupillary line; • nasolabial folds; • midline of the face; • position of the lips at rest.

3.9. The importance of articulators

Articulators allow you to: • reproduce the movements of the lower jaw; • simulate occlusion; • reduce errors in the placement of teeth; • improve the accuracy of prosthetics.

3.10. Errors in determining central occlusion

The most common mistakes: • overestimation or underestimation of the bite height; • incorrect fixation of the bite rollers; • displacement of the lower jaw; • lack of muscle relaxation; • incorrect occlusion registration.

Consequences: • pain in the TMJ; • instability of the prosthesis; • speech and chewing impairment; • rapid muscle fatigue.

3.11. Clinical significance

Correct restoration of central occlusion ensures: • stability of complete removable dentures; • uniform distribution of chewing load; • normalization of TMJ function; • patient comfort; • long service life of the structure.

4. Conclusion

Central occlusion is a key element in successful orthopedic treatment for completely edentulous patients. Accurate determination and recording of the centric jaw relationship ensures proper tooth alignment, denture stability, and restoration of full masticatory function.

Lecture Topic #8. Errors and corrections of removable dentures.

1. The purpose of the lecture



To study the main types of errors that arise during the clinical and laboratory stages of removable denture manufacturing, their causes, clinical manifestations, as well as methods of correction and prevention to ensure functional efficiency and patient adaptation.

2. The issues under consideration

- stages of manufacturing removable dentures and possible errors;
- errors in obtaining impressions;
- errors in determining central occlusion;
- defects in laboratory manufacturing;
- errors in tooth placement;
- errors in fitting the prosthesis;
- violations of fixation and stabilization;
- methods of correction of removable dentures;
- patient adaptation and post-clinical management.

3. Key points of the lecture

3.1 General concepts

Errors in removable dentures are deviations from the anatomical, functional and technological requirements that arise at various stages of orthopedic treatment and lead to a violation of the fixation, stability and function of the prosthesis.

They can be: • clinical; • laboratory; • combined.

3.2. Errors at the stage of obtaining impressions

The most common mistakes: • inaccurate display of the prosthetic bed; • deformation of the impression material; • insufficient expansion of the functional boundaries; • presence of bubbles and tears; • incorrect choice of spoon.

Consequences: • poor fit of the base; • violation of fixation; • trauma to the mucous membrane.

Correction: • re-taking the impression;
• use of functional tests; • individual spoons.

3.3. Errors in determining central occlusion

Manifestations: • overestimation or underestimation of the bite height; • displacement of the lower jaw; • incorrect bite registration.



Consequences: • dysfunction of the TMJ; • discomfort when chewing; • instability of the prosthesis.

Correction: • re-determination of the central relationship; • use of articulators; • control of muscle balance.

3.4 Laboratory errors

They arise during: • plastering of models; • making a base; • setting teeth; • polymerization of plastic.

Errors: • shrinkage of material; • deformation of the base; • inaccurate placement of teeth; • violation of occlusal contacts.

Correction: • re-basing of the prosthesis; • re-positioning of teeth; • laboratory adjustment.

3.5. Errors in teeth placement

Main types: • incorrect occlusal plane; • discrepancy with aesthetic lines; • violation of the neutral zone; • incorrect articulation.

Consequences: • chewing disorder; • aesthetic defects; • mucosal injury.

Correction: • rearrangement of teeth; • correction of occlusion; • use of an articulator.

3.6. Errors of the prosthesis base

Symptoms: • poor fit; • excessive pressure on the mucous membrane; • deformation of the base; • cracks and breakages.

Reasons: • modeling errors; • incorrect polymerization; • shrinkage of plastic.

Correction: • relining; • repair of the base; • manufacturing of a new prosthesis in case of severe defects.

3.7. Fixation and stabilization errors

Manifestations: • poor fixation; • displacement of the prosthesis during chewing; • violation of the marginal valve.



Reasons: • inaccurate impression; • incorrect definition of the prosthesis boundaries; • atrophy of the alveolar processes.

Correction: • functional relocation; • clarification of marginal boundaries; • use of fixing means.

3.8. Clinical complications

• traumatic ulcers; • inflammation of the mucous membrane; • denture stomatitis; • tissue hyperemia; • pain in the TMJ.

Correction: • temporary removal of the prosthesis; • grinding of the base; • antiseptic therapy; • correction of occlusion.

3.9. Patient adaptation

The adaptation period includes: • getting used to the prosthesis; • speech restoration; • adaptation of the chewing function.

Important recommendations: • gradually increase the wearing time; • follow-up examinations; • correction of the prosthesis in case of discomfort.

3.10. Error prevention

• precise adherence to clinical stages; • use of individual trays; • use of articulators; • occlusion control; • high-quality laboratory work.

4. Conclusion

Defects in removable dentures are a common cause of functional and aesthetic problems during orthopedic treatment. Their timely detection and correction allow for the restoration of full masticatory function, improved patient adaptation, and extended denture life.

Lecture Topic #9. Patient adaptation to a removable denture. Psychology of communication.

1. The purpose of the lecture



To study the processes of patient adaptation to removable orthopedic structures, the physiological and psychological mechanisms of habituation, as well as the principles of effective communication between the dentist and the patient to improve the quality of orthopedic treatment and its results.

2. The issues under consideration

- the concept of adaptation to a removable denture;
- stages of the adaptation period;
- physiological mechanisms of habituation;
- psychological reactions of the patient;
- factors influencing adaptation;
- features of communication between the doctor and the patient;
- the role of patient motivation;
- typical mistakes made by doctors when treating patients;
- recommendations for accelerating adaptation.

3. Key points of the lecture

3.1. The concept of adaptation to a removable denture

Adaptation to a removable denture is a complex of physiological, functional and psychological processes aimed at adapting the patient's body to the presence of a foreign structure in the oral cavity.

It includes:

- adaptation of the mucous membrane;
- restructuring of the muscular system;
- formation of new reflex connections;
- psychological acceptance of the prosthesis.

3.2. Stages of adaptation

There are three main stages:

1. Irritation stage: • first days after installation of the prosthesis; • sensation of a foreign body; • increased salivation; • speech and chewing impairment.
2. Partial habituation stage: • reduction of discomfort; • formation of new motor stereotypes; • improvement of speech and chewing.
3. Stage of complete adaptation • the prosthesis is perceived as part of the oral cavity; • normalization of function; • absence of pronounced discomfort.

3.3. Physiological mechanisms of adaptation



- restructuring of neuromuscular control;
- adaptation of mucosal receptors;
- changes in chewing reflexes;
- formation of new occlusal stereotypes;
- compensatory changes in the TMJ.

3.4. Psychological reactions of the patient

Patients may experience: • anxiety and fear; • distrust of the prosthesis; • a feeling of awkwardness; • decreased self-esteem; • irritability during the adaptation period.

Some patients may experience: • refusal to wear the prosthesis; • increased fixation on discomfort; • hypochondriacal reactions.

3.5. Factors influencing adaptation

Positive factors: • correctly made prosthesis; • high patient motivation; • good condition of the mucous membrane; • experience of previous prosthetics.

Negative factors: • errors in the design of the prosthesis; • severe atrophy of the alveolar processes; • old age; • somatic diseases; • low psychological readiness.

3.6. The role of the physician in the adaptation process

The orthopedic surgeon plays a key role: • explains to the patient the stages of adaptation;

- creates realistic expectations;
- reduces anxiety levels;
- conducts follow-up examinations;
- adjusts the prosthesis if necessary.

3.7. Psychology of communication between doctor and patient

Effective communication includes: • trusting contact; • clear explanation of medical information; • empathy; • respect for the patient; • active listening.

The doctor should avoid: • professional jargon; • ignoring complaints; • categorical statements; • psychological pressure.

3.8. Patient motivation

High motivation promotes: • faster adaptation; • regular wearing of the prosthesis; • compliance with the doctor's recommendations.



Motivation methods: • explanation of the benefits of prosthetics; • demonstration of the expected result; • support for the patient during the adaptation period.

3.9. Recommendations for the patient during the adaptation period

- wear the prosthesis gradually increasing the time; • do not remove the prosthesis during the first days unless necessary; • practice speech (reading aloud); • carefully observe hygiene; • consult a doctor if pain or chafing occurs.

3.10. Typical mistakes made by doctors

- insufficient information to the patient; • ignoring the psychological state; • lack of follow-up examinations; • untimely correction of the prosthesis.

3.11. Complications of adaptation disorders

- refusal to use the prosthesis; • chronic mucosal injuries; • denture stomatitis; • TMJ disorders; • decreased quality of life of the patient.

4. Conclusion

Patient adaptation to a removable denture is a complex, multifactorial process involving physiological and psychological components. The success of orthopedic treatment depends largely not only on the quality of the prosthesis but also on proper communication between the doctor and the patient, providing information, and supporting them during the adjustment period.

Lecture plan for the 10th semester

Lecture Topic No. 1. Fundamentals of occlusal relationships.

1. The purpose of the lecture

To study the basic concepts of occlusion, types of occlusal relationships, their anatomical and functional features and importance in orthopedic dentistry for planning and implementing rational prosthetics.



2. The issues under consideration

- the concept of occlusion and articulation;
- types of occlusion;
- central, anterior and lateral occlusion;
- occlusal contacts of teeth;
- occlusal plane;
- occlusal curves;
- biomechanics of chewing movements;
- the importance of the TMJ in occlusion;
- clinical significance of occlusal relationships.

3. Key points of the lecture

3.1. The concept of occlusion

Occlusion is any position of contact between the teeth of the upper and lower jaws.

Articulation is all possible movements of the lower jaw relative to the upper jaw during chewing, speaking and swallowing.

Thus: • occlusion is a static position; • articulation is a dynamic movement.

3.2. Types of occlusion

There are three main types of occlusion:

- central occlusion;
- anterior occlusion;
- lateral (left and right) occlusion;
- posterior occlusion (rarely encountered as a term in physiology).

3.3. Central occlusion

Central occlusion is characterized by: • maximum multiple contact of teeth; • physiological position of the lower jaw; • stable fixation of the TMJ.

This is the basic position used in prosthetics.

3.4. Anterior occlusion

Occurs when the lower jaw moves forward.

Characteristics: • contact of the front teeth; • separation of the lateral teeth; • movement of the articular heads downwards and forwards.

3.5. Lateral occlusions



They occur when the lower jaw is displaced to the right or left.

Features: • working side – the side of movement; • balancing side – the opposite.

On the working side, the main contact of the teeth occurs, on the balancing side, the guiding contacts.

3.6. Occlusal plane

The occlusal plane is an imaginary surface that passes through the cutting edges of the incisors and the cusps of the chewing teeth.

Meaning: • a guideline for placing teeth in dentures; • affects aesthetics and function; • ensures uniform distribution of the load.

3.7. Occlusal curves

Main curves: • Spee curve (sagittal); • Wilson curve (frontal).

Functions: • ensure occlusion stability;
• promote uniform distribution of the chewing load; • participate in the guiding movements of the lower jaw.

3.8. Biomechanics of chewing movements

Chewing movements include: • vertical movements (opening/closing the mouth); • horizontal movements; • combined movements.

They are provided by: • chewing muscles; • temporomandibular joint; • occlusal contacts of the teeth.

3.9. The role of the TMJ in occlusion

The temporomandibular joint provides: • stability of the lower jaw; • smooth movements; • cushioning of the chewing load.

TMJ disorders lead to: • occlusion dysfunction; • pain syndrome; • chewing and speech disorders.

3.10. Occlusal contacts



A distinction is made between: • point contacts; • linear contacts; • multiple contacts.

Normally, multiple stable occlusion should prevail.

3.11. Clinical significance of occlusion

Correct occlusal relationships ensure: • chewing efficiency;
• uniform distribution of the load; • prevention of periodontal diseases; • stability of prostheses; • normal function of the TMJ.

3.12. Errors in occlusion violations

• premature contacts; • overbite; • uneven load on teeth; • overload of supporting teeth; • TMJ dysfunction.

4. Conclusion

The fundamentals of occlusal relationships are the foundation of orthopedic dentistry. Understanding the types of occlusion, the biomechanics of chewing movements, and the role of the TMJ allows for proper prosthetic planning, ensuring functional stability, and preventing complications.

Lecture Topic No. 2. Temporomandibular joint: anatomy, functions, pathology

1. The purpose of the lecture

To study the anatomical structure and physiological functions of the temporomandibular joint (TMJ), as well as the main types of its pathological conditions, their causes, clinical manifestations, and significance in orthopedic dentistry.

2. The issues under consideration

• anatomy of the temporomandibular joint; • articular surfaces and intra-articular disc; • ligamentous apparatus of the TMJ; • muscular support of movements; • functions of the TMJ; • biomechanics of movements of the lower jaw;
• main pathologies of the TMJ; • dysfunctional syndromes; • clinical significance of the TMJ in orthopedics.



3. Key points of the lecture

3.1. General characteristics of the TMJ

The temporomandibular joint (TMJ) is a paired combined joint that connects the lower jaw to the temporal bone of the skull and provides mobility of the lower jaw.

Features of the TMJ: • paired (both joints work synchronously); • combined nature of movements; • presence of an intra-articular disc; • high functional load.

3.2. Articular surfaces

The TMJ consists of: • the articular head of the mandible; • the glenoid fossa of the temporal bone; • the articular tubercle of the temporal bone.

The articular head is oval in shape and covered with fibrous cartilage.

3.3. Articular disc

An articular disc is a fibrocartilaginous formation located between the articular surfaces.

Functions of the disc: • load absorption; • uniform pressure distribution; • increasing the congruence of the articular surfaces; • dividing the joint into two sections (upper and lower).

3.4. Ligamentous apparatus

The main ligaments of the TMJ: • lateral (external) ligament; • sphenomandibular ligament; • stylomandibular ligament.

Functions of the ligaments: • limitation of excessive movements; • stabilization of the joint; • maintenance of the physiological position of the lower jaw.

3.5. Muscles involved in the work of the TMJ

The main muscles of mastication are: • masseter muscle; • temporalis muscle; • medial pterygoid muscle; • lateral pterygoid muscle.

Functions: • lifting the lower jaw; • forward movement; • lateral movements; • opening the mouth.



3.6. Functions of the TMJ

The TMJ provides: • chewing; • speech; • swallowing; • facial expressions; • respiratory functions (normal).

3.7. Biomechanics of movements

Basic movements of the lower jaw: • opening and closing the mouth; • forward movement (protrusion);
• backward displacement (retrusion); • lateral movements (laterotrusion).

All movements occur synchronously in both joints.

3.8. TMJ pathology

The main groups of diseases: • inflammatory (arthritis); • degenerative (arthrosis);
• functional (joint dysfunction); • traumatic injuries; • developmental anomalies.

3.9. TMJ dysfunction

The most common condition.

Causes: • occlusion disorders; • stress and muscle strain; • improper prosthetics; • injuries; • bruxism.

Clinical manifestations: • pain in the joint area; • clicking and crunching when moving; • limited mouth opening; • asymmetry of movements of the lower jaw.

3.10. TMJ arthritis

Inflammatory joint disease.

Symptoms: • joint pain; • swelling of soft tissues;
• limited movement; • increased temperature in the joint area.

3.11. TMJ arthrosis

Degenerative-dystrophic lesion.

Characteristic: • destruction of articular cartilage; • deformation of articular surfaces; • crepitus during movement; • progressive limitation of mobility.



3.12. Clinical significance of TMJ in orthopedics

The TMJ is of key importance in: • dental prosthetics; • restoration of occlusion; • determining the central relationship of the jaws; • planning bridge and removable structures.

TMJ disorders can lead to: • ineffectiveness of prosthetics; • pain syndromes; • disruption of chewing function.

4. Conclusion

The temporomandibular joint is a vital element of the dental system, enabling complex functional movements of the mandible. Understanding its anatomy and functions is essential for proper diagnosis, treatment, and orthopedic rehabilitation of patients.

Lecture Topic No. 3. TMJ Dysfunction: Diagnosis and the Role of the Orthopedist

1. The purpose of the lecture

To study the concept of temporomandibular joint (TMJ) dysfunction, its main clinical forms, diagnostic methods, and the role of an orthopedic surgeon in identifying, treating, and preventing functional disorders of the joint.

2. The issues under consideration

• concept of TMJ dysfunction; • etiology and pathogenesis; • classification of dysfunctional conditions; • clinical symptoms; • methods of clinical diagnostics; • instrumental research methods; • the role of occlusion in the development of dysfunction; • differential diagnostics; • the role of orthopedic treatment; • prevention of complications.

3. Key points of the lecture

3.1. The concept of TMJ dysfunction

TMJ dysfunction is a functional disorder of the temporomandibular joint and masticatory muscles, accompanied by changes in the normal coordination of movements of the lower jaw, pain syndrome, and occlusion disorders.



Most often, dysfunction refers to a group of functional diseases that are not accompanied by pronounced organic destruction in the early stages.

3.2. Etiology and risk factors

Main reasons: • occlusal disorders (bad bite, high fillings, dentures); • stress and psycho-emotional tension; • bruxism; • injuries to the maxillofacial region; • errors in orthopedic treatment;

• absence of teeth and uneven chewing pressure; • disorders of the chewing muscles.

3.3. Pathogenesis

The basis of the dysfunction is: • impaired coordination of muscle work; • displacement of the articular disc; • overload of the articular elements; • change in occlusal contacts; • formation of a pathological muscle stereotype.

3.4. Classification of TMJ dysfunctions

The following are distinguished: • muscular-articular dysfunctions; • joint dysfunctions (intra-articular disorders); • occlusion-related forms; • mixed forms.

3.5. Clinical symptoms

Main symptoms: • pain in the TMJ area; • clicking and crunching when opening the mouth; • limited or difficult movement of the lower jaw; • feeling of “jamming” of the joint; • headaches; • asymmetry of jaw movements; • increased fatigue of the masticatory muscles.

3.6. Clinical diagnostics

The examination includes: • collection of complaints and anamnesis; • palpation of the TMJ and masticatory muscles; • assessment of the range of motion of the lower jaw; • analysis of occlusion;

• detection of premature contacts; • auscultation of the joint (clicks, crepitus).

3.7. Instrumental diagnostic methods



The following are used: • radiography of the TMJ; • orthopantomography; • CT (computer tomography); • MRI (assessment of the articular disc); • axiography; • electromyography of the masticatory muscles; • occlusal analysis in the articulator.

3.8. The role of occlusion in the development of dysfunction

Occlusion disorders are one of the key factors: • premature contacts overload the joint; • uneven distribution of the load causes muscle spasm; • incorrect dentures change the trajectory of jaw movements.

3.9. Differential diagnostics

Dysfunction of the TMJ must be distinguished from: • arthritis and arthrosis of the joint; • trigeminal neuralgia; • myositis of the masticatory muscles; • odontogenic pain syndromes; • otitis and ENT pathology.

3.10. The Role of the Orthopedic Surgeon

The orthodontist plays a key role in the diagnosis and treatment of:

- identifies occlusal disorders; • evaluates the condition of dentures and fillings; • analyzes articulation; • performs occlusion correction;
- manufactures occlusal splints; • plans rational prosthetics.

3.11. Orthopedic treatment

Main methods: • selective grinding of teeth; • normalization of occlusion; • production of occlusal splints; • rational prosthetics; • restoration of bite height; • elimination of joint overload.

3.12. Prevention

- timely prosthetics in case of tooth loss; • occlusion control after dental interventions; • high-quality production of orthopedic structures; • elimination of bad habits (bruxism); • regular examinations by an orthopedist.

4. Conclusion

TMJ dysfunctions are a complex set of functional disorders often rooted in occlusal and muscular changes. The role of the orthopedist is to identify the causes



early, correct the occlusion, and restore normal dental function, thereby preventing the development of severe organic joint damage.

Lecture Topic No. 4. Orthopedic treatment for bruxism and occlusal overloads

1. The purpose of the lecture

To study the causes and clinical manifestations of bruxism and occlusal overload, as well as modern methods of orthopedic treatment and prevention of complications involving teeth, periodontium, and the temporomandibular joint.

2. The issues under consideration

- the concept of bruxism and occlusal overload;
- etiology and pathogenesis;
- clinical manifestations;
- influence on the dentoalveolar system;
- diagnostics of the condition;
- the role of occlusion in the development of pathology;
- orthopedic treatment methods;
- splinting structures;
- occlusion correction;
- prevention of complications.

3. Key points of the lecture

3.1. The concept of bruxism

Bruxism is an involuntary, usually nocturnal, parafunctional contraction of the masticatory muscles, accompanied by grinding or clenching of the teeth.

There are: • nocturnal bruxism; • daytime (conscious or stressful); • mixed type.

3.2. Occlusal overloads

Occlusal overload is a condition in which chewing forces are distributed unevenly, causing excessive pressure on individual teeth, the periodontium, or TMJ elements.

Reasons: • incorrect dentures; • oversized fillings; • missing teeth; • bite problems; • bruxism; • errors in orthopedic treatment.

3.3 Etiology of bruxism

Main factors: • psycho-emotional stress; • disorders of central nervous regulation; • occlusive disorders; • neurological disorders; • bad habits; • sleep disorders.



3.4 Pathogenesis

The underlying causes are: • hyperactivity of the masticatory muscles; • increased muscle tone at rest; • excessive pressure on the teeth and periodontium; • microtraumatization of tissues; • dysfunction of the TMJ.

3.5. Clinical manifestations

Patients experience: • tooth wear (pathological); • tooth hypersensitivity; • pain in the chewing muscles; • headaches; • clicking in the TMJ; • enamel cracks; • tooth mobility; • discomfort after sleep.

3.6. Diagnostics

Clinical examination includes: • anamnesis (stress, complaints of grinding); • examination of the oral cavity; • assessment of the degree of tooth wear; • palpation of the masticatory muscles; • occlusion analysis; • TMJ assessment.

Additional methods: • electromyography of the masticatory muscles; • polysomnography (nocturnal bruxism); • articulation analysis; • diagnostic models of the jaws.

3.7. Occlusal disorders in bruxism

Characteristic: • multiple traumatic contacts; • overload of individual teeth; • violation of central occlusion; • dysfunction of the TMJ; • pathological abrasion.

3.8. Orthopedic treatment

Main objectives: • protection of teeth from abrasion; • normalization of occlusion; • reduction of muscle activity; • unloading of the TMJ; • restoration of chewing function.

3.9. Occlusal splints

The most common method of treatment.

Types of splints: • relaxation (muscle relaxant); • stabilizing; • repositioning; • protective caps.



Effects of tires: • decreased muscle tone;

• redistribution of the load; • protection of enamel from abrasion; • stabilization of the TMJ.

3.10. Orthopedic correction of occlusion

Methods: • selective grinding of teeth; • elimination of premature contacts; • replacement of poor-quality restorations; • rational prosthetics; • restoration of bite height when decreased.

3.11. Prosthetics for bruxism

Features: • use of durable materials (metal, zirconium); • enhanced occlusal adaptation; • occlusion control after fixation; • avoidance of fragile structures in the lateral sections.

3.12. Prevention

• stress management; • regular dental examinations; • early detection of occlusal disorders; • correct prosthetics; • bite control after treatment; • use of protective mouth guards for night bruxism.

4. Conclusion

Bruxism and occlusal overload are important factors in the development of dental, periodontal, and TMJ pathologies. Orthopedic treatment is aimed at protecting the dental system, normalizing occlusion, and reducing muscle strain. A comprehensive approach helps prevent disease progression and maintain the functional state of the dentition.

Lecture Topic #5. Mouth guards, splints, and splints – types and indications.

1. The purpose of the lecture

To study modern orthopedic and orthodontic devices in the form of mouth guards, splints, and braces, their classification, clinical indications, mechanisms of action, and role in the treatment of functional and structural disorders of the dentoalveolar system.

2. The issues under consideration



- concept of mouth guards, splints and tyres;
- classification of designs;
- materials of manufacture;
- mechanisms of action;
- indications for use;
- use in bruxism and TMJ;
- use in periodontal diseases;
- features of manufacture and clinical use;
- errors and complications.

3. Key points of the lecture

3.1 General concepts

Mouth guards, splints and splints are removable or conditionally removable orthopedic structures designed to:

- protect teeth and periodontal tissues;
- stabilize occlusion;
- redistribute chewing load;
- treat TMJ dysfunctions;
- reduce muscle hypertonicity.

3.2. Kappas

A mouth guard is a thin, individual piece of dental support, usually made of elastic or hard material.

Types of mouth guards:

- protective sports mouth guards;
- night guards for bruxism;
- whitening mouth guards;
- therapeutic occlusive mouth guards.

Indications:

- bruxism;
- prevention of tooth wear;
- protection during sports;
- initial forms of TMJ dysfunction.

3.3. Occlusal splints

An occlusal splint is a more complex design that ensures the redistribution of occlusal contacts and stabilization of the lower jaw.

Types of splints:

- stabilizing (muscle relaxant);
- isolating;
- repositioning;
- unloading;
- periodontal splints.

Indications:

- TMJ dysfunction;
- bruxism;
- muscle pain;
- occlusal overload;
- initial forms of periodontitis with tooth mobility.

3.4. Splints

A splint is a functional orthopedic structure used to change the position of the lower jaw and stabilize joint relationships.



Types of splints: • front positioning; • rear stabilizing; • decompression; • muscle relaxant.

Indications: • severe dysfunction of the TMJ; • displacement of the articular disc; • chronic pain syndrome; • violation of central occlusion; • adaptation therapy before prosthetics.

3.5. Materials of manufacture

The following are used: • acrylic plastics; • thermoplastic materials; • silicone materials; • composites; • combined systems.

3.6 Mechanism of action

Main effects: • redistribution of occlusal load; • elimination of traumatic contacts; • relaxation of masticatory muscles; • stabilization of the position of the lower jaw; • protection of hard dental tissues; • reduction of pain.

3.7. Clinical application

Mouth guards, splints and tyres are used for: • bruxism; • TMJ dysfunction; • periodontitis with tooth mobility; • increased tooth wear; • rehabilitation after orthopedic treatment; • preparation for prosthetics.

3.8. Periodontal application

In periodontal diseases: • stabilization of mobile teeth; • reduction of traumatic occlusion; • redistribution of chewing load; • improving the prognosis for tooth preservation.

3.9. Errors and complications

Possible problems: • incorrect determination of occlusion; • overbite; • increased muscle pain; • impaired patient adaptation; • insufficient fixation of the structure; • failure to comply with the wearing regimen.

3.10. Clinical features of use



- mandatory individual diagnostics;
- registration of the central relationship of the jaws;
- occlusion control after installation;
- gradual adaptation of the patient;
- regular corrections of the design.

4. Conclusion

Mouth guards, splints, and braces are essential tools in orthopedic dentistry, allowing for the effective treatment of functional disorders, protecting teeth from overload and wear, and stabilizing the TMJ. Their use requires accurate diagnosis, an individualized approach, and regular monitoring to achieve consistent clinical results.

Lecture Topic #6.Bite and its rehabilitation in orthopedics.

1. The purpose of the lecture

To study the concept of occlusion, its types, its importance in the functioning of the dental system, as well as modern methods of diagnosis and orthopedic rehabilitation of occlusion disorders.

2. The issues under consideration

- the concept of bite and occlusion;
- types of physiological and pathological bite;
- the role of bite in chewing function;
- methods of diagnosing occlusion;
- causes of bite disorders;
- the effect of tooth loss on bite;
- orthopedic methods of restoration;
- stages of bite rehabilitation;
- complications in occlusion disorders.

3. Key points of the lecture

3.1. The concept of occlusion

Bite is the relationship between the dental arches of the upper and lower jaws when they are closed in the position of central occlusion.

The bite reflects the functional and anatomical interaction of all elements of the dental system: • teeth; • periodontium; • TMJ; • masticatory muscles.

3.2. Types of bite



Physiological types: • orthognathic; • straight; • biprognathic; • opisthognathic (normal variants).

Pathological types: • distal bite; • mesial bite; • open bite; • deep bite; • crossbite.

3.3. The importance of bite

A normal bite ensures: • effective chewing; • correct speech; • uniform distribution of the load; • stability of the TMJ; • aesthetic harmony of the face.

3.4 Causes of malocclusion

Main factors: • tooth loss; • improper prosthetics; • periodontal disease; • congenital anomalies; • jaw injuries; • tooth wear; • TMJ dysfunction.

3.5. Consequences of malocclusion

• overload of individual teeth; • pathological abrasion; • TMJ dysfunction; • pain in the masticatory muscles; • disruption of facial aesthetics; • digestive disorders due to ineffective chewing.

3.6. Bite diagnostics

Examination methods: • clinical examination; • occlusion analysis; • study of diagnostic models; • articulation analysis; • x-ray examination; • functional tests of the TMJ.

3.7. Orthopedic rehabilitation of bite

Objectives: • restoration of correct occlusal relationships; • normalization of chewing function; • stabilization of the TMJ; • restoration of aesthetics and bite height.

3.8. Rehabilitation methods

3.8.1. Fixed prosthetics • crowns; • bridge prostheses; • inlays and onlays; • implantological structures.

3.8.2. Removable prosthetics • partial removable dentures; • complete removable dentures; • clasp dentures.



3.8.3. Occlusal correction • selective grinding of teeth; • elimination of premature contacts; • restoration of the occlusal plane.

3.8.4. Temporary rehabilitation • temporary crowns; • diagnostic mouth guards; • splints and braces.

3.9. Stages of orthopedic rehabilitation

1. Occlusion diagnostics and analysis;
2. Oral cavity preparation;
3. Temporary restoration of bite;
4. Manufacturing of permanent structures;
5. Occlusion correction;
6. Patient control and adaptation.

3.10. The role of TMJ in rehabilitation

When restoring the bite, the following must be taken into account: • central relationship of the jaws; • position of the articular head; • muscle balance; • functional movements of the lower jaw.

3.11. Complications of improper rehabilitation

• dysfunction of the TMJ; • overload of supporting teeth; • muscle pain; • impaired adaptation to dentures; • relapse of pathological bite.

4. Conclusion

The bite is a key factor in the normal functioning of the dental system. Its disruption leads to functional and anatomical changes, requiring comprehensive orthopedic rehabilitation. Modern methods of prosthetics and occlusal correction allow for effective restoration of the bite, normalization of chewing function, and long-term stability of treatment results.

Lecture Topic #7. Features of prosthetics in elderly and somatically weakened patients

1. The purpose of the lecture



To study the anatomical, physiological and clinical characteristics of elderly and somatically weakened patients that influence orthopedic treatment, as well as the principles of selection and implementation of prosthetics, taking into account the general condition of the body.

2. The issues under consideration

- age-related changes in the dentoalveolar system;
- somatic complications and their impact on prosthetics;
- features of clinical examination;
- choice of orthopedic structures;
- features of removable and fixed prosthetics;
- adaptation to prosthetics in elderly patients;
- complications and their prevention;
- hygienic aspects;
- psycho-emotional characteristics of patients.

3. Key points of the lecture

3.1. General characteristics of the patient group

Elderly and somatically weakened patients are older patients and individuals with chronic systemic diseases (cardiovascular, endocrine, neurological), which influence the choice and implementation of orthopedic treatment.

3.2. Age-related changes in the dental system

The main changes include: • tooth wear; • decreased bite height; • atrophy of the alveolar processes; • decreased salivation (xerostomia); • decreased elasticity of the mucous membrane; • tooth mobility due to periodontitis; • decreased adaptive capacity of the TMJ.

3.3. Impact of somatic diseases

Common conditions include: • diabetes mellitus; • hypertension; • ischemic heart disease; • osteoporosis; • gastrointestinal diseases; • neurological disorders.

These conditions affect: • tissue healing; • tolerance of prostheses; • choice of materials; • treatment tactics.

3.4. Features of clinical examination

The examination should be extensive and include: • a detailed anamnesis (including medication); • an assessment of the general condition of the patient; •



consultations with related specialists if necessary; • an analysis of the hygienic condition of the oral cavity; • an assessment of the condition of the periodontium and mucous membrane.

3.5. Selection of orthopedic structures

Principles of selection: • minimal trauma; • simplicity of design; • possibility of hygienic care; • adaptive comfort; • consideration of the financial and functional capabilities of the patient.

Preferred designs: • partial removable dentures; • complete removable dentures; • clasp dentures with intact supporting teeth; • temporary designs during the adaptation stage.

Fixed structures are used to a limited extent due to the condition of the periodontium and general health.

3.6. Features of removable dentures

In elderly patients: • increased adaptation period; • need for soft bases; • careful correction of the edges of the prosthesis; • control of pressure on the mucous membrane; • frequent follow-up examinations.

3.7. Fixed prosthetics

It is used when: • there is a sufficient number of stable teeth; • good condition of the periodontium; • compensated somatic status.

Features: • minimal preparation; • gentle fixation; • preference for durable materials.

3.8. Adaptation to prostheses

In elderly patients, adaptation: • takes longer; • may be accompanied by discomfort; • requires psychological support.

Factors influencing adaptation: • age; • state of the central nervous system; • presence of chronic diseases; • patient motivation.

3.9. Complications



Possible problems: • pressure sores of the mucous membrane; • failure of the prosthesis to be fixed; • gag reflex; • pain when chewing; • refusal to use the prosthesis.

3.10. Prevention of complications

• regular adjustment of dentures; • training in oral hygiene; • use of soft linings; • gradual increase in wearing time; • check-ups every 6–12 months.

3.11. Psychological characteristics

Elderly patients often experience: • anxiety; • distrust of new designs; • decreased motivation; • fear of pain and discomfort.

Therefore, it is important: • explanatory work; • simple and clear explanation of treatment; • patient support at all stages.

4. Conclusion

Prosthetic dentistry for elderly and medically weakened patients requires an individualized and gentle approach, taking into account the patient's overall health, dental and jaw system functionality, and psychoemotional status. Successful treatment depends on the correct design, careful adaptation, and regular monitoring, ensuring patient comfort and functional rehabilitation.

Lecture Topic #8. Principles of complex orthopedic treatment.

1. The purpose of the lecture

To study the basic principles of comprehensive orthopedic treatment for patients with dental arch and tooth defects, as well as functional disorders of the dentoalveolar system, taking into account an interdisciplinary approach, staged therapy, and individual planning.

2. The issues under consideration

• the concept of complex orthopedic treatment; • stages of treatment; • interdisciplinary approach; • diagnostics and planning; • preparatory stage; • choice of orthopedic structures; • functional and aesthetic rehabilitation; • the role of occlusion and TMJ; • prevention of complications; • dispensary observation.



3. Key points of the lecture

3.1. The concept of complex orthopedic treatment

Comprehensive orthopedic treatment is a system of therapeutic measures aimed at restoring the anatomical integrity, function, and aesthetics of the dental system using various prosthetic methods and auxiliary dental and medical interventions.

It includes not only the manufacture of prostheses, but also the preparation of the oral cavity, treatment of concomitant diseases and the functional adaptation of the patient.

3.2. Basic principles

Key principles of complex treatment: • individual approach to the patient; • staged treatment;

• functional focus; • biomechanical validity; • minimal invasiveness; • interdisciplinary interaction; • long-term stability of the result.

3.3. Diagnostic stage

At this stage the following is carried out: • collection of complaints and anamnesis; • clinical examination; • assessment of occlusion; • study of the TMJ; • radiological diagnostics; • analysis of diagnostic models; • determination of the bite height.

The goal is to identify all factors influencing prosthetics.


3.4 Treatment planning

An individual plan is drawn up, including: • sequence of treatment measures; • choice of type of prosthetics; • need for preliminary treatment (therapeutic, surgical, periodontal); • temporary and permanent structures; • treatment prognosis.

3.5. Preparatory stage

Includes: • oral cavity sanitation; • treatment of caries and its complications; • periodontal therapy; • removal of hopeless teeth; • surgical preparation; • normalization of oral hygiene.

3.6. Orthopedic stage

	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"

The main stage of treatment: • production of temporary structures; • restoration of occlusion; • prosthetics with fixed and removable structures; • bite correction; • restoration of chewing efficiency and aesthetics.

3.7. Functional rehabilitation

Particular attention is paid to: • restoration of chewing function; • normalization of speech; • stabilization of the TMJ; • uniform distribution of the load; • elimination of parafunctions.

3.8. The Role of Occlusion

Occlusion is a key factor in successful treatment: • ensures the stability of the prosthesis; • affects the TMJ; • determines the distribution of the chewing load; • prevents overload of the teeth and periodontium.

3.9. Interdisciplinary approach

The following are involved in the treatment: • a general dentist; • a dental surgeon; • a periodontist; • an orthodontist; • an orthopedic dentist; • if necessary, an ENT specialist, neurologist, endocrinologist.

3.10. Complications in the absence of an integrated approach

• overload of supporting teeth; • TMJ dysfunction; • instability of prostheses; • rapid loss of structures; • deterioration of the periodontal condition; • unsatisfactory patient adaptation.

3.11. Outpatient observation

After completion of treatment it is necessary to: • regular examinations of the patient; • correction of dentures; • control of occlusion; • prevention of complications; • training in oral hygiene.

4. Conclusion

Comprehensive orthopedic treatment is the foundation of modern dental rehabilitation. Its effectiveness is determined by accurate diagnosis, precise planning, staged implementation, and specialist collaboration. This approach not



only restores the function and aesthetics of the dental system but also ensures long-term stability of treatment results.

Lecture Topic #9.Preparation and presentation of a clinical case (diploma).

1. The purpose of the lecture

To study the principles of preparation, design, and presentation of a clinical case in orthopedic dentistry for a thesis, including the structure of medical documentation, the logic of clinical thinking, and the requirements for scientific analysis of a patient.

2. The issues under consideration

- concept of a clinical case;
- goals and objectives of its presentation;
- structure of the clinical case description;
- collection and analysis of clinical data;
- diagnosis;
- orthopedic treatment plan;
- stages of treatment and their rationale;
- treatment results;
- presentation of conclusions;
- requirements for the thesis.

3. Key points of the lecture

3.1. The concept of a clinical case

A clinical case is a detailed description of a specific patient with an analysis of his disease, diagnostic methods, treatment and results, used to demonstrate clinical reasoning and justify the chosen treatment tactics.

In the thesis, the clinical case is the basis of the practical part of the research.

3.2. Objectives of presenting a clinical case

- demonstration of clinical thinking;
- justification of the choice of treatment method;
- analysis of the effectiveness of orthopedic intervention;
- systematization of medical data;
- confirmation of professional competencies.

3.3. Structure of the clinical case

Typically includes:

- patient's passport details;
- complaints;
- medical history;
- life history;
- objective examination;
- additional research methods;
- diagnosis;
- treatment plan;
- course of treatment;
- results;
- conclusion.



3.4 Collection of clinical data

Includes: • detailed patient survey; • analysis of complaints (aesthetics, function, pain); • study of medical history; • assessment of past illnesses; • dental history (prosthetics, tooth extraction).

3.5. Clinical examination

The following is performed: • examination of the oral cavity; • assessment of the dental arches; • occlusion analysis; • examination of the TMJ; • assessment of the periodontal condition; • palpation of the masticatory muscles; • assessment of the mucous membrane.

3.6. Additional research methods

The following are used: • X-ray; • orthopantomogram; • CT if necessary; • diagnostic models; • articulation analysis; • functional tests.

3.7. Making a diagnosis

The diagnosis is formed taking into account: • the underlying disease; • concomitant pathologies; • complications; • functional disorders.

It is important to use the generally accepted dental classification.

3.8. Orthopedic treatment plan

Should include: • preparatory stage (sanitation, periodontal treatment); • temporary prosthetics; • main stage of prosthetics; • occlusion correction; • patient rehabilitation.

Each step must be clinically justified.

3.9. Treatment progress

The description includes: • sequence of clinical stages; • materials and designs used; • features of preparation; • taking impressions; • fitting and fixation of prostheses; • complications (if any).

3.10. Treatment results



The following are assessed: • restoration of chewing function; • aesthetic result; • patient adaptation; • condition of the TMJ; • stability of occlusion; • patient satisfaction.

3.11. Conclusion and findings

Include: • the effectiveness of the chosen treatment method; • the clinical significance of the case; • recommendations for further monitoring; • possible alternative approaches.

3.12. Requirements for the presentation of a thesis clinical case

• logical and consistent presentation; • use of medical terminology; • presence of illustrations (photos, x-rays, models); • objectivity of analysis; • compliance with medical documentation standards; • scientific style of presentation.

4. Conclusion

A clinical case in a thesis is an important demonstration of a dentist's practical skills. Its proper preparation requires a systematic approach to patient analysis, a clear rationale for treatment, and an objective evaluation of the results, reflecting the future specialist's level of professional training.

2.2. Development of practical/seminar/laboratory classes

5th semester

Lesson Topic 1: Clinical Examination of an Orthopedic Patient. Interviewing and Complaining with a Patient in the Orthopedic Department

1. Objective of the lesson: To study the features of clinical examination of an orthopedic patient, methods of collecting complaints and conducting a survey in an orthopedic office.
2. Educational technologies
 - Pre-test
 - Analysis of clinical situations
 - Post-test




3. Basic concepts: • complaints of the orthopedic patient; • aesthetic and functional disorders; • primary examination; • dental survey; • assessment of chewing function; • defects of the dentition.
4. Questions for the lesson: • main complaints of patients; • structure of the clinical survey; • importance of the anamnesis; • primary examination; • identification of functional disorders.
5. Questions for self-assessment: • goals of clinical examination; • stages of the survey; • the role of subjective data; • the relationship of complaints with pathology; • the importance of the initial examination.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 2: Medical and Life History of Patients Seeking Orthopedic Care. Past and Concomitant Dental-Related Diseases

1. Objective of the lesson: To study the methods of collecting anamnesis and the influence of somatic diseases on orthopedic treatment.
2. Educational technologies
 - Pre-test
 - Analysis of clinical cases
 - Post-test
3. Key concepts: • medical history; • life history; • concomitant diseases; • allergic history; • medication history; • systemic diseases.
4. Questions for the lesson: • structure of the anamnesis; • influence of somatic pathology; • allergic reactions; • contraindications to prosthetics; • consideration of drug therapy.
5. Questions for self-assessment: • the importance of life history; • the influence of systemic diseases; • the role of allergy history; • contraindications; • connection with the choice of design.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 3: Examination of the face, dentition, oral mucosa, and tongue for subsequent prosthetic treatment. Palpation. Percussion. Probing. Auscultation.

1. Objective of the lesson: To study methods of objective clinical examination of an orthopedic patient.

	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"

2. Educational technologies

- Pre-test
 - Practical training
 - Post-test
3. Basic concepts: • examination of the face; • facial symmetry; • dental arches; • mucous membrane; • palpation; • percussion of teeth; • functional diagnostics.
 4. Questions for the lesson: • stages of examination; • assessment of dental arches; • palpation and percussion; • diagnosis of TMJ; • assessment of the mucous membrane.
 5. Questions for self-assessment: • the importance of an objective examination; • the sequence of examination; • signs of pathology; • functional tests; • pain assessment.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 4: Laboratory Research Methods: EOD, EMG, and anthropometric measurements. Rheography of the periodontium and joints. Mastication. Galvanometry, pH-metry of saliva. Orthopantomography. Targeted radiography.

1. Objective of the lesson: To study additional diagnostic methods in orthopedic dentistry.
2. Educational technologies
 - Pre-test
 - Working with equipment
 - Post-test
3. Basic concepts: • EOD; • EMG; • X-ray diagnostics; • rheography; • mastication; • galvanometry; • pH of saliva.
4. Questions for the lesson: • EOD and EMG methods; • X-ray methods; • TMJ assessment; • functional diagnostics; • saliva analysis.
5. Questions for self-assessment: • indications for EOD; • the meaning of EMG; • types of radiography; • diagnostics of occlusion; • functional tests.



6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 5: Main Diseases Treated in an Orthopedic Dentistry Clinic. Creating an Orthopedic Treatment Plan and Choosing a Prosthetic Design

1. Objective of the lesson: To study diseases requiring orthopedic treatment and the principles of prosthetic planning.
2. Educational technologies
 - Pre-test
 - Clinical tasks
 - Post-test
3. Basic concepts: • defects of dental arches; • IROPZ; • classification of defects;
 - treatment plan; • choice of prosthesis.
4. Questions for the lesson: • nosological forms; • indications for prosthetics; • choice of design; • stages of treatment; • treatment planning.
5. Questions for self-assessment: • classification of defects; • choice of design; • indications for removable and fixed dentures; • stages of treatment.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 6: Medical History and Work Order. Guidelines for Completing an Orthopedic Patient's Medical History. The Importance of a Medical History as a Scientific, Medical, and Legal Document.

1. Objective of the lesson: To study the rules for preparing medical documentation in orthopedic dentistry.
2. Educational technologies
 - Pre-test
 - Working with documents
 - Post-test
3. Basic concepts: • medical history; • work order; • medical documentation; • legal significance; • clinical data recording.
4. Questions for the lesson: • structure of the medical history; • rules for filling out;



- legal significance; • execution of a work order; • responsibility of the doctor.
5. Questions for self-assessment: • the importance of documentation; • design errors; • legal aspects; • data storage.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 7: Orthopedic Treatment Methods for Patients with Dental Crown Hard Tissue Defects Caused by Caries and Non-Carious Lesions. IROPZ. Clinical Appointment and Patient Analysis

1. Objective of the lesson: To study the methods of orthopedic restoration of the crown of teeth with carious and non-carious lesions, as well as the significance of IROPZ.
2. Educational technologies
 - Pre-test
 - Analysis of clinical cases
 - Post-test
3. Basic concepts: • defects of hard dental tissues; • carious and non-carious lesions; • IROPZ; • inlays, onlays, crowns; • restoration of the coronal part of the tooth.
4. Questions for the lesson: • classification of dental defects; • restoration methods; • the meaning of IROPZ; • indications for crowns; • choice of design.
5. Questions for self-assessment: • differences between carious and non-carious defects; • indications for prosthetics; • the meaning of IROPZ; • choice of treatment method.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 8: Inlays. Types. Methods and Clinical and Laboratory Stages of Fabrication. Indications for Use and Features of Cavity Formation.

1. Objective of the lesson: To study the types of inlays and the stages of their production.
2. Educational technologies
 - Pre-test
 - Dissection practice



- Post-test
3. Basic concepts: • tabs (inlay, onlay, overlay); • cavity formation; • fixation; • clinical and laboratory stages; • tab materials.
 4. Questions for the lesson: • types of inlays; • indications; • manufacturing stages; • cavity formation; • fixation.
 5. Questions for self-assessment: • classification of inlays; • features of preparation; • advantages of inlays; • manufacturing errors.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 9: Metal Crowns. Types (stamped, cast). Indications and Contraindications.

1. Objective of the lesson: To study the types of metal crowns and their clinical application.
2. Educational technologies
 - Pre-test
 - Analysis of clinical cases
 - Post-test
3. Basic concepts: • stamped crowns; • cast crowns; • metal alloys; • fixation; • indications.
4. Questions for the lesson: • types of crowns; • indications; • contraindications; • advantages and disadvantages; • choice of design.
5. Questions for self-control: • differences in crowns; • indications for use; • selection errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 10: Tooth Preparation for Stamped and Cast Metal Crowns. Assessment of Preparation Quality

1. Objective of the lesson: To study the technique of preparing teeth for metal crowns.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test



3. Basic concepts: • tooth preparation; • shoulder; • retention; • resistance; • tooth stump.
4. Questions for the lesson: • preparation stages; • features for different crowns; • quality criteria; • preparation errors.
5. Questions for self-assessment: • requirements for the tooth stump; • types of ledges; • quality assessment; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 11: Methods of obtaining impressions using various impression materials and criteria for their evaluation

1. Objective of the lesson: To study the methods of obtaining impressions and their clinical evaluation.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • alginate masses; • silicone materials; • impression; • working model; • quality criteria.
4. Questions for the lesson: • types of impression materials; • impression taking techniques; • errors; • quality assessment; • disinfection.
5. Questions for self-assessment: • requirements for the print; • differences in materials; • errors in receipt.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 12: Methodology for Fitting Single Metal Crowns. Rules and Sequence for Crown Clamping

1. Objective of the lesson: To study the stages of fitting and fixing crowns.
2. Educational technologies
 - Pre-test
 - Clinical practice
 - Post-test
3. Basic concepts: • fitting; • occlusion; • fixation; • cements; • correction.



4. Questions for the lesson: • fitting stages; • occlusion check; • fixation; • cements; • errors.
5. Questions for self-control: • sequence of fixation; • quality criteria; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 13: One-Visit Plastic Crown Fabrication Technology. Advantages and Disadvantages

1. Objective of the lesson: To study the production of temporary plastic crowns.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • temporary crowns; • plastics; • aesthetics; • tooth protection; • tissue adaptation.
4. Questions for the lesson: • manufacturing technology; • indications; • advantages; • disadvantages; • fixation.
5. Questions for self-assessment: • the role of temporary crowns; • materials; • manufacturing errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 14: Metal-Acrylic Crowns. Indications and Contraindications. Clinical and Laboratory Manufacturing Stages

1. Objective of the lesson: To study the design of metal-acrylic crowns.
2. Educational technologies
 - Pre-test
 - Analysis of structures
 - Post-test
3. Basic concepts: • metal acrylic; • frame; • cladding; • fixation; • aesthetics.
4. Questions for the lesson: • indications; • contraindications; • manufacturing stages; • design features; • fixation.



5. Questions for self-control: • advantages; • disadvantages; • manufacturing errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 15: Metal-Ceramic Crowns. Indications and Contraindications. Clinical and Laboratory Stages of Fabrication

1. Objective of the lesson: To study metal-ceramic structures and the stages of their manufacture.
2. Educational technologies
 - Pre-test
 - Clinical analysis
 - Post-test
3. Basic concepts: • metal ceramics; • frame; • ceramic cladding; • aesthetics; • strength.
4. Questions for the lesson: • indications; • contraindications; • manufacturing stages; • preparation; • fixation.
5. Questions for self-assessment: • advantages of metal ceramics; • manufacturing errors; • clinical limitations.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 16: Features of tooth preparation and obtaining double impressions

1. Objective of the lesson: To study the technique of preparation and double impressions.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • double print;
 - gum retraction; • ledge; • impression accuracy; • silicone materials.
4. Questions for the lesson: • preparation technique; • stages of double impression; • materials; • errors.



5. Questions for self-control: • the meaning of retraction; • accuracy of the impression; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 17: Gingival Retraction. Methods and Materials for Gingival Retraction. Procedure. Clinical Appointment and Patient Analysis.

1. Objective of the lesson: To study methods of gum retraction in orthopedic treatment.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • gingival retraction; • retraction threads; • hemostatic agents; • opening of the gingival sulcus; • impression.
4. Questions for the lesson: • retraction methods; • materials; • technique; • complications; • indications.
5. Questions for self-control: • purpose of retraction; • types of materials; • errors in implementation.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 18: Final Assessment

1. Objective of the lesson: Assessment of theoretical and practical knowledge in the course of orthopedic dentistry.
2. Educational technologies
 - Testing
3. Basic concepts: • basic knowledge of orthopedic dentistry; • clinical thinking; • diagnostics; • choice of prosthesis design.
4. Questions for the lesson: • theoretical questions of the course; • clinical tasks; • methods of prosthetics; • diagnostics of defects.
5. Questions for self-assessment: • main sections of orthopedics; • indications for prosthetics; • treatment errors.
6. Venue: Moskovskaya 172, Department of Dentistry



Thematic panel of practical classes for the 6th semester

Lesson Topic 1: Organizing an Orthopedic Surgeon's Workspace. Tools and Equipment

1. Objective of the lesson: To study the organization of the workplace of an orthopedic doctor, the instruments and equipment used in orthopedic dentistry.
2. Educational technologies
 - Pre-test
 - Equipment demonstration
 - Post-test
3. Basic concepts: • dental chair; • orthodontic instruments; • impression trays; • burs, tips; • office organization.
4. Questions for the lesson: • requirements for the workplace; • instruments of an orthopedic surgeon; • office equipment; • sterilization rules; • work safety.
5. Questions for self-assessment: • equipment of the office; • purpose of instruments; • aseptic requirements.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 2: Collecting anamnesis and examining the patient

1. Objective of the lesson: To study the methodology of collecting anamnesis and primary examination of an orthopedic patient.
2. Educational technologies
 - Pre-test
 - Working with the patient
 - Post-test
3. Basic concepts: • life history; • medical history; • patient complaints; • medical history; • primary examination.
4. Questions for the lesson: • structure of anamnesis; • survey methodology; • identification of complaints; • significance of concomitant diseases; • primary diagnosis.



5. Questions for self-assessment: • stages of collecting anamnesis; • meaning of complaints; • role of examination.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 3: Examination of the oral cavity and assessment of the condition of the teeth and mucous membrane

1. Objective of the lesson: To study methods of examining the oral cavity and assessing the condition of the teeth and mucous membrane.
2. Educational technologies
 - Pre-test
 - Practical inspection
 - Post-test
3. Basic concepts: • examination of the oral cavity; • dental arches; • mucous membrane; • hygienic index; • pathological changes.
4. Questions for the lesson: • stages of examination; • assessment of teeth; • assessment of the mucous membrane; • identification of pathologies; • diagnostics.
5. Questions for self-assessment: • sequence of examination; • signs of disease; • assessment of tissue condition.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 4: Determination of Dental Defects. Classification

1. Objective of the lesson: To study the classification of dental defects and methods for their identification.
2. Educational technologies
 - Pre-test
 - Analysis of diagrams
 - Post-test
3. Basic concepts: • defects of dental arches; • Kennedy classification; • partial adentia; • complete adentia; • functional disorders.
4. Questions for the lesson: • types of defects; • classification; • clinical forms; • diagnostic significance; • impact on function.



5. Questions for self-assessment: • Kennedy classification; • types of defects; • clinical significance.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 5: Impression Materials and Impression Methods

1. Objective of the lesson: To study the types of impression materials and methods of obtaining impressions.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • alginates; • silicones; • impression materials; • impression trays; • working models.
4. Questions for the lesson: • types of materials; • methods of obtaining impressions; • indications; • errors; • disinfection.
5. Questions for self-assessment: • properties of materials; • impression taking techniques; • impression requirements.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 6: Taking Anatomical Impressions

1. Objective of the lesson: To study the technique of obtaining anatomical impressions.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • anatomical impression; • primary impression; • spoons; • marginal design; • jaw models.
4. Questions for the lesson: • technique of obtaining; • materials; • errors; • purpose; • quality assessment.
5. Questions for self-assessment: • differences in anatomical impressions; • stages of obtaining; • requirements.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 7: Diagnostic Models and Their Analysis

1. Objective of the lesson: To study the production and analysis of diagnostic models of jaws.
2. Educational technologies
 - Pre-test
 - Working with models
 - Post-test
3. Basic concepts: • plaster models; • articulation; • occlusion; • model analysis; • diagnostic modeling.
4. Questions for the lesson: • making models; • occlusion analysis; • identifying defects; • treatment planning; • articulators.
5. Questions for self-assessment: • the meaning of models; • methods of analysis; • diagnostic errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 8: Preparation of teeth for artificial crowns (phantom)

1. Objective of the lesson: To study the principles of preparing teeth for crowns on a phantom.
2. Educational technologies
 - Pre-test
 - Practice on a phantom
 - Post-test
3. Basic concepts: • preparation; • ledge; • tissue reduction; • tooth stump; • retention.
4. Questions for the lesson: • stages of preparation; • tools; • types of benches; • quality control; • errors.
5. Questions for self-control: • requirements for the stump; • dissection technique; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 9: Preparing Teeth for Metal Crowns. Module 1

1. Objective of the lesson: To study the stages of preparing teeth for metal crowns.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • stamped crowns; • cast crowns; • preparation; • retention; • fixation.
4. Questions for the lesson: • preparation features; • stages of preparation; • requirements for the stump; • errors; • indications.
5. Questions for self-assessment: • types of metal crowns; • preparation technique; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 10: Preparing Teeth for Metal-Ceramic Crowns

1. Objective of the lesson: To study the features of tooth preparation for metal-ceramic structures.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • metal ceramics; • ledge; • aesthetics; • frame; • cladding.
4. Questions for the lesson: • stages of preparation; • features of the ledge; • requirements; • errors; • indications.
5. Questions for self-control: • features of metal ceramics; • preparation technique; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 11: Making Temporary Crowns

1. Objective of the lesson: To study the technology of making temporary crowns.



2. Educational technologies


- Pre-test
 - Practice
 - Post-test
3. Basic concepts: • temporary crowns; • plastics; • tooth protection; • aesthetics; • adaptation.
 4. Questions for the lesson: • manufacturing technology; • materials; • indications; • fixation; • errors.
 5. Questions for self-assessment: • the role of temporary crowns; • manufacturing stages; • complications.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 12: Construction of Bridge Prosthesis

1. Objective of the lesson: To study the types and design of bridge prostheses.
2. Educational technologies
 - Pre-test
 - Analysis of structures
 - Post-test
3. Basic concepts:• supporting teeth;• intermediate part;• bridge prosthesis;• fixation;• support ability.
4. Questions for the lesson: • types of structures; • elements of the prosthesis; • indications; • advantages; • disadvantages.
5. Questions for self-control: • structure of a bridge prosthesis; • functions of elements; • indications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 13: Stages of Dental Bridge Fabrication

1. Objective of the lesson: To study the clinical and laboratory stages of manufacturing bridge prostheses.
2. Educational technologies
 - Pre-test
 - Practice

	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"

- Post-test
3. Basic concepts: • clinical stages; • laboratory stages; • impressions; • fitting; • fixation.
 4. Questions for the lesson: • manufacturing stages; • work sequence; • errors; • recording; • quality control.
 5. Questions for self-assessment: • stages of production; • clinic and laboratory; • complications.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 14: Removable Plate Dentures: Design and Elements

1. Objective of the lesson: To study the design of removable plate dentures.
2. Educational technologies
 - Pre-test
 - Analysis of structures
 - Post-test
3. Basic concepts:• denture base;• artificial teeth;• clasps;• fixation;• retention.
4. Questions for the lesson: • elements of the prosthesis; • types of structures; • indications; • fixation; • functions.
5. Questions for self-assessment: • structure of the prosthesis; • design elements; • indications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 15: Determining Central Occlusion

1. Objective of the lesson: To study methods for determining central occlusion.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • central occlusion; • bite; • articulation; • occlusal contacts; • bite registration.
4. Questions for the lesson: • methods of determination; • clinical signs; • errors; • bite fixation; • meaning.



5. Questions for self-control: • definition of the CO; • registration methods; • errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 16: Clasp Dentures and Their Elements

1. Objective of the lesson: To study the design of clasp dentures and their elements.
2. Educational technologies
 - Pre-test
 - Analysis of structures
 - Post-test
3. Basic concepts: • arch; • clasps; • supporting elements; • fixation; • clasp denture.
4. Questions for the lesson: • design of the clasp; • elements; • indications; • advantages; • disadvantages.
5. Questions for self-assessment: • elements of a clasp denture; • indications; • functions of the structure.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 17: Fitting and Adjusting Dentures

1. Objective of the lesson: To study the stages of fitting and correction of dentures.
2. Educational technologies
 - Pre-test
 - Clinical practice
 - Post-test
3. Basic concepts: • fitting of the prosthesis; • occlusion; • correction; • adaptation; • fixation.
4. Questions for the lesson: • fitting stages; • identifying errors; • correction; • occlusion check; • patient adaptation.
5. Questions for self-control: • purpose of fitting; • correction methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 18: Evaluation of Orthopedic Treatment Outcomes. Final Assessment

1. Objective of the lesson: To assess knowledge and practical skills in orthopedic dentistry.
2. Educational technologies
 - Testing
 - Oral survey
 - Solving clinical problems
3. Basic concepts: • treatment results; • quality of prosthetics; • functional assessment; • aesthetics; • occlusion.
4. Questions for the lesson: • evaluation of results; • complications; • error analysis; • functional diagnostics; • clinical cases.
5. Questions for self-assessment: • criteria for treatment evaluation; • prosthetic errors; • quality of designs.
6. Venue: Moskovskaya 172, Department of Dentistry

Thematic plan of practical classes for the 7th semester

Lesson Topic 1: Organizing an Orthopedic Office. Asepsis and Antisepsis

1. Objective of the lesson: To study the organization of work in an orthopedic office, the principles of asepsis and antisepsis in dentistry.
2. Educational technologies
 - Pre-test
 - Demonstration
 - Post-test
3. Basic concepts: • office organization; • sterilization of instruments; • asepsis; • antisepsis; • infection safety.
4. Questions for the lesson: • organization of the workplace; • rules of asepsis; • methods of antisepsis; • instrument processing; • infection prevention.
5. Questions for self-assessment: • principles of asepsis; • sterilization methods; • requirements for the office.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 2: Examination of the patient, collecting anamnesis, filling out medical documentation

1. Objective of the lesson: To study methods of patient examination and rules for completing medical documentation.
2. Educational technologies
 - Pre-test
 - Working with the patient
 - Post-test
3. Key concepts:• anamnesis;• patient complaints;• medical record;• clinical examination;• documentation.
4. Questions for the lesson: • structure of anamnesis; • stages of examination; • preparation of documentation; • the importance of medical history; • filling errors.
5. Questions for self-assessment: • the importance of anamnesis; • rules for filling out; • stages of examination.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 3: Classification of Dental Defects (according to Kennedy, E.D. Kuleshov, and others)

1. Objective of the lesson: To study the classification of dental defects and their clinical significance.
2. Educational technologies
 - Pre-test
 - Analysis of diagrams
 - Post-test
3. Basic concepts:• Kennedy classification;• dental defects;• partial edentia;• groups of defects;• clinical significance.
4. Questions for the lesson: • Kennedy classification; • Kuleshov classification; • types of defects; • clinical significance; • choice of treatment.
5. Questions for self-assessment: • types of defects; • differences in classifications; • indications for prosthetics.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 4: Preparation for a Stamped Crown


1. Objective of the lesson: To study the technique of preparing teeth for stamped crowns.
2. Educational technologies
 - Pre-test
 - Practice on models
 - Post-test
3. Basic concepts: • stamped crown; • tissue reduction; • shoulder; • tooth stump; • retention.
4. Questions for the lesson: • stages of preparation; • instruments; • requirements for the stump; • errors; • indications.
5. Questions for self-assessment: • preparation features; • requirements for tooth shape; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson topic 5: Preparation for a cast crown

1. Objective of the lesson: To study the features of preparation for cast crowns.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • cast crown; • shoulder; • anatomical shape; • retention; • preparation.
4. Questions for the lesson: • stages of preparation; • differences from stamped crowns; • requirements; • errors; • indications.
5. Questions for self-assessment: • features of cast crowns; • preparation technique; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 6: Preparation for a Metal-Ceramic Crown

1. Objective of the lesson: To study the features of preparation for metal-ceramic structures.

	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"

2. Educational technologies

- Pre-test
- Practice
- Post-test

3. Basic concepts: • metal ceramics; • ledge; • aesthetic zone; • frame; • cladding.

4. Questions for the lesson: • stages of preparation; • types of ledges; • requirements; • errors; • indications.

5. Questions for self-assessment: • difference from other crowns; • preparation technique; • complications.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 7: Making a Temporary Crown

1. Objective of the lesson: To study the technique of making temporary crowns.

2. Educational technologies

- Pre-test
- Practice
- Post-test

3. Basic concepts: • temporary crowns; • plastics; • tooth protection; • aesthetics; • tissue adaptation.

4. Questions for the lesson: • manufacturing methods; • materials; • indications; • fixation; • errors.

5. Questions for self-assessment: • the meaning of temporary crowns; • stages of production; • complications.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 8: Impressions: Anatomical, Functional, Two-Stage

1. Objective of the lesson: To study the types of impressions and methods of obtaining them.

2. Educational technologies

- Pre-test



- Practice
 - Post-test
3. Basic concepts: • anatomical impression; • functional impression; • two-stage impression; • impression materials; • accuracy.
 4. Questions for the lesson: • types of impressions; • techniques of obtaining; • materials; • errors; • indications.
 5. Questions for self-control: • differences in prints; • stages of obtaining; • requirements.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 9: Determining the Central Relation of the Jaws

1. Objective of the lesson: To study methods for determining the central relationship of the jaws.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • centric relation; • occlusion; • bite; • registration; • articulation.
4. Questions for the lesson: • methods of determination; • clinical signs; • errors; • recording; • meaning.
5. Questions for self-control: • difference between the central control system and the central control system; • registration methods; • errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 10: Preparing Teeth with High Attrition

1. Objective of the lesson: To study the features of orthopedic treatment for increased tooth wear.
2. Educational technologies
 - Pre-test
 - Clinical cases
 - Post-test



3. Basic concepts: • tooth abrasion; • reduction in bite height; • occlusion; • restoration; • prosthetics.
4. Questions for the lesson: • causes of wear; • treatment methods; • restoration of bite height; • choice of design; • planning.
5. Questions for self-control: • types of abrasion; • recovery methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 11: Modeling Wax Reproductions of Crowns

1. Objective of the lesson: To study the stages of wax modeling of crowns.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • wax model; • anatomical form; • modeling; • framework; • occlusion.
4. Questions for the lesson: • stages of modeling; • tools; • requirements; • errors; • meaning.
5. Questions for self-control: • modeling technique; • tooth anatomy; • mistakes.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 12: Fitting a Cast Structure

1. Objective of the lesson: To study the fitting stage of cast orthopedic structures.
2. Educational technologies
 - Pre-test
 - Clinical practice
 - Post-test
3. Basic concepts: • cast construction; • fit; • occlusion; • correction; • fixation.
4. Questions for the lesson: • fitting stages; • checking the fit; • errors; • correction; • fixation.
5. Questions for self-control: • quality criteria; • fitting errors; • complications.



6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 13: Fixation of Permanent Orthopedic Structures

1. Objective of the lesson: To study methods of fixing permanent orthopedic structures.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • cements; • fixation; • adhesion; • insulation; • occlusion.
4. Questions for the lesson: • stages of fixation; • types of cements; • technique; • errors; • control.
5. Questions for self-control: • types of fixation; • choice of cement; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 14: Dissection Errors – Model Analysis

1. Objective of the lesson: To study typical errors in tooth preparation and methods of their correction.
2. Educational technologies
 - Pre-test
 - Analysis of models
 - Post-test
3. Basic concepts: • preparation errors; • tooth overheating; • insufficient reduction; • shoulder; • correction.
4. Questions for the lesson: • types of errors; • reasons; • consequences; • correction; • prevention.
5. Questions for self-control: • basic mistakes; • correction methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 15: Features of Restoration of the Front Group of Teeth

1. Objective of the lesson: To study the features of prosthetics of the frontal group of teeth.
2. Educational technologies
 - Pre-test
 - Clinical cases
 - Post-test
3. Basic concepts: • aesthetics; • front teeth; • veneers; • crowns; • color and shape.
4. Questions for the lesson: • features of the frontal group; • aesthetic requirements; • choice of design; • materials; • planning.
5. Questions for self-control: • aesthetic criteria; • restoration methods; • errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 16: Contact and Occlusion Control

1. Objective of the lesson: To study methods of controlling occlusal contacts.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • occlusion; • articulation; • contact points; • bite; • correction.
4. Questions for the lesson: • control methods; • occlusal contacts; • errors; • correction; • meaning.
5. Questions for self-control: • types of occlusion; • testing methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 17: Analysis of Clinical Cases

1. Objective of the lesson: To study the principles of clinical case analysis in orthopedic dentistry.
2. Educational technologies



- Pre-test
 - Case studies
 - Post-test
3. Key concepts: • clinical case; • diagnostics; • treatment plan; • choice of design; • treatment errors.
 4. Questions for the lesson: • case analysis; • diagnosis; • treatment planning; • errors; • correction.
 5. Questions for self-assessment: • structure of analysis; • clinical thinking; • choice of treatment.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 18: Final Assessment

1. Objective of the lesson: Assessment of knowledge and practical skills in orthopedic dentistry.
2. Educational technologies
 - Testing
3. Basic concepts: • diagnostics; • prosthetics; • occlusion; • constructions; • clinical thinking.
4. Questions for the lesson: • theoretical questions; • clinical tasks; • treatment methods; • errors; • diagnostics.
5. Questions for self-assessment: • main sections of the course; • methods of prosthetics; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Thematic plan of practical classes for the 8th semester

Lesson Topic 1: Diagnostics of Partial and Complete Adentia

1. Objective of the lesson: To study methods of diagnosing patients with partial and complete edentia and the specifics of treatment planning.
2. Educational technologies
 - Pre-test
 - Clinical analysis
 - Post-test



3. Basic concepts: • partial edentia; • complete edentia; • classification of defects; • clinical examination; • treatment plan.
4. Questions for the lesson: • diagnostic methods; • features of partial edentia; • features of complete edentia; • choice of prosthesis; • clinical planning.
5. Questions for self-control: • types of adentia; • stages of diagnostics; • planning principles.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 2: Making a Custom Spoon

1. Objective of the lesson: To study the technique of making a custom impression tray.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • individual tray; • impression materials; • tray boundaries; • modeling; • functional tests.
4. Questions for the lesson: • indications for production; • stages of production; • materials; • edge correction; • errors.
5. Questions for self-assessment: • purpose of the spoon; • manufacturing technique; • requirements.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 3: Taking a Functional Impression

1. Objective of the lesson: To study the technique of obtaining a functional impression.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • functional impression; • boundaries of the prosthesis; • functional movements; • impression materials; • accuracy of the impression.




4. Questions for the lesson: • removal technique; • materials; • functional tests; • errors; • meaning.
5. Questions for self-assessment: • differences in a functional impression; • stages of obtaining; • requirements.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 4: Construction of Occlusal Ridges

1. Objective of the lesson: To study the technique of making occlusal rims.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • occlusal ridges; • bite; • bite height; • wax base; • registration.
4. Questions for the lesson: • purpose of rollers; • stages of production; • determination of bite height; • errors; • clinical significance.
5. Questions for self-control: • the role of rollers; • manufacturing technique; • mistakes.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 5: Determining the Central Relation of the Jaws

1. Objective of the lesson: To study methods for determining the central relationship of the jaws.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • centric relation; • occlusion; • bite registration; • articulation; • landmarks.
4. Questions for the lesson: • methods of determination; • clinical guidelines; • errors; • recording; • meaning.
5. Questions for self-control: • difference between the central control system and the central control system; • registration methods; • errors.

	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"

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 6: Determining the Central Relation of the Jaws (Re-fixation)

1. Objective of the lesson: To consolidate the skills of determining the central relationship of the jaws.
2. Educational technologies
 - Pre-test
 - Practice
 - Analysis of errors
3. Basic concepts: • centric relation; • occlusal contacts; • bite registration; • fixation; • detection errors.
4. Questions for the lesson: • repeated methods of determination; • accuracy control; • error correction; • clinical cases; • significance.
5. Questions for self-control: • technique of definition; • common mistakes; • methods of correction.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 7: Setting Teeth in Wax

1. Objective of the lesson: To study the stage of placing artificial teeth in a wax base.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • teeth positioning; • occlusion; • wax model; • articulator; • aesthetics.
4. Questions for the lesson: • rules of placement; • types of teeth; • occlusal relationships; • errors; • aesthetics.
5. Questions for self-control: • principles of placement; • anatomy of teeth; • mistakes.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 8: Trying on a Wax Model

1. Objective of the lesson: To study the stage of trying on a wax prosthesis structure.
2. Educational technologies
 - Pre-test
 - Clinical practice
 - Post-test
3. Basic concepts: • wax model; • fitting; • occlusion; • aesthetics; • correction.
4. Questions for the lesson: • fitting stages; • occlusion check; • aesthetic assessment; • errors; • correction.
5. Questions for self-assessment: • evaluation criteria; • errors; • correction methods.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 9: Final Fixation of a Partial Denture

1. Objective of the lesson: To study the technique of fixing partial removable dentures.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • fixation of the prosthesis; • adhesion; • supporting teeth; • clasps; • stability.
4. Questions for the lesson: • stages of fixation; • types of fixation; • cements; • errors; • control.
5. Questions for self-control: • methods of fixation; • choice of method; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 10: Design of a Clasp Denture

1. Objective of the lesson: To study the principles of designing a clasp denture.
2. Educational technologies



- Pre-test
 - Analysis of diagrams
 - Post-test
3. Basic concepts: • clasp denture; • arch; • support; • clasp system; • planning.
 4. Questions for the lesson: • design stages; • choice of design; • supporting teeth; • load distribution; • errors.
 5. Questions for self-assessment: • design principles; • design elements; • indications.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 11: Laboratory Stage: Arch, Clasps, Saddle

1. Objective of the lesson: To study the laboratory stages of manufacturing a clasp denture.
2. Educational technologies
 - Pre-test
 - Laboratory work
 - Post-test
3. Basic concepts: • metal arch; • clasps; • prosthesis saddle; • frame; • casting.
4. Questions for the lesson: • manufacturing stages; • materials; • casting technique; • errors; • quality control.
5. Questions for self-control: • elements of the clasp; • laboratory stages; • errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 12: Fitting and Correction of a Clasp Denture

1. Objective of the lesson: To study the stage of fitting and correction of a clasp denture.
2. Educational technologies
 - Pre-test
 - Clinical practice
 - Post-test
3. Basic concepts: • clasp denture; • fitting; • clasps; • occlusion; • correction.



4. Questions for the lesson: • fitting stages; • checking the fixation; • correction; • errors; • adaptation.
5. Questions for self-assessment: • evaluation criteria; • errors; • correction methods.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 13: Care of Removable Dentures

1. Objective of the lesson: To study the rules for caring for removable dentures.
2. Educational technologies
 - Pre-test
 - Briefing
 - Post-test
3. Basic concepts: • hygiene of dentures; • cleaning; • disinfection; • care; • adaptation.
4. Questions for the lesson: • care rules; • hygiene products; • complications; • prevention; • recommendations for the patient.
5. Questions for self-control: • care of dentures; • hygiene rules; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 14: Clinical Analysis: Clasp Denture

1. Objective of the lesson: To study clinical cases of the use of clasp dentures.
2. Educational technologies
 - Pre-test
 - Case studies
 - Post-test
3. Basic concepts: • clinical case; • clasp denture; • diagnostics; • treatment plan; • errors.
4. Questions for the lesson: • case analysis; • choice of design; • planning; • errors; • correction.
5. Questions for self-assessment: • clinical analysis; • choice of treatment; • complications.



6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 15: Post-Prosthetic Adaptation

1. Objective of the lesson: To study the process of patient adaptation to removable dentures.
2. Educational technologies
 - Pre-test
 - Clinical observation
 - Post-test
3. Basic concepts: • adaptation; • habituation; • discomfort; • correction; • functional adaptation.
4. Questions for the lesson: • stages of adaptation; • patient complaints; • prosthesis correction; • psychological factor; • adaptation timeframe.
5. Questions for self-control: • stages of adaptation; • causes of discomfort; • correction.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 16: Testing Prosthesis Fixation and Function

1. Objective of the lesson: To study methods for assessing the fixation and function of removable dentures.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • fixation; • stability; • occlusion; • functionality; • prosthesis testing.
4. Questions for the lesson: • verification methods; • functional tests; • assessment of fixation; • errors; • correction.
5. Questions for self-assessment: • evaluation criteria; • testing methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 17: Mistakes in Teeth Arrangement

1. Objective of the lesson: To study typical mistakes when installing artificial teeth.
2. Educational technologies
 - Pre-test
 - Analysis of models
 - Post-test
3. Basic concepts: • teeth placement; • occlusion; • aesthetics; • errors; • correction.
4. Questions for the lesson: • types of errors; • reasons; • consequences; • correction; • prevention.
5. Questions for self-control: • basic mistakes; • correction methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 18: Final Assessment

1. Objective of the lesson: Assessment of knowledge and practical skills in removable prosthetics.
2. Educational technologies
 - Testing
 - Oral survey
 - Clinical tasks
3. Basic concepts: • removable dentures; • diagnostics; • occlusion; • fixation; • adaptation.
4. Questions for the lesson: • theoretical questions; • clinical tasks; • errors; • planning; • treatment methods.
5. Questions for self-assessment: • basics of prosthetics; • errors; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Thematic plan for practical classes



Lesson Topic 1: Diagnostics of Partial and Complete Adentia

1. Objective of the lesson: To study diagnostic methods for patients with partial and complete edentia and to determine the specifics of treatment planning.
2. Educational technologies
 - Pre-test
 - Clinical analysis
 - Post-test
3. Basic concepts: • partial adentia; • complete adentia; • classification of defects; • functional disorders; • prosthetic planning.
4. Questions for the lesson: • diagnostic methods; • features of adentia; • clinical examination; • choice of prosthesis design; • stages of treatment.
5. Questions for self-assessment: • types of adentia; • stages of diagnosis; • indications for prosthetics.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 2: Making a Custom Spoon

1. Objective of the lesson: To study the technique of making a custom impression tray.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • individual tray; • impression materials; • prosthesis boundaries; • modeling; • functional tests.
4. Questions for the lesson: • indications; • manufacturing stages; • materials; • edge correction; • errors.
5. Questions for self-assessment: • purpose of the spoon; • manufacturing technique; • requirements.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 3: Taking a Functional Impression

1. Objective of the lesson: To study the technique of obtaining a functional impression.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • functional impression; • individual tray; • boundaries of the prosthesis; • functional movements; • impression materials.
4. Questions for the lesson: • technique of obtaining; • materials; • functional tests; • errors; • the importance of the method.
5. Questions for self-assessment: • differences in functional impression; • stages; • requirements.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 4: Construction of Occlusal Ridges

1. Objective of the lesson: To study the technique of making occlusal rims.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts:• occlusal rims;• wax base;• bite height;• occlusion registration;• articulation.
4. Questions for the lesson: • purpose of rollers; • stages of production; • determination of bite height; • errors; • clinical significance.
5. Questions for self-control:• the role of rollers;
 - manufacturing technique;• errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 5: Determining the Central Relation of the Jaws

1. Objective of the lesson: To study methods for determining the central relationship of the jaws.



2. Educational technologies

- Pre-test
- Practice
- Post-test

3. Basic concepts: • centric relation; • occlusion; • bite; • registration; • articulation.

4. Questions for the lesson: • methods of determination; • clinical guidelines; • errors; • recording; • meaning.

5. Questions for self-control: • difference between the central control system and the central control system; • registration methods; • errors.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 6: Determining the Central Relationship of the Jaws (Reinforcement)

1. Objective of the lesson: To consolidate the skills of determining the central relationship of the jaws.

2. Educational technologies

- Pre-test
- Practice
- Analysis of errors

3. Basic concepts: • centric relation; • occlusion; • bite registration; • articulation; • detection errors.

4. Questions for the lesson: • repetition of the methodology; • accuracy control; • error correction; • clinical cases; • significance.

5. Questions for self-control: • technique of definition; • errors; • correction.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 7: Setting Teeth in Wax

1. Objective of the lesson: To study the technique of placing artificial teeth in a wax structure.

2. Educational technologies



- Pre-test
 - Practice
 - Post-test
3. Basic concepts: • teeth positioning; • wax model; • occlusion; • articulator; • aesthetics.
 4. Questions for the lesson: • rules of placement; • types of teeth; • occlusal contacts; • errors; • aesthetics.
 5. Questions for self-control: • principles of placement; • anatomy of teeth; • mistakes.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 8: Trying on a Wax Model

1. Objective of the lesson: To study the stage of trying on a wax model of a prosthesis.
2. Educational technologies
 - Pre-test
 - Clinical practice
 - Post-test
3. Basic concepts: • wax model; • fitting; • occlusion; • aesthetics; • correction.
4. Questions for the lesson: • fitting stages; • occlusion check; • aesthetic assessment; • errors; • correction.
5. Questions for self-assessment: • evaluation criteria; • errors; • correction methods.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 9: Final Fixation of a Partial Denture

1. Objective of the lesson: To study the technique of fixing a partial removable denture.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test



3. Basic concepts: • fixation; • clasps; • supporting teeth; • stability; • cements.
4. Questions for the lesson: • stages of fixation; • types of fixation; • materials; • errors; • control.
5. Questions for self-control: • methods of fixation; • choice of method; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 10: Design of a Clasp Denture

1. Objective of the lesson: To study the principles of designing a clasp denture.
2. Educational technologies
 - Pre-test
 - Analysis of diagrams
 - Post-test
3. Basic concepts: • clasp denture; • arch; • clasp system; • supporting teeth; • load distribution.
4. Questions for the lesson: • design stages; • choice of design; • support; • biomechanics; • errors.
5. Questions for self-assessment: • design principles; • design elements; • indications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 11: Laboratory Stage: Arch, Clasps, Saddle

1. Objective of the lesson: To study the laboratory stages of manufacturing a clasp denture.
2. Educational technologies
 - Pre-test
 - Laboratory work
 - Post-test
3. Basic concepts: • arch; • clasps; • saddle; • frame; • casting.
4. Questions for the lesson: • manufacturing stages; • materials; • casting technology; • errors; • quality control.
5. Questions for self-control: • elements of the clasp; • laboratory stages; • errors.



6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 12: Fitting and Correction of a Clasp Denture

1. Objective of the lesson: To study the stage of fitting and correction of a clasp denture.
2. Educational technologies
 - Pre-test
 - Clinical practice
 - Post-test
3. Basic concepts: • clasp denture; • fixation; • clasps; • occlusion; • correction.
4. Questions for the lesson: • fitting stages; • checking the fixation; • correction; • errors; • adaptation.
5. Questions for self-control: • evaluation criteria; • errors; • correction.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 13: Care of Removable Dentures

1. Objective of the lesson: To study the rules for caring for removable dentures.
2. Educational technologies
 - Pre-test
 - Briefing
 - Post-test
3. Basic concepts: • hygiene of dentures; • cleaning; • disinfection; • care; • adaptation.
4. Questions for the lesson: • care rules; • hygiene products; • prevention of complications; • recommendations for the patient; • adaptation.
5. Questions for self-control: • care of dentures; • hygiene rules; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 14: Clinical Analysis: Clasp Denture


1. Objective of the lesson: To study clinical cases of the use of clasp dentures.
2. Educational technologies
 - Pre-test
 - Case studies
 - Post-test
3. Basic concepts: • clinical case; • clasp denture; • diagnostics; • treatment plan; • errors.
4. Questions for the lesson: • case analysis; • choice of design; • planning; • errors; • correction.
5. Questions for self-assessment: • clinical analysis; • choice of treatment; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 15: Post-Prosthetic Adaptation

1. Objective of the lesson: To study the process of patient adaptation to removable dentures.
2. Educational technologies
 - Pre-test
 - Clinical observation
 - Post-test
3. Basic concepts: • adaptation; • habituation; • discomfort; • correction; • functional adaptation.
4. Questions for the lesson: • stages of adaptation; • patient complaints; • correction; • psychological factor; • timing.
5. Questions for self-control: • stages of adaptation; • causes of discomfort; • correction.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 16: Testing Prosthesis Fixation and Function

1. Objective of the lesson: To study methods for assessing the fixation and function of a removable denture.

	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"

2. Educational technologies

- Pre-test
- Practice
- Post-test

3. Basic concepts: • fixation; • stability; • occlusion; • functionality; • testing.

4. Questions for the lesson: • verification methods; • functional tests; • assessment of fixation; • errors; • correction.

5. Questions for self-assessment: • evaluation criteria; • testing methods; • complications.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 17: Mistakes in Teeth Arrangement

1. Objective of the lesson: To study typical mistakes when installing artificial teeth.

2. Educational technologies

- Pre-test
- Analysis of models
- Post-test

3. Basic concepts: • teeth placement; • occlusion; • aesthetics; • errors; • correction.

4. Questions for the lesson: • types of errors; • reasons; • consequences; • correction; • prevention.

5. Questions for self-control: • basic mistakes; • correction methods; • complications.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 18: Final Assessment

1. Objective of the lesson: Assessment of knowledge and practical skills in removable prosthetics.

2. Educational technologies

- Testing
- Oral survey



- Clinical tasks
- 3. Basic concepts: • removable dentures; • diagnostics; • occlusion; • fixation; • adaptation.
- 4. Questions for the lesson: • theory; • clinical tasks; • errors; • treatment methods; • planning.
- 5. Questions for self-assessment: • basics of prosthetics; • errors; • complications.
- 6. Venue: Moskovskaya 172, Department of Dentistry

Thematic plan of practical classes for the 10th semester

Lesson Topic 1: Functional Diagnostics of the TMJ

1. Objective of the lesson: To study the methods of functional diagnostics of the temporomandibular joint (TMJ) and assessment of its condition during orthopedic treatment.
2. Educational technologies
 - Pre-test
 - Clinical diagnostics
 - Post-test
3. Basic concepts: • TMJ; • articular disc; • movements of the lower jaw; • occlusion; • functional disorders.
4. Questions for the lesson: • methods of TMJ diagnostics; • clinical signs of dysfunction; • palpation and auscultation of the joint; • instrumental methods; • the importance of diagnostics.
5. Questions for self-assessment: • anatomy of the TMJ; • functions of the joint; • main pathologies.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 2: Removing the bite in case of destruction of the dentition

1. Objective of the lesson: To study methods of bite registration in cases of significant loss of teeth.
2. Educational technologies
 - Pre-test
 - Practice



- Post-test
3. Basic concepts: • occlusion; • bite ridges; • bite registration; • centric relation; • edentia.
 4. Questions for the lesson: • methods of taking bite measurements; • materials; • errors; • clinical guidelines; • fixation.
 5. Questions for self-control: • stages of registration; • types of bite; • errors.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 3: Making Mouthguards and Splints

1. Objective of the lesson: To study the types of mouth guards and splints and their clinical application.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • mouth guards; • occlusal splints; • stabilization; • bruxism; • unloading of the TMJ.
4. Questions for the lesson: • types of tires; • indications; • manufacturing; • materials; • correction.
5. Questions for self-control: • purpose of mouth guards; • types of structures; • errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 4: Orthopedic Treatment for Dental Injuries

1. Objective of the lesson: To study methods of orthopedic rehabilitation for traumatic dental injuries.
2. Educational technologies
 - Pre-test
 - Clinical analysis
 - Post-test
3. Basic concepts: • dental trauma; • splinting; • crown restoration; • temporary structures; • rehabilitation.



4. Questions for the lesson: • types of injuries; • treatment methods; • orthopedic structures; • stages of recovery; • prognosis.
5. Questions for self-assessment: • classification of injuries; • treatment methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 5: Managing Patients with Complete Rehabilitation

1. Objective of the lesson: To study an integrated approach to complete orthopedic rehabilitation of patients.
2. Educational technologies
 - Pre-test
 - Clinical analysis
 - Post-test
3. Basic concepts: • rehabilitation; • occlusion; • functional restoration; • staged treatment; • prosthetics.
4. Questions for the lesson: • stages of rehabilitation; • diagnostics; • treatment plan; • interdisciplinary approach; • prognosis.
5. Questions for self-assessment: • principles of rehabilitation; • stages of treatment; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 6: Integrated Approach: Periodontology + Orthopedics

1. Objective of the lesson: To study the interaction of orthopedic and periodontal treatment.
2. Educational technologies
 - Pre-test
 - Clinical analysis
 - Post-test
3. Basic concepts: • periodontium; • tooth mobility; • splinting; • load; • complex treatment.
4. Questions for the lesson: • interaction of disciplines; • indications; • treatment plan; • errors; • prognosis.



5. Questions for self-assessment: • the relationship between periodontology and orthopedics; • treatment methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 7: Creating an Individual Treatment Plan

1. Objective of the lesson: To study the principles of creating an individual orthopedic treatment plan.
2. Educational technologies
 - Pre-test
 - Analysis of clinical cases
 - Post-test
3. Basic concepts: • treatment plan; • diagnostics; • choice of design; • stages; • prognosis.
4. Questions for the lesson: • planning stages; • clinical analysis; • choice of treatment method; • errors; • individualization.
5. Questions for self-assessment: • structure of the treatment plan; • selection criteria; • errors.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 8: Clinical Analysis of a Patient with Occlusion Malocclusion

1. Objective of the lesson: To study clinical cases of occlusion disorders and methods of their correction.
2. Educational technologies
 - Pre-test
 - Case studies
 - Post-test
3. Key concepts: • occlusion; • articulation; • dysfunction; • overload of teeth; • correction.
4. Questions for the lesson: • causes of disorders; • diagnostics; • treatment methods; • errors; • prognosis.
5. Questions for self-control: • types of occlusion disorders; • diagnostics; • correction.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 9: Quality Control of Orthopedic Structures

1. Objective of the lesson: To study methods for assessing the quality of orthopedic structures.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • orthopedic design; • fixation; • occlusion; • adaptation; • quality.
4. Questions for the lesson: • evaluation criteria; • design verification; • functional tests; • errors; • correction.
5. Questions for self-assessment: • quality control; • evaluation criteria; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 10: Mistakes in Rehabilitation of Complex Patients

1. Objective of the lesson: To study typical mistakes in orthopedic rehabilitation.
2. Educational technologies
 - Pre-test
 - Analysis of clinical cases
 - Post-test
3. Basic concepts: • treatment errors; • overload; • occlusion; • prosthetics; • complications.
4. Questions for the lesson: • causes of errors; • diagnostics; • prevention; • correction; • prognosis.
5. Questions for self-control: • typical mistakes; • ways to correct them; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry



Lesson Topic 11: Fitting and Correcting Designs at the Final Stage

1. Objective of the lesson: To study the stage of fitting and final correction of orthopedic structures.
2. Educational technologies
 - Pre-test
 - Practice
 - Post-test
3. Basic concepts: • fitting; • occlusion; • fixation; • correction; • adaptation.
4. Questions for the lesson: • fitting stages; • checking contacts; • correction; • errors; • final fixation.
5. Questions for self-assessment: • evaluation criteria; • errors; • correction methods.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 12: Prosthetics for Bite Anomalies

1. Objective of the lesson: To study the features of orthopedic treatment for malocclusion.
2. Educational technologies
 - Pre-test
 - Clinical analysis
 - Post-test
3. Basic concepts: • bite anomalies; • occlusion; • deformation; • prosthetics; • correction.
4. Questions for the lesson: • types of anomalies; • diagnostics; • treatment methods; • errors; • prognosis.
5. Questions for self-assessment: • classification of anomalies; • treatment methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 13: Resolving Failed Orthopedic Treatments

1. Objective of the lesson: To study methods of correction and re-treatment in case of unsuccessful prosthetics.



2. Educational technologies

- Pre-test
- Case studies
- Post-test

3. Basic concepts: • complications; • alteration of prostheses; • correction; • diagnostics of errors; • rehabilitation.

4. Questions for the lesson: • reasons for failure; • diagnostics; • methods of correction; • re-treatment; • prognosis.

5. Questions for self-control: • types of errors; • methods of correction; • complications.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 14: Evaluation of Results: Functional and Aesthetic Aspects

1. Objective of the lesson: To study the criteria for evaluating the results of orthopedic treatment.

2. Educational technologies

- Pre-test
- Clinical analysis
- Post-test

3. Basic concepts: • function; • aesthetics; • occlusion; • chewing efficiency; • treatment result.

4. Questions for the lesson: • evaluation criteria; • functional tests; • aesthetic evaluation; • errors; • forecast.

5. Questions for self-assessment: • performance indicators; • evaluation methods; • complications.

6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 15: Preparing a Clinical Case Presentation

1. Objective of the lesson: To study the rules for preparing a clinical case for presentation.

2. Educational technologies

- Pre-test



- Practice
 - Post-test
3. Key concepts: • clinical case; • diagnostics; • treatment plan; • result; • presentation.
 4. Questions for the lesson: • presentation structure; • choice of material; • design; • case analysis; • errors.
 5. Questions for self-assessment: • stages of preparation; • structure of the report; • design.
 6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 16: Rehearsal of a Public Defense

1. Objective of the lesson: Preparation for public defense of a clinical case.
2. Educational technologies
 - Training
 - Presentation
 - Feedback
3. Basic concepts: • defense of work; • report; • argumentation; • presentation; • communication.
4. Questions for the lesson: • structure of the speech; • answers to questions; • mistakes; • confidence; • speech technique.
5. Questions for self-control: • preparation for defense; • mistakes; • communication.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 17: Consultations with a Teacher on a Thesis

1. Objective of the lesson: Discussion and correction of the clinical case and thesis.
2. Educational technologies
 - Individual consultation
 - Analysis of the work
 - Correction
3. Key concepts: • thesis; • clinical case; • analysis; • errors; • correction.



4. Questions for the lesson: • analysis of work; • correction of errors; • recommendations; • structure of work; • improvement.
5. Questions for self-assessment: • requirements for the thesis; • structure; • design.
6. Venue: Moskovskaya 172, Department of Dentistry

Lesson Topic 18: Final Assessment

1. Objective of the lesson: Assessment of theoretical and practical knowledge in the course of orthopedic rehabilitation.
2. Educational technologies
 - Testing
 - Oral survey
 - Clinical tasks
3. Basic concepts: • orthopedic rehabilitation; • occlusion; • diagnostics; • treatment; • complications.
4. Questions for the lesson: • course theory; • clinical cases; • diagnostics; • treatment; • errors.
5. Questions for self-assessment: • basics of orthopedics; • treatment methods; • complications.
6. Venue: Moskovskaya 172, Department of Dentistry

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;

Students 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 range 9-10 printed 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 least 10 bibliographic 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;

	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"

- 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.

	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"

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.
- **Lacunae 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.
- **Extracoronary 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).

	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"

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.*