	Educational institution "Royal Metropolitan University"
	Quality Management System Teaching and Methodological Complex for the Course "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
"GERONTOSTOMATOLOGY"**

of the main educational program

in the specialty **560004 "Dentistry" (for international students)**

Graduate qualification: Specialist (Doctor)

Bishkek 2025



Educational institution
"Royal Metropolitan University"

Quality Management System
Educational and Methodological Complex of the discipline "Geriatric 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

**WORKING PROGRAM OF THE DISCIPLINE
"GERONTOSTOMATOLOGY"**

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


Graduate Qualification: Specialist (Doctor)

Full-time program

Course	5
Semester	9
Credit	9
Total credits in the curriculum	2
Total hours in the curriculum	60

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

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

 (signature)

Bishkek 2025



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

The work program for the course "Geriatric Dentistry" has been developed in accordance with the requirements of the State Educational Standard for Higher Professional 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

Beutybaeva N. K.

(Full Name)

[Signature]

(signature)

"06" 09 2025

The work program has been approved by the head of the core educational program for specialty 560004 "Dentistry"

Head of the Main Educational Program

[Signature]

(Full Name)

Soparova A. Z.

(Signature)

"06" 09 2025

External review provided on

M. D., professor Icheyskhuafar D. B.

"4" 09 2025 (review attached)

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

Q&M Department

Nambesaliev U. Z.

(Full Name)

[Signature]

(Signature)

"06" 09 2025

РЕЦЕНЗИЯ

Рецензируемая рабочая программа дисциплины (РПД) «Геронтостоматология» 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 включает контрольные вопросы, ситуационные задачи и тесты. Так же в РПД «Геронтостоматология» приведены основная и дополнительная рекомендуемые литературные источники, приведен перечень информационных справочных ресурсов и программного обеспечения. В РПД «Геронтостоматология» описывается материально – техническое обеспечение дисциплины в РМУ и даются методические указания для обучающихся по освоению дисциплины.

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

Рецензент:

д.м.н., и.о. профессора кафедры

хирургической стоматологии

и ЧЛХ КГМА

« 4 » 09 2019



Шаяхметов Д. Б.





Content

1. Work program of the academic discipline	5
1.1.Explanatory note.....	5
1.2. Recommended educational technologies.....	13
1.3. Scope of the discipline and types of academic work.....	14
1.4. Structure of the discipline.....	14
1.4.1. Thematic plan for studying the discipline (by semester)	14
1.4.2. Educational and methodological support for independent work of students.....	19
1.4.3. Assessment tools for monitoring academic performance.....	24
1.4.4. Course policy and assessment criteria.....	35
1.4.5. Educational, methodological and informational support of the discipline.....	38
1.4.6. Material and technical support of discipline.....	39
1.4.7. Student research work.....	41
2. Educational and methodological materials.....	42
2.1. Lecture notes.....	42
2.2. Development of practical/seminar/laboratory classes.....	89
3. Methodological recommendations/instructions for students.....	102
3.1. Methodological recommendations for students on studying the discipline..	102
3.2. Methodological recommendations for completing independent work.....	104
3.3. Methodological recommendations for the implementation of practical/seminar classes, laboratory work.....	104
3.4. Guidelines for completing abstracts, reports, term papers, and final qualifying works.....	105
3.5. Guidelines for preparation for final certification.....	106
3.6. Methodological recommendations for student research work.....	107
4.Glossary.....	108
4. Reference materials and appendices.....	124



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
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 is The mission of Royal Metropolitan University is to improve the health and quality of life of the population through the high-quality training of medical personnel capable of intercultural interaction, based on the integration of advanced scientific knowledge, innovation, and high standards of practice in an environment of unity of education, science, and clinical activity.

Abstract of the academic discipline "Gerontostomatology" is a course aimed at developing students' theoretical knowledge and practical skills necessary to provide dental care to elderly and senile patients. This course examines age-related changes in the organs and tissues of the oral cavity, the characteristics of dental diseases in older individuals, and the impact of general medical conditions on the dental system.

This course examines the physiological and pathological processes of aging, as well as the structure and function of teeth, periodontium, and oral mucosa in elderly patients. Particular attention is paid to the relationship between dental and general health, polymorbidity, and the impact of drug therapy on oral health.

This course explores clinical examination methods for elderly patients, taking into account their psychoemotional and physical characteristics, and the principles of developing a comprehensive treatment plan, as well as prevention and rehabilitation. It examines the specifics of therapeutic, surgical, and orthopedic treatment, including prosthetics for complete and partial tooth loss, taking into account age limitations and the body's adaptive capabilities.

"Gerontostomatology" develops students' skills for an individualized approach to elderly patients, the fundamentals of medical ethics and deontology when working with this category of patients, and also promotes the development of clinical thinking and professional competencies aimed at maintaining quality of life and restoring the function and aesthetics of the dental system in older individuals.

The purpose and objectives of the discipline

The purpose of discipline

The main goal of studying the discipline "Gerontostomatology" is to develop in students the theoretical knowledge and practical skills necessary to provide qualified dental care to elderly and senile patients, taking into account age-related changes in the body and the characteristics of the course of dental diseases.



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"

During the training, students acquire knowledge about: age-related anatomical and physiological characteristics of the organs and tissues of the oral cavity; patterns of aging of the dental system and their impact on the functions of the masticatory apparatus; features of the clinical course of dental diseases in elderly and senile people; the relationship of dental pathology with general somatic diseases and polymorbidity; the effect of drugs on the condition of the oral cavity; methods of clinical examination of elderly patients (collection of anamnesis, examination, functional diagnostics taking into account age characteristics); principles of diagnosis, prevention and treatment of dental diseases in this category of patients; features of orthopedic treatment, including prosthetics in case of complete and partial loss of teeth; principles of asepsis, antisepsis, medical ethics and deontology when working with elderly patients.

The course is aimed at developing the following skills in students: → Conduct a comprehensive dental examination of elderly and senile patients; → Take into account age-related changes and concomitant pathology when analyzing clinical data; → Form well-founded diagnostic conclusions and develop an individual treatment plan; → Choose adequate methods of prevention, treatment and rehabilitation; → Carry out orthopedic treatment taking into account the functional capabilities and adaptive reserves of the body; → Build effective and ethically correct interaction with elderly patients.

Particular attention is paid to the development of clinical thinking, taking into account age-related characteristics of the body, polymorbidity and the need for an interdisciplinary approach, as well as the development of skills for comprehensive dental care planning.

Mastering this discipline ensures the development of universal and professional competencies necessary for the further professional activity of a dentist when working with older patients.

Objectives of the discipline

The main objectives of the course "Gerontostomatology" are: → formation of systematic knowledge about the aging processes and their impact on the condition of the oral cavity organs; → study of age-related changes in teeth, periodontium, mucous membrane and bone tissue of the jaws; → mastering the features of diagnostics of dental diseases in elderly and senile patients; → formation of skills of a comprehensive examination taking into account the somatic status and polymorbidity; → acquisition of practical skills of planning and conducting dental treatment in this category of patients; → study of the features of orthopedic treatment and prosthetics in case of complete and partial edentia; → formation of skills in choosing optimal methods of treatment taking into account the general



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"

condition of the patient and the drug therapy; → development of skills in the prevention of dental diseases in the elderly; → mastering the principles of interdisciplinary interaction with doctors of other specialties; → formation of skills of compliance with medical ethics, deontology and a psychological approach when working with elderly patients; → development of readiness for independent professional activity and further education.

The discipline "Gerontostomatology" is included in the elective (or specialized) part of the professional cycle of the educational program in the specialty "Dentistry" (code 560004) and is aimed at training specialists capable of providing high-quality dental care to elderly and senile patients, taking into account modern medical requirements.

The place of the discipline in the structure of the OOP (prerequisites, postrequisites)

The course "Gerontostomatology" is studied by students majoring in Dentistry and is part of the elective (core) section of the educational program in accordance with the requirements of the State Educational Standard of Higher Professional Education. It is a clinical course aimed at deepening knowledge and developing practical skills in providing dental care to elderly and senile patients.

The content of the discipline is based on the knowledge obtained through the study of the following prerequisites: normal and pathological anatomy, normal and pathological physiology, histology, biochemistry, microbiology, pharmacology, propaedeutics of dental diseases, therapeutic dentistry, surgical dentistry, orthopedic dentistry, as well as the fundamentals of internal medicine and geriatrics.

This course develops in-depth knowledge and clinical skills that are necessary for further acquisition of post-requisites: clinical dentistry, implantology, maxillofacial surgery, complex dental rehabilitation, as well as for subsequent professional activity of a dentist in the system of providing care to elderly patients.

The main purpose of this course is to develop students' clinical thinking, taking into account age-related characteristics of the body, the ability to conduct a comprehensive examination of elderly and senile patients, analyze anamnesis and clinical examination data taking into account polymorbidity, and plan individualized dental treatment and rehabilitation.

The program of the discipline includes the following main sections: I. Introduction to gerontostomatology: aging processes, age-related anatomical and physiological changes in the dental system, features of the dental status of elderly patients. II.



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"

Methods of examination and diagnostics: clinical, laboratory and functional research methods taking into account the somatic status, assessment of dental and general health, analysis of risk factors. III. Features of treatment and rehabilitation: therapeutic, surgical and orthopedic treatment in elderly patients, prosthetics for complete and partial edentia, prevention of dental diseases, an interdisciplinary approach.

The overall workload of a course is determined by the curriculum and is typically clinically oriented, with a predominance of practical classes. The curriculum includes lectures, practical classes, and clinical sessions.

Ongoing assessments include testing, situational tasks, clinical case studies, and practical skills assessment. The final assessment is a test or exam in accordance with the curriculum.

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

- Graduate in the 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	Content 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;
SPC-2	able and ready for professional communication techniques; build interpersonal relationships, work in a group, constructively resolve conflict situations, tolerate social, ethnic, religious and cultural differences;
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;



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"

PC-6	able and ready to work with medical and technical equipment used in work with patients, computer equipment, receive information from various sources, apply the capabilities of modern information technologies to solve professional problems;
PC-15	able and willing to collect and record a complete patient medical history, including oral health data;
PC-16	able and ready to make a diagnosis based on the results of clinical laboratory studies of biological materials and taking into account the laws of the course of pathology in organs, systems and the body as a whole;
PC-19	able and ready to diagnose typical dental diseases of the hard and soft tissues of the oral cavity, dentofacial anomalies in patients of all ages;
PC-20	able and ready to analyze and interpret the results of modern diagnostic technologies in children, adolescents and adults for successful treatment and preventive activities. - treatment activities;
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-26	Capable and ready to apply various rehabilitation measures (medical, social and professional) among adults, adolescents and children for the most common dental diseases.
PC-27	Able and prepared to determine indications and contraindications for the use of therapeutic exercise, physical therapy, and non-drug therapy, and to utilize key resort factors in the treatment of adults, adolescents, and children. - educational activities.

LO1:To analyze age-related and professionally-oriented problems in the field of gerontostomatology using fundamental and clinical knowledge about the aging processes of the body.

LO2:Use computer technology and basic software to solve educational and professional problems related to the diagnosis and treatment of dental diseases in elderly patients.

LO3:Apply the principles of bioethics, deontology and medical ethics when working with elderly and senile patients, taking into account their psycho-emotional and social characteristics.

LO4:To effectively communicate professionally with elderly patients, their relatives and medical staff, adhere to medical communication standards and work in an interdisciplinary team.



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"

LO5: Conduct a comprehensive clinical examination of elderly and senile patients, collect an extended anamnesis taking into account polymorbidity and drug therapy, and prepare medical documentation.

LO6: Interpret data from clinical examination and laboratory and instrumental research methods, taking into account age-related changes and concomitant diseases.

LO7: To diagnose dental diseases of the hard and soft tissues of the oral cavity in elderly patients, to identify age-related changes and pathological processes of the dental system.

LO8: Justify the choice of treatment methods and orthopedic structures taking into account age characteristics, the functional state of the body and the patient's adaptive capabilities.

LO9: Apply aseptic and antiseptic methods, comply with sanitary and hygienic requirements and ensure safety when providing dental care to elderly patients.

LO10: Participate in planning comprehensive dental treatment and rehabilitation of elderly patients, including preventive, therapeutic and orthopedic measures.

will know:

→ anatomical, physiological and age-related features of the structure and functioning of organs and tissues of the oral cavity in elderly and senile patients; → patterns of aging processes and their impact on the dental system; → principles of organizing dental care for elderly patients and features of equipping the workplace; → etiology and pathogenesis of the main dental diseases in older age groups; → clinical manifestations of diseases of hard tissues of teeth, periodontium, oral mucosa and dysfunction of the temporomandibular joint in elderly patients; → features of the course of dental diseases in polymorbidity; → the main types of orthopedic structures and indications for their use in elderly patients.

will understand:

→ the importance of preventing dental diseases and dispensary observation of elderly patients; → the role of somatic pathology and drug therapy in the development of dental diseases; → the importance of observing sanitary and epidemiological regulations when working with older patients; → the importance of maintaining medical records taking into account the age characteristics of patients; → mechanisms for the formation of age-related and pathological changes in the dentoalveolar system; → principles of clinical diagnostics, treatment planning and rehabilitation of elderly patients.



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"

will be able to use:

→ methods of general and dental examination of elderly and senile patients; → basic and additional methods of diagnosing dental diseases taking into account age-related changes; → dental materials, instruments and equipment used in the treatment of elderly patients; → elements of modern technologies in diagnostics and treatment planning.

will be able to carry out:

→ collecting anamnesis taking into account the somatic status, interviewing the patient and conducting a comprehensive clinical examination; → identifying dental diseases and age-related changes in the dentoalveolar system; → formulating preliminary and clinical diagnostic conclusions; → participating in the implementation of treatment and rehabilitation measures; → performing basic dental manipulations taking into account age-related characteristics; → compliance with the principles of asepsis and antisepsis; → preparation of medical documentation.

will be able to analyze:

→ data from a clinical examination of elderly patients (assessment of the condition of the teeth, periodontium, oral mucosa, occlusion, TMJ function) taking into account age-related changes and concomitant diseases.

will be able to synthesize:

→ results of clinical examination, laboratory and instrumental methods to identify dental pathology and justify a comprehensive treatment and rehabilitation plan.

will be able to evaluate:

→ the condition of the dental system of an elderly patient and the severity of pathological changes; → the effectiveness and safety of the dental interventions; → the compliance of the selected methods of diagnosis, treatment and rehabilitation with the individual characteristics of the patient and the clinical situation.

1.2. Recommended educational technologies

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

- lecture with elements of discussion and problem solving;
- lectures - electronic presentations;
- analysis of specific situations;
- role-playing game "doctor - patient";
- lecture-visualization;



- problem lecture;
- conference session;
- training;
- debate;
- brainstorming;
- master class;
- small group method;
- classes using training equipment and simulators;
- analysis of clinical cases;
- situational tasks;
- use of computer training programs;
- attending medical conferences and consultations;
- student's research work;
- holding subject Olympiads;
- preparation of written analytical papers;
- preparation and defense of abstracts;

1.3. Scope of the discipline and types of academic work


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

Form of study – full-time

According to the 2025 curriculum	9 sem.	Total	
		in hours	in loans
Total labor intensity	60	60	2
Classroom work	36		
Lectures	18		
Practical classes	18		
Independent work	12		
SRSP	12		
Type of final control	Credit		

1.4. Structure of the discipline

1.4.1. Thematic plan for studying the discipline (by semester) –Reflects the course structure, reveals the sequence of study of sections and topics of the program; is presented in the form of a table and provides information on the distribution of the

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

number of hours by topics, types of classes (lectures, seminars, practical classes, laboratory work, independent work of students), the competencies developed, the educational technologies used, the methods and methods of teaching, and forms of assessment.



Educational institution
Royal Metropolitan University

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

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


No	Name sections and topics disciplines (lectures and practical classes)	Classroom activities				Total hours on classroom work	SRSP	Independent work of a student	Formed competencies	Used educational technologies, methods and techniques of teaching	Dummies	Forms of current and border control academic performance
		lectures	seminars	practical classes	laboratory work							
9th semester												
1	INTRODUCTION, group discussion of basic concepts.	2		2		4			GC-1, SPC-1, SPC-2	lecture using video materials	Dental instruments	Assessment of the acquisition of practical skills (abilities)
2	Biology, physiology and pathology of aging.	2		2		4	2	2	GC-1, PC-3	lecture-visualization	Jaw models	Testing, control work. Assessment of the acquisition of practical skills (abilities).
3	Age-related changes in the maxillofacial system. Psychology of aging.	2		2		4	2	2	GC-1, PC-3, PC-16	lecture using video materials	Jaw models	classes using training equipment and simulators
4	History taking and risk assessment in older adults. Patient-centered treatment	2		2		4	2	2	SPC-1, SPC-2	lecture-visualization	Jaw models	classes using jaw models.



Educational institution
Royal Metropolitan University

Quality management system
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"

	planning. Oral mucosal diseases and disorders in older adults.											<i>Assessment of the acquisition of practical skills (abilities).</i>
5	Pain diagnosis. Dyssalivation and dry mouth. Periodontitis in the elderly. Denture-related problems and evaluation of dentures in the elderly.	2		2		4	2	2	PC-2, PC-15, PC-20	<i>lecture using video materials</i>	<i>Jaw models</i>	<i>analysis of clinical cases. Use of dummies.</i>
6	Oral manifestations of systemic diseases. Principles of pharmacodynamics and pharmacokinetics in elderly patients. Drug interactions and the importance of polypharmacotherapy.	2		2		4	2	2	PC-3, PC-23, PC-26	<i>lecture using video materials</i>	<i>Jaw models</i>	<i>Training sessions using simulators and training equipment. Testing. Assessment of the acquisition of practical skills (abilities).</i>
7	Assessment of the risk of developing dental caries, especially root caries. Assessment of tooth wear.	2		2		4	2	2	PC-19, PC-16, PC-20	<i>lecture using video materials</i>	<i>Jaw models</i>	<i>analysis of clinical cases. Classes using simulators and training equipment</i>
8	Periodontitis in the elderly. Precancerous lesions in the elderly.	2		2		4			PC-2, PC-16, PC-20	<i>lecture using video materials</i>	<i>Jaw models</i>	<i>Classes using simulators and</i>

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

												<i>training equipment</i>
9	Age-related changes in the functioning of the senses (vision, hearing, smell, and taste). Common diseases among the elderly. Relevance and prevalence of comorbidities. Key socioeconomic factors influencing oral care in the elderly.	2		2		4			PC-19, PC-3, PC-22	<i>lecture using video materials</i>	<i>Jaw models</i>	<i>analysis of clinical cases. Testing. Assessment of the acquisition of practical skills (abilities).</i>


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
Teaching and Methodological Complex of the discipline "Gerontostomatology"
Department of Dental Disciplines of the Educational Institution "RMU"
560004 "Dentistry"**

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" 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 3rd semester:	Assignment for independent work	Recommended literature	Deadlines surrender (week number)
1.	Age-related changes in hard dental tissues in elderly and senile patients.	Abstract, presentation, preparation of the report.	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019. 	1
2.	Features of the structure and function of the oral mucosa during aging.	Abstract, presentation, preparation of a report	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019. 	2
3.	Polymorbidity in elderly patients and its impact on dental treatment.	Abstract, presentation, preparation using dummies.	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. 	3



			<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019. 	
4.	Xerostomia in the elderly: causes, diagnosis, correction methods.	Abstract, presentation, preparation using dummies.	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019. 	4
5	Features of the course of caries in the elderly (including root caries).	Abstract, presentation, report preparation.	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019. 	5
6	Periodontal diseases in elderly patients: clinical presentation, diagnosis	Abstract, presentation,	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal 	6




	and treatment.	report preparation.	<p>diseases: textbook.— Moscow: GEOTAR-Media, 2021.</p> <ul style="list-style-type: none"> • Barer G. M. (ed.) <p>Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015.</p> <ul style="list-style-type: none"> • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. <p>Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019.</p>	
7	Manifestations of somatic diseases in the oral cavity in elderly patients.	Abstract, presentation, report preparation.	<ul style="list-style-type: none"> • Barer G. M. (ed.) <p>Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021.</p> <ul style="list-style-type: none"> • Barer G. M. (ed.) <p>Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015.</p> <ul style="list-style-type: none"> • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. <p>Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019.</p>	6
8	Features of pharmacotherapy in gerontostomatology (polypharmacy, drug interactions).	Abstract, presentation. Preparation using dummies.	<ul style="list-style-type: none"> • Barer G. M. (ed.) <p>Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021.</p> <ul style="list-style-type: none"> • Barer G. M. (ed.) <p>Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015.</p> <ul style="list-style-type: none"> • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. <p>Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019.</p>	7



9	Principles of orthopedic treatment of elderly patients with complete and partial edentia.	Abstract, presentation, report preparation.	<ul style="list-style-type: none">• Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021.• Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015.• Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019.	7
10	Problems of adaptation to removable dentures in elderly patients and ways to solve them.	Abstract, presentation, report preparation.	<ul style="list-style-type: none">• Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021.• Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015.• Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019.	7
11	Precancerous diseases and oncological alertness in dentistry in the elderly.	Abstract, presentation, report preparation.	<ul style="list-style-type: none">• Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021.• Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015.• Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed.,	8



			revised. and additional — Moscow: GEOTAR-Media, 2019.	
12	Prevention of dental diseases in elderly and senile people.	Abstract, presentation, report preparation.	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019. 	8
13	Psychological features of communication with elderly patients in dental practice.	Abstract, presentation, report preparation.	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019. 	8
14	The role of social and economic factors in shaping the dental health of the elderly.	Abstract, presentation, report preparation.	<ul style="list-style-type: none"> • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook.— Moscow: GEOTAR-Media, 2021. • Barer G. M. (ed.) Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015. • Trezubov V. N., Shcherbakov A. S., Mishnev L. M. 	9

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

			Orthopedic dentistry (faculty course): textbook. — 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019.	
--	--	--	--	--

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):

1. **Gerontostomatology as a section of dentistry.**
Goals, objectives and significance of the discipline in modern medical practice.
2. **Biological basis of aging of the organism.**
Age-related changes in the organs and tissues of the oral cavity.
3. **Age-related changes in the dental system.**
Changes in teeth, periodontium, and mucous membranes in elderly patients.
4. **Features of clinical examination of an elderly patient.**
Anamnesis collection, assessment of somatic status, multimorbidity.
5. **Psychological characteristics of elderly and senile patients.**
Physician-patient communication, cognitive impairment.
6. **Diseases of the oral mucosa in the elderly.**
Atrophic, inflammatory and precancerous conditions.
7. **Periodontal diseases in old age.**
Features of the course, diagnosis and principles of treatment.
8. **Caries and non-carious lesions in older patients.**
Clinical features and prevention.
9. **Complete and partial edentia in elderly patients.**
Causes, consequences and methods of rehabilitation.
10. **Features of orthopedic treatment of elderly patients.**
Selection of designs and adaptation of prostheses.
11. **Removable dentures in elderly patients.**
Problems of fixation, adaptation and care.



12. **Fixed prosthetics in gerontostomatology.**
Indications, limitations and planning features.
13. **Prevention of dental diseases in the elderly.**
Individual and professional oral hygiene.
14. **Comprehensive rehabilitation of elderly patients.**
Interdisciplinary approach (dentistry, therapy, geriatrics).

Sample situational problems for the discipline: Situational tasks

Problem number 1.

Patient L., 68, presented with complaints of tightness and burning in the mouth. Examination revealed fused, polygonal, grayish-white papules on the posterior buccal mucosa and dorsum of the tongue, fluorescing with a whitish-yellowish light under Wood's rays. Sharp cusps were noted near the third molars, and amalgam fillings were present on the vestibular surface in the cervical region of teeth 16, 26, 27, 37, and 47.

rough, darkened plastic fillings on teeth 13, 12, 11, 21, 22.


1. Make a diagnosis.
2. What diseases should this pathology of the oral mucosa be differentiated from?
3. What local factors could have caused this disease?
4. Prescribe general treatment for oral mucosal disease.
5. Prescribe local treatment for the disease of the oral mucosa.

Problem number 2.

A 66-year-old man presented with complaints of pain when eating. History: Over the past two months, a defect in the oral mucosa had developed on the left lateral surface of his tongue.

Objectively: the oral cavity is not sanitized. A poor-quality bridge is present, supported by teeth 36 and 38. An ulcer measuring 0.3 x 0.8 cm with smooth edges is observed on the left lateral surface of the tongue; it is extremely painful upon palpation. The submandibular lymph nodes are enlarged, mobile, and painful.

1. Make a diagnosis.
2. Conduct differential diagnostics.

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

3. Make a treatment plan.
4. Prescribe anti-inflammatory and epithelializing therapy.
5. Which physiotherapy method would you prescribe?

Problem number 3.

A 50-year-old patient, Mr. Zh., presented to the dental clinic with pain in the area of tooth 16. History: The patient had been seen by the dentist for an exacerbation of chronic pulpitis in tooth 16. He is intolerant to anesthetics. An arsenic paste was applied under an artificial dentin dressing a week ago. Objectively: a defect in the mucous membrane of the gingival papilla between teeth 16 and 17, measuring 0.3 x 0.3 cm in diameter, is covered with a yellowish fibrinous plaque. The tooth cavity is not sealed hermetically. Percussion is extremely painful.

1. Make a diagnosis;
2. What is the differential diagnosis carried out with?
3. Make a treatment plan;
4. What antidotes will you prescribe?
5. What is the prevention of this complication?

Problem number 4.

A 52-year-old patient presented to the doctor complaining of pain when eating and talking. History: The patient mistakenly swallowed a solution instead of water and immediately felt a burning sensation. It turned out to be sulfuric acid. He rinsed with water and then consulted the doctor. Physical examination revealed extensive necrosis of the dorsal tongue mucosa, covered by a thick yellowish film. Palpation was painful.

1. Make a diagnosis;
2. Conduct differential diagnosis;
3. Create an algorithm for chemical burn treatment with acids;
4. What acid neutralizers will you use?
5. What is the prevention of chemical burns in the mouth?

Problem number 5.

Patient A., 64, presented with complaints of dry, burning mouth at night, waking up and rinsing his mouth with water. He believes this may be the cause of his insomnia.



Anamnesis: a year ago the patient was fitted with a fixed denture supported by teeth 15 to 17.

Objectively: Upon examination, facial configuration is unchanged. In the oral cavity, fixed metal dentures with a coating rest on teeth 15 through 17. There are amalgam fillings on teeth 26 and 37. Microcurrent level is 10 μ A. The oral mucosa is pale pink. Viscosity of saliva is observed.

1. Make a diagnosis;
2. Conduct differential diagnosis;
3. Make a treatment plan;
4. What local and general medications should be prescribed?
5. What preventive measures would you recommend to the patient?

Problem number 6.

The patient consulted a dentist complaining of a painful growth on the red border of his lower lip.

Anamnesis: 2 days after electrophoresis, the patient felt a sharp pain in the area of the red border of the lower lip.

Objectively: on the red border of the lower lip there is a round ulcer on an edematous hyperemic background, covered with a fibrinous coating.

1. Make a diagnosis.
2. Conduct differential diagnosis;
3. Make a treatment plan;
4. What topical medications can be prescribed?
5. Prevention of this complication;

Problem number 7.

Patient K., 50 years old, complained of pain in the mucous membrane of the cheek on the right, which occurred when eating.

History: The patient noticed clouding of the mucous membrane of his right cheek 5 years ago. He had not consulted a doctor. He had been a smoker for 25 years. Pain



developed two days ago while eating and biting on the mucous membrane of his cheek.

Objectively: against the background of a cloudy-gray mucous membrane of the anterior cheek on the right, a bumpy relief of the mucous membrane is observed, the "cobblestone pavement" symptom.

1. Make a diagnosis;
2. Conduct differential diagnosis;
3. Make a treatment plan;
4. Local preparations;
5. What is the prevention of this disease?
6. Diagnostic methods? Comprehensive treatment plan?

Boundary (modular) control may represent:

- testing by section (computer);

1. Gerontostomatology studies:

- a) Childhood diseases
- b) The aging process
- c) Genetic disorders
- d) Infectious diseases

2. Which of the following best describes "aging"?

- a) Increased bone density
- b) The aging process
- c) Development of new tissue
- d) Rapid cell division

3. The most common dental disease in older people:

- a) Caries
- b) Periodontal diseases
- c) Oral cancer
- d) Malocclusion



4. Xerostomia in elderly patients is most often caused by:

- a) Increased water consumption
- b) Taking medications
- c) High protein diet
- d) Sedentary lifestyle

5. Age-related macular degeneration primarily affects:

- a) Hearing
- b) Vision
- c) Bone density
- d) Skin elasticity

6. What condition is characterized by progressive memory loss in older people?

- a) Schizophrenia
- b) Alzheimer's disease
- c) Bipolar disorder
- d) Parkinson's disease

7. What dental problem is most common in patients with Parkinson's disease?

- a) Enamel erosion
- b) Change in tooth color
- c) Xerostomia and salivation
- d) Bruxism

8. "Polypharmacy" in older people means:

- a) Use of multiple drugs
- b) High blood sugar
- c) Drug overdose
- d) Drug resistance

9. The term "weakness" in older people means:



- a) Muscle growth
- b) Only a decrease in bone density
- c) Vulnerability to adverse health effects
- d) Cardiovascular endurance

10. What oral health problem is associated with osteoporosis?

- a) Increased risk of jaw fractures
- b) Increased plaque formation
- c) Excessive salivation
- d) Decreased sense of taste

11. What is the main cause of decreased taste sensation in elderly patients?

- a) Loss of teeth
- b) Increased salivation
- c) Degeneration of taste buds
- d) Eating habits

12. What type of dentures are most often recommended for elderly patients with limited manual dexterity?

- a) Fixed bridge
- b) Partial denture
- c) Flexible denture
- d) Complete denture

13. "Senile cataracts" are primarily associated with:

- a) Loss of teeth
- b) Visual impairment
- c) Hearing loss
- d) Joint stiffness

14. Which of the following is a common sign of dementia?

- a) Acute pain in the jaw



- b) Swelling of the gums
- c) Memory impairment
- d) Gum recession

15. A common oral complication in elderly patients with diabetes is:

- a) Hyperkeratosis
- b) Periodontal disease
- c) Macrogyeny
- d) Anodontia

16. What condition may affect the placement of dentures in elderly patients?

- a) Hypertension
- b) Diabetes mellitus
- c) Hyperthyroidism
- d) Dysphagia

17. Sarcopenia refers to:

- a) Loss of bone density
- b) Increase in muscle mass
- c) Loss of muscle mass
- d) Joint pain

18. The main goal of geriatric dentistry:

- a) Teeth whitening
- b) Cosmetic improvement
- c) Maintaining oral health and improving quality of life
- d) Rapid tooth extraction

19. What type of hearing loss is commonly seen in older adults?

- a) Conductive hearing loss
- b) Noise-induced hearing loss



- c) Presbycusis
- d) Central hearing loss

20. What factor most contributes to root caries in the elderly?

- a) High calcium diet
- b) Use of dentures
- c) Gum recession
- d) Alcohol consumption

21. What mental illness is common among older patients and can affect oral hygiene?

- a) Schizophrenia
- b) Depression
- c) ADHD
- d) OCD

22. Osteoarthritis usually affects which part of the body?

- a) Liver
- b) Joints
- c) Lungs
- d) Skin

23. Geriatric patients with which condition are at higher risk for aspiration pneumonia?

- a) Dysphagia
- b) Hyperthyroidism
- c) Osteoporosis
- d) Melanoma

24. Which of the following is a physiological change in the aging heart?

- a) Increased cardiac output
- b) Decreased heart rate
- c) Decreased elasticity of the myocardium



d) Improving blood flow

25. What medications are commonly associated with dry mouth in elderly patients?

- a) Antidepressants
- b) Antibiotics
- c) Antacids
- d) Insulin

26. What screening test is often used to assess cognitive function in older patients?

- a) MRI
- b) Mini-Mental State Examination (MMSE)
- c) ECG
- d) UAC

27. Osteoporosis is most common in:

- a) Older men
- b) Postmenopausal women
- c) Young people
- d) Children

28. What symptom is commonly seen in elderly patients with diabetes?

- a) Hyperkeratosis
- b) Oral thrush
- c) Leukoplakia
- d) Alveolar osteitis

29. Elderly patients are often at risk of falls due to:

- a) High bone density
- b) Loss of balance and coordination
- c) Increase in muscle mass
- d) Improving visual acuity



30. What diet is generally recommended for the prevention of osteoporosis in older adults?

- a) High protein, low calcium
- b) Low calcium, low vitamin D
- c) High calcium content, high vitamin D content
- d) Low protein, high fat

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 "Gerontostomatology" assessed on a 100-point scale:

The maximum score is 100, of which:

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

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


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

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

The final assessment form is a credit.

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


Rating and Scoring Scale				
Maximum score	Intervals			
	unsatisfactory	"satisfactorily"	"Fine"	"Great"
20	0-11	12-15	16-17	18-20
40	0-23	24-30	31-35	36-40

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

60	0-35	36-45	46-53	54-60
100	0-59	60-75	76-89	90-100

Academic achievement grading scale

Rating (points)	Letter grading system	Value for calculating GPA	Digital equivalent of the assessment	Assessment according to the traditional system
96-100%	A+	4.00	5	Great
93-95.99%	A	3.75		
90-92.99%	A-	3.67		
87-89.99%	B+	3.33	4	Fine
83-86.99%	B	3.00		
80-82.99%	B-	2.67		
77-79.99%	C+	2.33	3	Satisfactorily
73-76.99%	C	2.00		
70-72.99%	C-	1.67		
67-69.99%	D+	1.33	2	
63-66.99%	D	1.00		
60-62.99%	D-	0.67		
00-59.99%	F	0.00	1	Unsatisfactory
	P			Credit
	NP			Fail
	I		Not taken into account when calculating the average grade	Failed to comply with all disciplinary requirements for a valid reason
	W			Refusal to attend a course that is not mandatory
	AU			Attended the course as a student without

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

				receiving grades (awarded to the student if he attended at least 80% of the classes in the additional course as a student).
--	--	--	--	---

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

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

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

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

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


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

1.4.5. Educational, methodological and informational support of the discipline

List of sources and literature:

a) main literature:

1. Yanushevich O. O., Maksimovsky Yu. M., Maksimovskaya L. N., Orekhova L. Yu.
Therapeutic dentistry: textbook.— 3rd ed., revised. and additional — Moscow: GEOTAR-Media, 2023.
2. Barer G. M. (ed.)
Therapeutic dentistry. In 3 parts. Part 2: Periodontal diseases: textbook. — Moscow: GEOTAR-Media, 2021.
3. Barer G. M. (ed.)
Therapeutic dentistry. In 3 parts. Part 3: Diseases of the oral mucosa: textbook.— 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2015.
4. Trezubov V. N., Shcherbakov A. S., Mishnev L. M.
Orthopedic dentistry (faculty course): textbook.— 9th ed., revised. and additional — Moscow: GEOTAR-Media, 2019.
5. Kalivradzhiyan E. S., Lebedenko I. Yu., Bragin E. A., Ryzhova I. P. (eds.)
Orthopedic dentistry: textbook.— Moscow: GEOTAR-Media, 2018.

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

6. Abakarov S.I. et al.
Fundamentals of dental prosthetics technology: textbook: in 2 volumes. — Moscow: GEOTAR-Media, 2022.

b) additional literature:

7. Maksimovsky Yu. M., Mitronin A. V.
Therapeutic dentistry. Caries and diseases of dental hard tissues. Endodontics: a textbook. — Moscow: GEOTAR-Media, 2021.
8. Epifanov V. A. et al.
Medical rehabilitation in dentistry. — Moscow: GEOTAR-Media, 2016.
9. Panin A. M. (ed.)
Surgical dentistry. Inflammatory and degenerative diseases of the salivary glands: a textbook. — 2nd ed., revised. and additional — Moscow: Litterra, 2020.
10. Tsarev V. N. (ed.)
Microbiology, virology, immunology of the oral cavity: textbook. — 2nd ed., revised. and additional — Moscow: GEOTAR-Media, 2021.
11. Briko N. I., Martynov Yu. V. (ed.)
Epidemiology: a textbook for students majoring in Dentistry. — Moscow: GEOTAR-Media, 2025.
12. Yanushevich O. O., Afanasyev V. V. (ed.)
Dentistry and maxillofacial surgery. Recording and maintaining medical records. — 3rd ed., revised. and additional — Moscow: GEOTAR-Media, 2022.
13. Larentsova L. I., Smirnova N. B.
Psychology of doctor-patient relationships: a tutorial. — Moscow: GEOTAR-Media, 2014.

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

Provide links to websites that are publicly accessible.

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

-www.kyrlibnet.kg.

-www.iprbookshop.ru.

-www.medportal.ru.

-www.studmedlib.ru

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


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

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

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

1.4.6. Material and technical support of discipline

When teaching students, modern methods and forms of teaching are used, using the latest information technologies, electronic educational resources and other

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

information systems necessary for the successful implementation of educational, scientific and therapeutic activities.

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

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

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

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


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

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

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

Table 1

No. p/p	Type	Name	Note
1.	Videos on an interactive whiteboard	<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)	From 10 min. 60

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

		<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	
2.	Presentations.	Throughout the lecture course	From 20 to 30 slides per presentation
3.	Written and test assignments.	Throughout the lecture course	In a significant way quantity
4.	Practical training. Simulation center (stations)	Throughout the course	In a significant way quantity

List of premises used

Table 2.

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

1.4.7. Student research work

The research work in the discipline "Gerontostomatology" 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 papers (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 1. INTRODUCTION TO GERONTODENTISTRY

1. General Provisions

Gerontostomatology is an independent branch of dentistry that studies the structure, function, and pathological processes of the oral organs and tissues in elderly and senile individuals. In recent decades, this field has gained particular importance due to demographic changes in the population structure of most



countries. Increased life expectancy leads to a growing proportion of elderly patients in dental care, requiring adaptation of diagnostic, treatment, and preventive methods.

Gerontostomatology is closely linked to geriatrics, therapeutic dentistry, prosthetic dentistry, periodontology, and surgical dentistry. It provides a comprehensive approach to patients, considering not only localized changes in the oral cavity but also the overall health of the patient.

2. The purpose and objectives of gerontostomatology

The main goal of gerontostomatology is to preserve and restore the dental health of elderly patients, as well as improve their quality of life by maintaining full function of the masticatory system, speech, and aesthetics.

The main objectives of the discipline include:

1. Study of age-related anatomical and physiological changes in the dental system;
2. Analysis of the impact of aging on the condition of oral tissues;
3. Development of methods for diagnosing dental diseases in elderly patients;
4. Improving treatment methods taking into account age characteristics;
5. Prevention of dental diseases in the elderly;
6. Development of rehabilitation programs for patients with partial or complete loss of teeth.

3. Relevance of the discipline

The relevance of gerontostomatology is determined by the following factors:

- increasing life expectancy of the population;
- an increase in the number of patients over 60–65 years of age;
- high prevalence of chronic diseases in old age;
- decreased tissue regenerative capacity;
- deterioration of oral hygiene in the elderly;
- increasing need for orthopedic and comprehensive dental care.

Elderly patients often have comorbidities (hypertension, diabetes, cardiovascular disease), which significantly complicates dental treatment and requires an individual approach.

4. Age classification in gerontostomatology

In dental practice, the following age groups are distinguished:



- old age (60–74 years);
- old age (75–89 years);
- centenarians (90 years and older).

Each of these groups is characterized by varying degrees of severity of age-related changes, which must be taken into account when planning treatment.

5. Key characteristics of an elderly dental patient

Elderly patients have a number of specific features:

5.1. Somatic features

- presence of chronic diseases;
- decreased immune reactivity;
- slowing down of metabolic processes;
- polypharmacy (taking a large number of medications at the same time).

5.2. Psychological characteristics

- increased anxiety;
- distrust of new treatment methods;
- cognitive impairment (memory loss, attention);
- depressive states.

5.3. Dental features

- multiple tooth loss;
- reduction of bite height;
- bone tissue atrophy;
- periodontal diseases;
- decreased salivation.

6. The importance of gerontostomatology in modern medicine

Gerontostomatology plays an important role in the healthcare system, as oral health directly affects:

- chewing function;
- digestion;
- general condition of the body;
- speech quality;
- social adaptation of the patient.



The lack of dental rehabilitation in the elderly leads to a decrease in quality of life, limited nutrition (soft and unhealthy food), and a deterioration in overall health.

7. Interdisciplinary approach

Modern gerontostomatology requires the interaction of specialists from various fields:

- dentist-therapist;
- orthopedic dentist;
- periodontist;
- dental surgeon;
- geriatrician;
- therapist;
- endocrinologist.

Only a comprehensive approach allows for effective treatment of elderly patients, taking into account their systemic diseases.

8. Principles of providing dental care to elderly patients

The main principles include:

1. Individual approach to each patient;
2. Minimally invasive interventions;
3. Taking into account the general somatic condition;
4. Painless treatment;
5. Psychological support for the patient;
6. Preventive focus of treatment;
7. Long-term rehabilitation planning.

9. The role of prevention in gerontostomatology

Prevention is a key focus of the discipline and includes:

- oral hygiene training;
- regular dental checkups;
- nutritional correction;
- prevention of caries and periodontal diseases;
- timely prosthetics.



10. Conclusion

Gerontostomatology is an important and rapidly developing field of dentistry, addressing the needs of the aging population. Given demographic changes, the role of this discipline will continue to grow.

A comprehensive approach, including prevention, treatment, and rehabilitation, can significantly improve the quality of life of elderly patients and maintain the functional activity of the dental system.

LECTURE 2. CHANGES IN THE TISSUES AND ORGANS OF THE ORAL CAVITY IN ELDERLY PEOPLE

1. General characteristics of age-related changes

Aging is accompanied by predictable structural and functional changes in all organs and systems, including the oral cavity. These changes are progressive, irreversible, and systemic, but their severity can vary significantly depending on lifestyle, the presence of somatic diseases, oral hygiene, and genetic factors.

In gerontostomatology, age-related changes are considered not as a pathological process, but as a physiological basis on which secondary diseases often develop (caries, periodontitis, diseases of the mucous membrane, prosthetic complications).

The main mechanisms of oral tissue aging include:

- decreased cellular regeneration;
- decreased microcirculation;
- metabolic disorders;
- decreased immune protection;
- tissue dehydration;
- hormonal changes.

2. Changes in teeth in older people

Teeth are one of the most stable, yet gradually changing structures of the body.

2.1. Enamel

With age, the following changes occur in enamel:

- increase in mineralization of the surface layer;
- decreased permeability;
- loss of shine;
- color change (darkening, yellowish or grayish tint);



- microcracks and increased fragility.

2.2. Dentin

- secondary and tertiary dentin is deposited throughout life;
- the cavity of the tooth narrows;
- dentin sclerosis develops;
- Reduces tooth sensitivity to temperature and chemical irritants.

2.3. Pulp

- reduction in the volume of the pulp chamber;
- fibrous changes;
- reduction in the number of vessels and nerve endings;
- deterioration of regenerative capabilities;
- decreased pain sensitivity (which may mask pathological processes).

2.4 Clinical significance

Age-related changes in teeth lead to:

- increased risk of hidden caries;
- late diagnosis of diseases;
- difficulty in endodontic treatment;
- change in restoration tactics.

3. Periodontal changes

The periodontium is one of the most vulnerable structures in old age.

3.1. Gums

- thinning of the epithelium;
- decreased keratinization;
- gum recession;
- reduction of the vascular network;
- tendency to chronic inflammation.

3.2 Periodontal ligament

- decrease in the number of collagen fibers;
- decreased elasticity;
- violation of the shock-absorbing function.



3.3 Alveolar bone

- gradual resorption of bone tissue;
- decrease in the height of the alveolar process;
- decrease in bone density;
- development of osteoporotic changes.

3.4 Clinical significance

- increased tooth mobility;
- risk of premature tooth loss;
- difficulties with prosthetics;
- the need for periodontal support in any type of treatment.

4. Changes in the oral mucosa

The mucous membrane in elderly patients undergoes pronounced atrophic changes.

4.1. Epithelium

- thinning of the stratified squamous epithelium;
- decreased mitotic activity;
- slowing down of regeneration;
- increased trauma.

4.2. Lamina propria of the mucosa

- reduction in the number of vessels;
- decreased elasticity;
- fibrous changes;
- deterioration of tissue trophism.

4.3. Clinical manifestations

- dryness of the mucous membrane (xerostomia);
- increased sensitivity to mechanical irritants;
- tendency to microtrauma;
- long-term healing of damage.

5. Changes in the salivary glands and saliva

The salivary glands play a key role in maintaining oral health.



5.1. Changes in glands

- atrophy of glandular tissue;
- replacement of parenchyma with adipose and connective tissue;
- decreased secretory activity.

5.2 Changes in saliva

- decrease in the volume of salivation;
- change in viscosity;
- decrease in buffer capacity;
- reduction of antibacterial properties.

5.3 Clinical consequences

- xerostomia;
- increased risk of caries;
- development of candidiasis;
- difficulty wearing prostheses;
- speech and swallowing disorders.

6. Changes in the bone structures of the jaws

The jaw bone tissue is particularly sensitive to age-related changes.

6.1. Main processes

- osteoporosis;
- decrease in mineral density;
- decreased osteoblast activity;
- predominance of resorption processes.

6.2. Alveolar changes

- alveolar ridge atrophy;
- smoothing of bone relief;
- reduction of the supporting surface for teeth and dentures.

6.3 Clinical significance

- deterioration of fixation of removable dentures;
- change in bite;
- the need for bone correction in some cases.



7. Changes in the temporomandibular joint (TMJ)

With age, degenerative changes occur in the TMJ:

- thinning of articular cartilage;
- decrease in the amount of synovial fluid;
- articular disc degeneration;
- limitation of movement of the lower jaw;
- possible development of arthrosis.

Clinical manifestations:

- crunching in the joint;
- pain when moving;
- restriction of mouth opening;
- violation of chewing function.

8. Functional changes in the dental system

Age-related changes lead to disruption of basic functions:

8.1. Chewing function

- decreased efficiency of chewing food;
- one-sided load;
- refusal of solid food.

8.2. Speech function

- articulation disorder due to tooth loss;
- decreased clarity of pronunciation.

8.3. Aesthetic function

- change in the height of the lower third of the face;
- retraction of lips;
- senile facial type.

9. Conclusion

Age-related changes in oral tissues and organs are a natural biological process, but they significantly impact the dental health of elderly patients. These changes create the basis for the development of pathological processes and complicate treatment.



Understanding these mechanisms is the basis for competent planning of dental care, selection of treatment methods and prosthetics, as well as for effective prevention.

A gerontostomatologist must consider not only local changes, but also the general condition of the patient's body, which requires a comprehensive and individualized approach.

LECTURE 3. ATROPHY AND OSTEOPOROSIS OF ORAL TISSUES IN THE ELDERLY

1. General characteristics of age-related dystrophic processes

Atrophy and osteoporosis are among the key morphofunctional changes in the dental tissues of elderly and senile patients. These processes develop gradually, are chronic, and lead to a significant reduction in the functional activity of the oral organs.

Atrophy is a decrease in tissue volume due to decreased cellular activity, impaired nutrition, and impaired metabolic processes. Osteoporosis is a systemic skeletal disease characterized by decreased bone density and microarchitectural deterioration, leading to increased bone fragility.

In the oral cavity, these processes are closely interconnected and are especially pronounced in the alveolar processes of the jaws.

2. Causes of atrophy and osteoporosis

Age-related changes in the bone and soft tissues of the oral cavity are caused by a complex of factors:

2.1 Physiological reasons

- natural aging of the body;
- decreased osteoblast activity;
- decrease in tissue regenerative potential;
- hormonal changes (especially decreased estrogen in women).

2.2. Local factors

- loss of teeth and lack of chewing load;
- long-term use of fixed or improperly made dentures;
- chronic trauma to the mucous membrane;
- inflammatory periodontal diseases.



2.3. Systemic factors

- skeletal osteoporosis;
- diabetes mellitus;
- thyroid disease;
- vitamin D and calcium deficiency;
- hypodynamia;
- polypharmacy (taking a large number of medications).

3. Atrophy of oral tissues

3.1. Atrophy of the mucous membrane

The oral mucosa in elderly patients undergoes pronounced atrophic changes:

- thinning of the epithelium;
- reduction in the number of cell layers;
- reduction of keratinization;
- reduction of protective properties;
- deterioration of regeneration.

Clinically this manifests itself:

- dryness of the mucous membrane;
- increased vulnerability;
- burning and discomfort;
- prone to microtrauma and erosion.

3.2. Periodontal atrophy

Periodontal tissues are also subject to age-related atrophy:

- reduction in gum volume;
- gingival recession;
- decrease in collagen fiber density;
- weakening of the ligamentous apparatus of the tooth.

The consequence is:

- tooth mobility;
- root exposure;
- hypersensitivity;
- risk of tooth loss.



3.3. Atrophy of the masticatory muscles

- decreased muscle tone;
- decrease in the force of contractions;
- impaired coordination of chewing movements;
- decreased efficiency of chewing food.

4. Atrophy of the alveolar processes

One of the most significant processes is alveolar bone atrophy.

4.1. Development mechanism

- cessation of chewing load after tooth loss;
- decreased blood supply to bone tissue;
- decreased osteoblast activity;
- predominance of resorption over bone formation.

4.2. Consequences

- decrease in the height of the alveolar ridge;
- smoothing of bone relief;
- change in the shape of the jaws;
- deterioration of conditions for fixation of prostheses.

4.3 Clinical significance

- instability of removable dentures;
- the need to reline the dentures;
- deterioration of chewing function;
- change in the patient's appearance.

5. Osteoporosis of the jaw bones

5.1 Definition

Osteoporosis is a systemic metabolic disease of bone tissue, characterized by a decrease in its density and disruption of microarchitecture, which leads to increased fragility.

5.2. Features in the jaws

The jaw bones have the following characteristics:

- high metabolic activity;



- dependence on chewing load;
- rapid response to functional changes.

Therefore, osteoporosis manifests itself especially clearly here.

5.3. Pathogenesis

- decreased levels of calcium and phosphorus;
- hormonal imbalance;
- decreased collagen synthesis;
- increased bone resorption.

6. Clinical manifestations of osteoporosis in the oral cavity

- decrease in jaw bone density;
- thinning of the cortical plate;
- decreased stability of teeth;
- increased tooth mobility;
- slow healing after tooth extraction;
- complications during implantation and prosthetics.

7. The relationship between atrophy and osteoporosis

Atrophy and osteoporosis are closely related:

- alveolar bone atrophy increases osteoporosis;
- osteoporosis accelerates atrophic processes;
- The absence of teeth is a key factor in the progression of both processes.

Thus, a vicious circle is formed:

tooth loss → decreased load → atrophy → osteoporosis → deterioration of conditions for prosthetics

8. Impact on dental treatment

8.1. Orthopedic treatment

- deterioration of fixation of prostheses;
- the need for individual modeling of the basis;
- frequent corrections of prostheses;
- use of soft linings.

8.2. Surgical treatment

- increased risk of fractures;



- long healing;
- the need for gentle techniques.

8.3. Implantology

- decrease in primary stability of implants;
- the need for bone grafting;
- limited indications.

9. Prevention of atrophy and osteoporosis

9.1 General prevention

- adequate nutrition (calcium, vitamin D);
- physical activity;
- treatment of endocrine disorders;
- control of systemic diseases.

9.2. Dental prophylaxis

- timely prosthetics after tooth loss;
- uniform distribution of chewing load;
- regular correction of prostheses;
- prevention of periodontal diseases.

10. Conclusion

Oral tissue atrophy and osteoporosis are key pathogenetic mechanisms determining the condition of the dental system in elderly patients. These processes lead to significant functional and anatomical changes, complicating dental treatment.

Understanding the mechanisms of atrophy and osteoporosis development allows dentists to properly plan treatment, select optimal prosthetic methods, and effectively prevent complications.

An integrated approach, including general somatic and dental correction, is the basis for successful rehabilitation of elderly patients.

LECTURE 4. DISEASES OF THE MUCOUS MEMBRANES IN THE ELDERLY

1. General characteristics of diseases of the oral mucosa in the elderly

The oral mucosa of elderly and senile patients undergoes significant structural and functional changes, significantly reducing its protective properties. Age-related



atrophy, decreased immune reactivity, and concomitant systemic diseases contribute to a high predisposition to various mucosal diseases.

Diseases of the oral mucosa (OM) in elderly patients are characterized by a number of features:

- chronic course;
- erased clinical symptoms;
- tendency to relapse;
- combination of several pathological processes;
- difficulties in diagnosis at early stages.

At this age, the mucous membrane becomes thin, dry, and easily damaged, which creates favorable conditions for the development of infectious, inflammatory, and degenerative processes.

2. Etiological factors of oral mucosal diseases in the elderly

The causes of the development of mucosal diseases in elderly patients are multifactorial.

2.1. General (systemic) factors

- decreased immune defense of the body;
- chronic diseases (diabetes mellitus, cardiovascular pathology);
- hormonal changes;
- hypovitaminosis;
- polypharmacy (taking a large number of medications).

2.2. Local factors

- decreased salivation (xerostomia);
- prosthetic injury;
- poor oral hygiene;
- presence of dental plaque;
- chronic inflammatory processes of the periodontium.

2.3. Behavioral factors

- insufficient oral hygiene;
- improper use of dentures;
- smoking;
- unbalanced diet.



3. Age-related changes in the mucous membrane as a background for pathology

Before considering diseases, it is important to take into account background age-related changes:

- thinning of the epithelium;
- decreased keratinization;
- decreased vascularization;
- decreased tissue elasticity;
- slowing down of regeneration;
- decreased local immunity.

These changes make the mucous membrane vulnerable to even minor irritants.

4. Main diseases of the mucous membrane in the elderly

4.1. Oral candidiasis

Candidiasis is one of the most common diseases in elderly patients.

Etiology:

- fungi of the genus *Candida albicans*;
- decreased immunity;
- xerostomia;
- wearing prostheses.

Clinical forms:

- pseudomembranous candidiasis;
- atrophic candidiasis;
- chronic hyperplastic candidiasis.

Symptoms:

- white coating on the mucous membrane;
- burning;
- dryness;
- discomfort when eating.

4.2. Chronic atrophic glossitis

Characterized by changes in language:

- smoothing of papillae;



- "varnished" appearance of the tongue;
- pain;
- burning.

Reasons:

- vitamin B deficiency;
- anemia;
- xerostomia;
- systemic diseases.

4.3. Stomatitis

Stomatitis in the elderly is often chronic.

Types:

- catarrhal;
- aphthous;
- denture stomatitis.

Reasons:

- mechanical trauma;
- infection;
- allergic reactions to prosthetic materials.

4.4. Denture stomatitis

Often found in patients using removable dentures.

Factors:

- poor hygiene of dentures;
- long-term wearing;
- fungal infection.

Clinic:

- redness of the mucous membrane under the prosthesis;
- edema;
- discomfort;
- sometimes erosion.



4.5. Lichen planus

Chronic inflammatory-dystrophic disease.

Manifestations:

- white mesh formations;
- erosion;
- burning.

Peculiarity:

- autoimmune nature;
- tendency to chronic course.

4.6. Leukoplakia

Refers to precancerous conditions.

Forms:

- flat;
- warty;
- erosive.

Clinical significance:

- risk of malignancy;
- requires observation and biopsy.

5. Features of the clinical course of oral mucosal diseases in the elderly

Diseases of the mucous membrane in elderly patients have a number of features:

- mild pain;
- long-term asymptomatic course;
- late seeking of help;
- combination of several pathologies;
- slow healing.

This often leads to diagnosis at an advanced stage.

6. Diagnosis of diseases of the mucous membrane

Diagnostics includes a comprehensive approach:



6.1 Clinical methods

- examination of the oral cavity;
- assessment of the mucous membrane condition;
- identification of lesions.

6.2 Laboratory methods

- smear microscopy;
- bacteriological examination;
- cytological examination.

6.3 Additional methods

- biopsy (if precancer is suspected);
- immunological studies.

7. Treatment of diseases of the mucous membrane

Treatment should be comprehensive and take into account the patient's age.

7.1. Etiotropic therapy

- antifungal drugs (for candidiasis);
- anti-inflammatory drugs;
- antibacterial therapy if necessary.

7.2 Local treatment

- antiseptic solutions;
- applications;
- gels and ointments.

7.3. General therapy

- vitamin therapy;
- correction of concomitant diseases;
- improving immune status.

8. Prevention of oral mucosal diseases

Preventive measures include:

- regular oral hygiene;



- proper care of dentures;
- timely treatment of dental and periodontal diseases;
- giving up bad habits;
- regular dental checkups;
- nutritional correction.

9. The importance of diseases of the mucous membrane in gerontostomatology

Diseases of the oral mucosa in elderly patients are of great clinical significance because:

- reduce the quality of life;
- disrupt nutrition;
- cause pain;
- can transform into precancerous conditions;
- complicate prosthetics.

10. Conclusion

Oral mucosal diseases are a common and clinically significant condition in elderly patients. They develop as a result of age-related changes and systemic diseases, are characterized by a chronic course, and require a comprehensive approach to diagnosis and treatment.

Early diagnosis, prevention and adequate therapy can significantly improve the condition of the mucous membrane and enhance the quality of life of elderly patients.

LECTURE 5. PRECANCER DISEASES OF THE ORAL MUCOSA IN THE ELDERLY

1. General characteristics of precancerous diseases

Precancerous diseases of the oral mucosa (OM) are a group of chronic pathological conditions in which there is an increased risk of malignant transformation of the epithelium into cancer in the absence of timely treatment and elimination of provoking factors.

In elderly patients, precancerous diseases occur significantly more often, which is associated with:

- long-term exposure to carcinogenic factors;
- age-related changes in the epithelium;



- decreased immune surveillance;
- chronic injuries of the mucous membrane;
- the presence of concomitant systemic diseases.

A distinctive feature of gerontostomatology is that precancerous processes in the elderly often proceed over a long period of time and are asymptomatic, which leads to late diagnosis.

2. Etiology and risk factors

The development of precancerous diseases is caused by a combination of local and general factors.

2.1 Local factors

- chronic mechanical trauma (sharp edges of teeth, poorly adapted dentures);
- thermal and chemical irritation of the mucous membrane;
- poor oral hygiene;
- chronic inflammatory processes;
- long-term exposure to dental plaque.

2.2 General factors

- age-related changes in the epithelium;
- decreased immunity;
- hypovitaminosis (especially vitamins A, E, group B);
- endocrine disorders;
- chronic gastrointestinal diseases;
- diabetes mellitus.

2.3. Bad habits

- smoking (the main carcinogenic factor);
- alcohol consumption;
- combination of smoking and alcohol (significantly increases the risk of malignancy).

3. Pathogenesis of precancerous changes

Precancerous processes develop gradually and include the following stages:

1. chronic irritation of the mucous membrane;
2. inflammatory-dystrophic changes;
3. violation of keratinization of the epithelium;



4. epithelial dysplasia;
5. formation of a focus of potential malignancy.

The key link is epithelial dysplasia, in which the normal structure of cells, their differentiation and control of division are disrupted.

4. The main forms of precancerous diseases of the oral mucosa

4.1. Leukoplakia

Leukoplakia is the most common precancerous condition.

Forms:

- flat (simple);
- warty;
- erosive (the most dangerous).

Clinical picture:

- white or grayish areas of the mucous membrane;
- thickening of the epithelium;
- surface roughness;
- in the erosive form - the presence of ulcers and pain.

Meaning:

- high probability of malignancy;
- requires mandatory observation.

4.2. Erythroplakia

Erythroplakia is the most dangerous precancerous condition.

Peculiarities:

- bright red areas of the mucous membrane;
- absence of pronounced inflammation;
- high degree of dysplasia.

Clinical significance:

- high risk of developing into cancer;
- requires immediate biopsy.



4.3. Chronic ulcers of the mucous membrane

Reasons:

- traumatization by prostheses;
- decayed teeth;
- chronic inflammation.

Peculiarities:

- prolonged non-healing;
- dense edges;
- tendency to infection.

Danger:

- the possibility of malignancy in the long term.

4.4. Papillomatosis

Characteristic:

- proliferation of epithelium in the form of papillae;
- viral etiology (often HPV);
- chronic course.

Clinical significance:

- possible transformation into a malignant tumor.

4.5. Chronic dyskeratosis

The gist:

- violation of keratinization of the epithelium;
- the appearance of atypical cells.

Clinical manifestations:

- areas of thickening or thinning of the mucous membrane;
- color change;
- decreased elasticity.

5. Clinical features in elderly patients

Precancerous diseases in the elderly have a number of characteristics:



- erased symptoms;
- absence of severe pain;
- slow progression;
- combination with other diseases of the oral mucosa;
- often detected at late stages.

Patients often do not seek help due to the lack of significant discomfort.

6. Diagnosis of precancerous diseases

Diagnosis must be early and comprehensive.

6.1. Clinical examination

- examination of the mucous membrane;
- identification of areas of hyperkeratosis or erythema;
- Estimation of process duration.

6.2. Instrumental methods

- stomatoscopy;
- luminescent diagnostics.

6.3 Laboratory methods

- cytological examination;
- histological examination (biopsy is the “gold standard”).

7. Treatment of precancerous diseases

Treatment is aimed at eliminating the cause and preventing malignancy.

7.1. Elimination of the etiological factor

- grinding of sharp edges of teeth;
- replacement or correction of prostheses;
- elimination of chronic trauma.

7.2. Drug treatment

- anti-inflammatory drugs;
- vitamins (A, E, group B);
- keratoplastic drugs;
- immunocorrective therapy.



7.3. Surgical treatment

- excision of lesions;
- laser coagulation;
- cryodestruction.

8. Prevention of precancerous diseases

Prevention is a key focus of gerontostomatology:

- regular dental examinations (at least 1-2 times a year);
- elimination of chronic trauma;
- correct prosthetics;
- quitting smoking and drinking alcohol;
- maintaining oral hygiene;
- treatment of underlying diseases.

9. The importance of precancerous diseases in clinical practice

Precancerous diseases of the oral mucosa are of great importance because:

- are a potential basis for the development of oral cancer;
- require early detection;
- require dynamic monitoring;
- determine the physician's oncological alertness.

The role of the dentist is to make early diagnosis and promptly refer the patient to an oncologist if suspicious changes occur.

10. Conclusion

Precancerous lesions of the oral mucosa in elderly patients represent a significant clinical problem. Their development is associated with prolonged exposure to adverse factors and age-related tissue changes.

Early diagnosis, elimination of causes, and comprehensive treatment can prevent the development of malignant tumors and significantly improve the prognosis of the disease.



Lecture Topic #6:Fundamentals of Tooth Preparation (phantom course).

Instruments and principles of preparation for orthodontic structures. Demonstration and execution on models.

1. Introduction

Socioeconomic factors play a key role in shaping the dental health of the elderly population. Despite advances in modern medicine, a significant portion of elderly patients experience difficulties in obtaining quality dental care.

Gerontostomatology considers the patient not only from the point of view of the clinical condition of the oral cavity, but also in the context of his social environment, financial situation, level of education, psychological status and access to medical care.

The socio-economic problems of older people directly affect:

- level of oral hygiene;
- timely visit to the dentist;
- possibility of prosthetics;
- quality of life;
- general health condition.

2. Demographic and social characteristics of the elderly population

Modern demographic processes are characterized by:

- increasing life expectancy;
- an increase in the proportion of the elderly population;
- an increase in the number of patients with chronic diseases;
- decreased ability to work after 60–65 years.

The social status of an elderly person often changes:

- retirement;
- decrease in income;
- social isolation;
- dependence on family or state.

These factors directly impact the ability to receive dental care.



3. Economic barriers to dental care

3.1. Financial constraints

One of the main problems is the low income level of the elderly. Pension payments often do not cover:

- modern dental services;
- prosthetics;
- implantation treatment;
- preventive examinations.

As a result, patients delay treatment until complications develop.

3.2. Cost of dental services

Dental care is one of the most expensive areas of medicine. The cost is particularly high:

- orthopedic treatment;
- implantation;
- aesthetic dentistry;
- complex surgical treatment.

This leads to elderly patients often choosing only emergency treatment, ignoring full rehabilitation.

3.3 Lack of insurance coverage

In many healthcare systems, dental care is not fully covered by insurance programs, especially for prosthetics and implantology. This creates an additional financial barrier.

4. Limited access to dental care

4.1. Geographic factors

Older people living in rural or remote areas often have limited access to:

- dental clinics;
- to highly specialized professionals;
- modern methods of treatment.

4.2. Physical limitations

As patients age, many experience:



- limited mobility;
- disability;
- difficulties in movement;
- need for accompaniment.

This reduces the possibility of regular visits to the dentist.

4.3. Infrastructure barriers

Not all medical facilities are adapted for elderly patients:

- lack of elevators;
- uncomfortable chairs;
- long wait for an appointment;
- lack of specialized geriatric dental offices.

5. Psychological and behavioral barriers

5.1. Fear of dental treatment

Many elderly patients experience:

- fear of pain;
- negative experience of previous treatment;
- distrust of new technologies.

5.2. Low motivation for treatment

Reasons:

- belief in the “uselessness of treatment in old age”;
- getting used to the absence of teeth;
- reduction of aesthetic requirements.

5.3. Cognitive impairment

Some elderly patients experience:

- memory impairment;
- dementia;
- decreased ability to self-care.

This makes it difficult to follow doctor's recommendations.



6. Epidemiology of dental diseases in the elderly

The elderly population is characterized by a high prevalence of dental diseases:

- multiple caries;
- complete or partial edentia;
- periodontitis;
- diseases of the mucous membrane;
- prosthetic complications.

Also observed:

- low levels of prosthetics in some population groups;
- poor oral hygiene;
- high need for comprehensive rehabilitation.

7. The influence of socio-economic factors on oral hygiene

Low socio-economic level leads to:

- insufficient dental care;
- rare use of hygiene products;
- lack of professional teeth cleaning;
- late referral to a doctor.

This contributes to the rapid progression of diseases.

8. Problems of prosthetics in elderly patients

8.1 Financial restrictions

Patients often cannot afford:

- high-quality removable dentures;
- fixed structures;
- implantation.

8.2. Adaptation difficulties

- decreased adaptation to prostheses;
- discomfort;
- speech impairment;
- refusal to wear prostheses.



8.3. Insufficient control

Patients rarely come to:

- correction of prostheses;
- preventive examinations;
- relocation of structures.

9. Pharmacoeconomic aspects and polypharmacy

Elderly patients often take a large number of medications, which is called polypharmacy.

9.1. Consequences of polypharmacy

- dry mouth (xerostomia);
- change in taste;
- decreased salivation;
- drug interactions with dental preparations.

9.2. Economic burden

- high cost of drugs;
- the need for continuous treatment of chronic diseases;
- limitation of funds for dentistry.

10. Social consequences of dental problems

Poor oral health in older adults leads to:

- eating disorders (restriction of solid food);
- weight loss;
- deterioration of general health;
- social isolation;
- decrease in quality of life;
- psychological discomfort.

11. The role of the state and the healthcare system

To improve the situation, the following is necessary:

- development of affordable dental care programs;
- inclusion of prosthetics in insurance programs;
- development of geriatric dentistry;



- creation of specialized centers;
- preventive programs for the elderly.

12. The role of the dentist in solving socio-economic problems

The dentist must:

- take into account the patient's social status;
- offer accessible treatment options;
- carry out preventive work;
- teach hygiene;
- motivate the patient for treatment;
- Take into account age and financial limitations when planning therapy.

13. Conclusion

Socioeconomic issues are a key factor determining the dental health of the elderly population. They impact the accessibility, quality, and timeliness of treatment.

A comprehensive solution to these problems requires collaboration between medical institutions, the government, and society. Dentists play a vital role in adapting treatment to the patient's capabilities and improving their quality of life.

LECTURE 7. COMMON HEALTH PROBLEMS AND MULTIPLE MORBIDITY IN THE ELDERLY. ORAL MANIFESTATIONS. PHARMACOLOGY AND POLYPRAGMASIA IN GERONTOSTOMATOLOGY

1. Introduction

Socioeconomic factors play a key role in shaping the dental health of the elderly population. Despite advances in modern medicine, a significant portion of elderly patients experience difficulties in obtaining quality dental care.

Gerontostomatology considers the patient not only from the point of view of the clinical condition of the oral cavity, but also in the context of his social environment, financial situation, level of education, psychological status and access to medical care.

The socio-economic problems of older people directly affect:

- level of oral hygiene;
- timely visit to the dentist;
- possibility of prosthetics;



- quality of life;
- general health condition.

2. Demographic and social characteristics of the elderly population

Modern demographic processes are characterized by:

- increasing life expectancy;
- an increase in the proportion of the elderly population;
- an increase in the number of patients with chronic diseases;
- decreased ability to work after 60–65 years.

The social status of an elderly person often changes:

- retirement;
- decrease in income;
- social isolation;
- dependence on family or state.

These factors directly impact the ability to receive dental care.

3. Economic barriers to dental care

3.1. Financial constraints

One of the main problems is the low income level of the elderly. Pension payments often do not cover:

- modern dental services;
- prosthetics;
- implantation treatment;
- preventive examinations.

As a result, patients delay treatment until complications develop.

3.2. Cost of dental services

Dental care is one of the most expensive areas of medicine. The cost is particularly high:

- orthopedic treatment;
- implantation;
- aesthetic dentistry;
- complex surgical treatment.



This leads to elderly patients often choosing only emergency treatment, ignoring full rehabilitation.

3.3 Lack of insurance coverage

In many healthcare systems, dental care is not fully covered by insurance programs, especially for prosthetics and implantology. This creates an additional financial barrier.

4. Limited access to dental care

4.1. Geographic factors

Older people living in rural or remote areas often have limited access to:

- dental clinics;
- to highly specialized professionals;
- modern methods of treatment.

4.2. Physical limitations

As patients age, many experience:

- limited mobility;
- disability;
- difficulties in movement;
- need for accompaniment.

This reduces the possibility of regular visits to the dentist.

4.3. Infrastructure barriers

Not all medical facilities are adapted for elderly patients:

- lack of elevators;
- uncomfortable chairs;
- long wait for an appointment;
- lack of specialized geriatric dental offices.

5. Psychological and behavioral barriers

5.1. Fear of dental treatment

Many elderly patients experience:

- fear of pain;



- negative experience of previous treatment;
- distrust of new technologies.

5.2. Low motivation for treatment

Reasons:

- belief in the “uselessness of treatment in old age”;
- getting used to the absence of teeth;
- reduction of aesthetic requirements.

5.3. Cognitive impairment

Some elderly patients experience:

- memory impairment;
- dementia;
- decreased ability to self-care.

This makes it difficult to follow doctor's recommendations.

6. Epidemiology of dental diseases in the elderly

The elderly population is characterized by a high prevalence of dental diseases:

- multiple caries;
- complete or partial edentia;
- periodontitis;
- diseases of the mucous membrane;
- prosthetic complications.


Also observed:

- low levels of prosthetics in some population groups;
- poor oral hygiene;
- high need for comprehensive rehabilitation.

7. The influence of socio-economic factors on oral hygiene

Low socio-economic level leads to:

- insufficient dental care;
- rare use of hygiene products;
- lack of professional teeth cleaning;

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

- late referral to a doctor.

This contributes to the rapid progression of diseases.

8. Problems of prosthetics in elderly patients

8.1 Financial restrictions

Patients often cannot afford:

- high-quality removable dentures;
- fixed structures;
- implantation.

8.2. Adaptation difficulties

- decreased adaptation to prostheses;
- discomfort;
- speech impairment;
- refusal to wear prostheses.

8.3. Insufficient control

Patients rarely come to:

- correction of prostheses;
- preventive examinations;
- relocation of structures.

9. Pharmacoeconomic aspects and polypharmacy


Elderly patients often take a large number of medications, which is called polypharmacy.

9.1. Consequences of polypharmacy

- dry mouth (xerostomia);
- change in taste;
- decreased salivation;
- drug interactions with dental preparations.

9.2. Economic burden

- high cost of drugs;
- the need for continuous treatment of chronic diseases;

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

- limitation of funds for dentistry.

10. Social consequences of dental problems

Poor oral health in older adults leads to:

- eating disorders (restriction of solid food);
- weight loss;
- deterioration of general health;
- social isolation;
- decrease in quality of life;
- psychological discomfort.

11. The role of the state and the healthcare system

To improve the situation, the following is necessary:

- development of affordable dental care programs;
- inclusion of prosthetics in insurance programs;
- development of geriatric dentistry;
- creation of specialized centers;
- preventive programs for the elderly.

12. The role of the dentist in solving socio-economic problems

The dentist must:

- take into account the patient's social status;
- offer accessible treatment options;
- carry out preventive work;
- teach hygiene;
- motivate the patient for treatment;
- Take into account age and financial limitations when planning therapy.

13. Conclusion

Socioeconomic issues are a key factor determining the dental health of the elderly population. They impact the accessibility, quality, and timeliness of treatment.

A comprehensive solution to these problems requires collaboration between medical institutions, the government, and society. Dentists play a vital role in adapting treatment to the patient's capabilities and improving their quality of life.



LECTURE 8. GERIATRIC ASSESSMENT IN DENTAL PRACTICE

1. Introduction

Geriatric assessment is a comprehensive, multi-level process of studying the health status of an elderly patient, which includes not only an analysis of dental status, but also an assessment of the general somatic, functional, mental and social condition.

In gerontostomatology, geriatric assessment is of key importance, as it allows:

- determine the degree of risk of dental treatment;
- choose a safe intervention tactic;
- predict the course of diseases;
- improve the patient's quality of life;
- ensure an individual approach to treatment.

Unlike a standard dental examination, a geriatric assessment takes into account age-related changes in the body as a whole.

2. Goals of geriatric assessment

Main objectives:

- determination of the general condition of the patient;
- identification of risk factors for dental treatment;
- assessment of the patient's functional independence;
- cognitive state analysis;
- identification of social and living restrictions;
- planning safe and effective treatment.

3. Key components of geriatric assessment


Geriatric assessment includes several interrelated blocks:

3.1 Medical (somatic) assessment

- presence of chronic diseases;
- the degree of their compensation;
- taking medications;
- presence of complications.

3.2. Functional assessment

- ability to self-care;
- patient mobility;

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

- the opportunity to visit the dentist;
- assessment of chewing function.

3.3. Psycho-emotional assessment

- anxiety level;
- presence of depression;
- cognitive impairment;
- memory and orientation.

3.4. Social assessment

- living conditions;
- availability of family support;
- income level;
- access to medical care.

4. Dental component of geriatric assessment

4.1. Examination of the oral cavity

- condition of teeth (caries, fillings, wear);
- periodontal condition;
- condition of the mucous membrane;
- presence of prostheses.

4.2. Functional assessment of the dental system

- chewing efficiency;
- bite;
- presence of pain when moving the jaw;
- condition of the temporomandibular joint.

4.3. Oral hygiene assessment

- hygiene index level;
- presence of dental plaque;
- care of dentures;
- patient motivation for hygiene.

5. Assessment of systemic risks for dental treatment

5.1 Cardiovascular risks

- arterial hypertension;
- ischemic heart disease;



- risk of bleeding when taking anticoagulants.

5.2. Endocrine risks

- diabetes mellitus;
- metabolic disorders;
- influence on tissue healing.

5.3. Neurological risks

- dementia;
- Alzheimer's disease;
- lack of coordination;
- decreased patient cooperation.

6. Cognitive assessment of the patient

Cognitive functions play an important role in dental treatment:

- orientation in space and time;
- memory;
- ability to understand instructions;
- ability to comply with recommendations.

In cases of severe cognitive impairment, treatment is carried out with the participation of relatives or guardians.

7. Functional independence of the patient

The patient's ability to:

- move independently;
- take care of your oral cavity;
- take food;
- visit medical institutions.

Functional status assessment scales are used (for example, ADL - Activities of Daily Living).

8. Risk assessment of dental intervention

Based on the geriatric assessment, the patient falls into one of the risk categories:



8.1 Low risk

- compensated diseases;
- preserved functional activity.

8.2. Average risk

- the presence of chronic diseases in the compensation stage;
- moderate limitations of functions.

8.3 High risk

- decompensated diseases;
- severe cognitive impairment;
- limited mobility.

9. The importance of geriatric assessment in treatment planning

Geriatric assessment allows:

- determine the scope of dental intervention;
- choose a method of pain relief;
- determine the need for hospitalization;
- plan the stages of treatment;
- minimize complications.

10. Interdisciplinary approach

Geriatric assessment requires the participation of specialists:

- dentist;
- therapist;
- cardiologist;
- endocrinologist;
- neurologist;
- geriatrician;
- if necessary - a psychiatrist and a social worker.

11. Peculiarities of management of elderly patients after assessment

After performing a geriatric assessment:

- an individual treatment plan is drawn up;
- the priority of interventions is determined;



- drug therapy is adjusted;
- preventive work is being intensified;
- the patient's relatives are involved.

12. Preventive value of geriatric assessment

Geriatric assessment allows:

- identify diseases at early stages;
- prevent complications;
- reduce the risk of emergency conditions;
- improve the quality of dental care;
- improve the treatment prognosis.

13. Conclusion

Geriatric assessment is a crucial step in the dental care of an elderly patient. It provides a comprehensive approach that considers not only the patient's oral health but also their overall health, functional capabilities, and social circumstances.

The use of geriatric assessment can improve treatment safety, reduce the risk of complications, and provide personalized dental care to older adults.

LECTURE 9. NUTRITION PROBLEMS IN THE ELDERLY AND IMPACT ON ORAL HEALTH

1. Introduction

Nutrition is one of the key factors determining overall human health, especially in older age. Elderly patients experience significant changes in eating behavior, which are directly related to the condition of the dental system, the presence of teeth, the quality of prosthetics, and general somatic diseases.

In gerontostomatology, nutrition is considered an important factor influencing:

- condition of teeth and periodontium;
- development of caries and diseases of the mucous membrane;
- tissue healing processes;
- adaptation to prostheses;
- the patient's overall quality of life.

Eating disorders in older people are often multifactorial and require a comprehensive approach.



2. Age-related changes affecting nutrition

As we age, physiological changes occur in the body that directly impact eating behavior:

2.1. Decreased chewing function

- loss of teeth (partial or complete adentia);
- decreased chewing efficiency;
- limiting chewing of solid food;
- one-sided chewing in the presence of defects in the dental arches.

2.2. Changes in salivation

- decreased secretion of saliva (xerostomia);
- deterioration of the formation of the food bolus;
- difficulty swallowing;
- change in taste sensations.

2.3. Changes in the digestive system

- decreased enzymatic activity;
- impaired absorption of nutrients;
- decreased appetite.

3. Main nutritional problems in the elderly

3.1. Dietary restrictions

Due to dental problems, older patients often switch to:

- soft food;
- porridge-like dishes;
- limited range of products.

This leads to:

- protein deficiency;
- lack of vitamins and minerals;
- reducing the overall nutritional value of the diet.

3.2. Chewing and swallowing disorders

Reasons:



- absence of teeth;
- poorly fixed dentures;
- diseases of the mucous membrane;
- decreased muscle tone.

Consequences:

- refusal of solid food;
- reduction in dietary diversity;
- risk of food aspiration.

3.3. Decreased appetite

Factors:

- depression;
- loneliness;
- chronic diseases;
- side effects of medications.

3.4 Social reasons

- low income;
- limited access to quality products;
- lack of assistance in cooking;
- loneliness.

4. The influence of nutrition on oral health

4.1. Protein deficiency

- slowing down of tissue regeneration;
- impaired wound healing;
- decreased immune protection of the mucous membrane.

4.2. Vitamin deficiency

Vitamin A:

- dryness of the mucous membrane;
- decreased epithelial regeneration.

B vitamins:

- glossitis;
- stomatitis;



- cracks in the corners of the mouth.

Vitamin C:

- bleeding gums;
- deterioration of the periodontal condition.

Vitamin D and calcium:

- osteoporosis of the jaws;
- bone loss.

4.3. Excess carbohydrates

- increased risk of caries;
- activation of cariogenic microflora;
- accelerated tooth decay.

5. The influence of dental status on nutrition

The condition of the oral cavity directly determines the nature of nutrition:

5.1. Tooth loss

- inability to chew solid food;
- transition to soft and carbohydrate foods;
- nutritional imbalance.

5.2. Poor fixation of dentures


- pain when chewing;
- refusal to wear prostheses;
- decreased nutritional efficiency.

5.3. Diseases of the mucous membrane

- pain when eating;
- dietary restriction;
- decreased appetite.

6. Consequences of poor nutrition

Nutritional deficiencies in elderly patients lead to systemic consequences:

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

- weight loss;
- sarcopenia (loss of muscle mass);
- weakened immunity;
- slow tissue healing;
- deterioration of the general condition of the body;
- progression of chronic diseases.

In dentistry this manifests itself:

- deterioration of the periodontal condition;
- progression of caries;
- bone tissue atrophy;
- decreased adaptation to prostheses.

7. The role of the dentist in nutritional correction

The dentist plays an important role in restoring normal nutrition:

7.1. Restoration of chewing function

- timely prosthetics;
- restoration of the integrity of the dental arches;
- bite correction.

7.2. Improving adaptation to prostheses

- individual selection of design;
- correction of prostheses;
- teaching the patient how to use prostheses.

7.3. Disease prevention

- treatment of caries and periodontitis;
- prevention of xerostomia;
- monitoring the condition of the mucous membrane.

8. Nutritional recommendations for elderly patients

The diet should be:

- balanced;
- rich in proteins;
- sufficient in vitamins and minerals;
- easy to chew, but not completely crushed.



Recommended products:

- dairy products;
- fish and lean meat;
- vegetables and fruits;
- porridge;
- foods rich in calcium.

Restrictions:

- overly sweet food;
- sticky carbohydrates;
- very hard food when there are no teeth;
- alcohol.

9. Interdisciplinary approach

Nutritional correction requires the participation of:

- dentist;
- therapist;
- nutritionist;
- geriatrician;
- if necessary, a psychologist.

10. The preventive value of nutrition

Proper nutrition contributes to:

- reducing the risk of caries;
- improving the condition of the periodontium;
- acceleration of tissue healing;
- maintaining immunity;
- improving the quality of life of the elderly patient.

11. Conclusion

Nutrition in older adults is closely linked to dental health and is a critical health factor in geriatric dentistry. Nutritional deficiencies lead to systemic and localized changes that worsen oral health and overall patient well-being.

Dental rehabilitation aimed at restoring chewing function is a key element in normalizing nutrition and improving the quality of life of older people.



2.2. Development of practical/seminar/laboratory classes

5th semester

Practical Lesson #1. Introduction to Gerontostomatology

1. Objective of the lesson

To study the subject and objectives of gerontostomatology, the specifics of dental care for elderly patients, as well as the basic principles of a dentist's work in geriatric practice.

2. Educational technologies

- Pre-test
- Analysis of clinical situations
- Group discussion
- Patient analysis (case method)
- Post-test

3. Basic concepts

- gerontostomatology
- elderly patient
- geriatrics
- polymorbidity
- age-related changes
- dental rehabilitation

4. Lesson content

Gerontostomatology studies the structure, function, and pathology of the oral cavity in older adults. It is becoming one of the most relevant disciplines today due to increasing life expectancy and the growing number of elderly patients.

4.1. Objectives of gerontostomatology

- study of age-related changes in the dental system
- diagnosis of age-related diseases
- treatment and prevention of dental pathologies
- rehabilitation of patients with edentia

4.2. Characteristics of the elderly patient

- presence of chronic diseases
- decreased immunity



- psychological characteristics
- decreased adaptive capacity

4.3. Role of the dentist

- integrated approach
- individual treatment
- interdisciplinary interaction

5. Clinical significance

Understanding the basics of gerontostomatology allows you to:

- plan treatment correctly
- take into account age-related characteristics
- reduce the risk of complications
- improve the patient's quality of life

6. Self-control

- What does gerontostomatology study?
- age groups of patients
- characteristics of an elderly patient
- objectives of the discipline

Practical Lesson #2. Age-Related Changes in the Oral Cavity

1. Objective of the lesson

To study age-related changes in teeth, periodontium, mucous membrane and salivary glands in elderly patients.

2. Educational technologies

- Pre-test
- Working with dummies and diagrams
- Analysis of radiographs
- Clinical analysis
- Post-test

3. Basic concepts

- atrophy
- dentin sclerosis
- gum recession



- xerostomia
- osteoporosis
- age-related changes

4. Lesson content

Age-related changes in the oral cavity are a physiological process that affects all structures of the dental system.

4.1. Dental changes

- enamel abrasion
- dentin sclerosis
- pulp reduction
- decreased sensitivity

4.2. Periodontal changes

- gum recession
- alveolar bone atrophy
- tooth mobility

4.3. Mucous membrane

- thinning
- dryness
- decreased regeneration

4.4. Salivary glands

- decreased salivation
- changes in the composition of saliva

5. Clinical significance

- increased risk of caries
- complexity of prosthetics
- deterioration of fixation of prostheses

6. Self-control

- dental changes
- periodontal changes
- changes in the mucous membrane



- causes of xerostomia

Practical Lesson #3. Atrophy and Osteoporosis of Oral Tissue

1. Objective of the lesson

To study the mechanisms of development of jaw atrophy and osteoporosis and their impact on dental treatment.

2. Educational technologies

- Pre-test
- Radiograph analysis
- Working with jaw models
- Solving clinical problems
- Post-test

3. Basic concepts

- atrophy
- osteoporosis
- alveolar process
- bone resorption
- chewing load

4. Lesson content

Atrophy and osteoporosis are key age-related changes in the jaw bone tissue.

4.1. Bone tissue atrophy

- decrease in the height of the alveolar process
- bone loss
- tooth loss intensifies the process

4.2. Osteoporosis

- decreased bone density
- bone fragility
- microarchitectural disturbance

4.3. Risk factors

- lack of teeth
- hormonal changes



- hypodynamia
- calcium deficiency

5. Clinical significance

- instability of prostheses
- complications of implantation
- change in bite

6. Self-control

- causes of atrophy
- signs of osteoporosis
- impact on prosthetics

Practical Lesson #4. Diseases of the Mucous Membrane in the Elderly

1. Objective of the lesson

To study the clinical forms of diseases of the oral mucosa in elderly patients.

2. Educational technologies

- Pre-test
- Examination of clinical photographs
- Case studies
- Working with differential diagnostics
- Post-test

3. Basic concepts

- candidiasis
- stomatitis
- glossitis
- denture stomatitis
- xerostomia

4. Lesson content

The mucous membrane in elderly patients is often subject to inflammatory and degenerative changes.

4.1. Main diseases

- candidiasis



- chronic stomatitis
- glossitis
- denture stomatitis

4.2. Reasons

- decreased immunity
- xerostomia
- prosthetic injury
- chronic diseases

5. Clinical significance

- chronic course
- risk of complications
- patient discomfort

6. Self-control

- types of stomatitis
- causes of candidiasis
- Features of denture stomatitis

Practical lesson #5. Precancerous diseases of the oral mucosa

1. Objective of the lesson

To master the diagnosis and clinical signs of precancerous diseases of the mucous membrane.

2. Educational technologies

- Pre-test
- Clinical photos
- Differential diagnosis
- Analysis of biopsies
- Post-test

3. Basic concepts

- leukoplakia
- erythroplakia
- dysplasia
- keratosis
- malignancy



4. Lesson content

Precancerous lesions require special attention due to the risk of developing cancer.

4.1 Basic forms

- leukoplakia
- erythroplakia
- chronic ulcers
- papillomatosis

4.2. Danger signs

- long-term course
- compaction
- color change
- bleeding

5. Clinical significance

- risk of cancer
- need for biopsy
- early diagnosis

6. Self-control

- forms of leukoplakia
- signs of erythroplakia
- the concept of dysplasia

Practical Session #6: Socioeconomic Issues of the Elderly and Their Impact on Dental Health

1. Objective of the lesson

To examine the social and economic factors influencing access to dental care in older patients and their consequences for oral health.

2. Educational technologies

- Pre-test
- Analysis of statistical data
- Case analysis (social situations of patients)
- Group discussion



- Post-test

3. Basic concepts

- social barriers
- economic accessibility
- dental care
- quality of life
- oral hygiene
- prevention

4. Lesson content

Socioeconomic factors are a key determinant of the dental health of older adults. They determine not only the frequency of dental visits but also the extent of care received.

4.1. Main social problems

- low income
- loneliness
- social isolation
- limited mobility
- dependence on relatives

4.2. Economic barriers

- high cost of treatment
- limited insurance coverage
- unavailability of prosthetics
- refusal of prevention due to financial reasons

4.3. Accessibility of dental care

- distance of clinics
- lack of transport accessibility
- lack of geriatric programs

5. Impact on dental health

- late visit to the doctor
- high incidence of edentia
- poor oral hygiene
- advanced forms of diseases



- deterioration in the quality of prosthetics

6. Clinical significance

Social factors directly influence:

- prevalence of caries
- periodontal diseases
- the need for complex prosthetics
- overall quality of life

7. Self-control

- main social barriers
- the impact of the economy on dentistry
- consequences of late treatment

Practical Session #7. Polymorbidity and Pharmacology in Gerontostomatology

1. Objective of the lesson

To study the impact of multiple diseases and drug therapy on oral health and dental treatment in elderly patients.

2. Educational technologies

- Pre-test
- Analysis of clinical cases
- Analysis of medicinal preparations
- Working with the patient's medical history
- Post-test

3. Basic concepts

- polymorbidity
- polypharmacy
- xerostomia
- drug interactions
- systemic diseases

4. Lesson content

Elderly patients often have multiple chronic conditions, which significantly complicates dental treatment.



4.1. The most common diseases

- hypertension
- diabetes mellitus
- coronary heart disease
- gastrointestinal diseases
- arthritis

4.2. Polypharmacy

Taking a large number of drugs at the same time:

- antihypertensive
- anticoagulants
- antidepressants
- diuretics

4.3. Effect on the oral cavity

- dryness (xerostomia)
- bleeding gums
- slow healing
- candidiasis
- change in taste

4.4. Dangerous drug effects

- osteonecrosis (bisphosphonates)
- bleeding (anticoagulants)
- hyposalivation

5. Clinical significance

- the need for treatment adjustments
- high risk of complications
- limitation of surgical interventions

6. Self-control

- concept of polymorbidity
- the effect of drugs on the mucous membrane
- main groups of drugs at risk



Practical Session #8. Geriatric Patient Assessment

1. Objective of the lesson

To master methods of comprehensive geriatric assessment of a dental patient.

2. Educational technologies

- Pre-test
- Analysis of rating scales
- Working with patient cases
- Simulation of patient admission
- Post-test

3. Basic concepts

- geriatric assessment
- functional status
- cognitive functions
- ADL
- risk of treatment

4. Lesson content

Geriatric assessment is a comprehensive examination of an elderly patient that takes into account medical, functional and social factors.

4.1 Medical assessment

- chronic diseases
- degree of compensation
- medications taken

4.2 Functional assessment

- ability to self-care
- mobility
- chewing function

4.3. Cognitive assessment

- memory
- orientation
- understanding instructions



4.4 Social assessment

- living conditions
- family support
- availability of assistance

5. Importance in dentistry

- choice of treatment tactics
- assessment of the risk of complications
- prosthetic planning

6. Self-control

- components of geriatric assessment
- ADL scale
- patient risk levels

Practical Session #9: Nutrition in the Elderly and Its Impact on the Oral Cavity

1. Objective of the lesson

To study the impact of nutrition on the dental health of elderly patients and develop recommendations for dietary adjustments.

2. Educational technologies

- Pre-test
- Analysis of diets
- Clinical cases
- Group discussion
- Post-test

3. Basic concepts

- diet
- nutrients
- xerostomia
- chewing function
- vitamin deficiency



4. Lesson content

The nutrition of elderly patients is directly related to the condition of the dental system.

4.1. Nutritional disorders

- restriction of solid food
- protein and vitamin deficiency
- monotonous diet
- loss of appetite

4.2. Reasons

- lack of teeth
- poorly fixed dentures
- diseases of the mucous membrane
- xerostomia

4.3. Effect on the oral cavity

- caries
- periodontitis
- glossitis
- slow healing

4.4 Vitamin deficiency

- A - dry mucous membrane
- B - stomatitis, cracks
- C - bleeding gums
- D - osteoporosis

5. Clinical significance

- deterioration of general condition
- decreased immunity
- progression of dental diseases

6. Self-control

- causes of eating disorders
- the influence of vitamins
- the connection between nutrition and 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 "Gerontostomatology", 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;



WITH 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.

	Educational institution Royal Metropolitan University
	Quality management system Teaching and Methodological Complex of the discipline "Gerontostomatology" Department of Dental Disciplines of the Educational Institution "RMU" 560004 "Dentistry"

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

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

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

Abstract evaluation criteria:

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

3.5. Guidelines for preparation for final certification.

Final certification in the form of a test in the discipline "Gerontostomatology" is carried out based on the results of attending classes, current and midterm (modular) control.

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

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

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

3.6. Methodological recommendations for student research work.



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

The main objectives and results of the research work are:

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

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

- independent search for information on a given topic;
- selection of essential information necessary for full coverage of the problem being studied, separation of this information from secondary information (within the framework of a given topic);
- analysis and synthesis of knowledge and research on the problem;
- generalization and classification of information on research problems;
- logical and consistent disclosure of the topic;
- generalization of psychological knowledge on the problem and formulation of conclusions from a literature review of the material;
- stylistically correct presentation of scientific thought of the abstract type;
- competent design of scientific abstract text;
- correct presentation of scientific work;
- creation of a glossary of terminology;
- role-playing games and trainings on a given topic, discussions, situational tasks.

For research work, a senior student must do the following:

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



In order to conduct research work, it is recommended for 10th semester students:

- participate in a scientific project, scientific conference;
- manage a planned or standardized patient under the guidance of a teacher;
- present a prepared report at a conference;
- study and analyze programs and clinical protocols on a given topic.

4. Glossary

- **Abutment**— an element that connects a dental implant to a crown or other prosthesis.
- **Abscess**— limited purulent inflammation, accompanied by the formation of a cavity filled with pus.
- **Agaliya**- decreased or complete absence of salivation.
- **Adaptation to treatment**— the process of acclimating a child to dental procedures, often using behavioral techniques.
- **Prosthesis adaptation**— the process of the patient getting used to wearing a prosthesis, including functional and psychological aspects.
- **Adhesion**— the ability of materials to firmly adhere to dental tissues.
- **Actinic cheilitis**— chronic inflammation of the lips caused by prolonged sun exposure; often seen in the elderly.
- **Alveolitis**- inflammation of the tooth socket after its extraction (often called "dry socket").
- **Anatomy of a baby tooth**— structural features of a temporary tooth: thin enamel, large pulp chamber, short roots.
- **Anesthesia**— anesthesia. In surgical dentistry, conduction, infiltration, topical, and intraligamentary anesthesia are most commonly used.
- **Malocclusion**— deviation from physiological occlusion; can develop from an early age.



- **Tooth apathy**— the absence of a tooth's response to thermal or electrical stimuli often indicates pulp necrosis.
- **Atypical removal**— complex tooth extraction requiring root cutting, flap cutting, trepanation, etc.
- **Alveolar ridge atrophy**— a decrease in the volume of jaw bone tissue after tooth loss; a common problem in the elderly.
- **Gum atrophy**— a decrease in the volume of the gums, often accompanied by exposure of the roots of the teeth.
- **Beam prosthesis**— a prosthesis fixed on implants or teeth using a beam system.
- **Biopsy**— taking a tissue sample for histological examination.
- **Biopsy**— taking a tissue sample for histological examination (for example, suspicious formations on the mucous membrane).
- **Biocompatibility of prostheses**— the ability of materials not to cause allergies, toxic or irritating effects in weakened patients.
- **Paget's disease**— a chronic bone disease that can affect the jaws and complicate dental treatment.
- **Bruxism**- involuntary grinding or clenching of teeth, often during sleep.
- **Bruxism in children**— grinding teeth in sleep may be associated with emotional stress or the development of a bite.
- **Tubercular anesthesia**— a type of infiltration anesthesia used in the upper jaw.
- **Baby bottle caries**- early childhood caries, which occurs due to prolonged contact of teeth with formula, juices or breast milk at night.
- **Clasp denture**— a removable denture with a metal arch base that evenly distributes the chewing load.
- **Vestibuloplasty**— surgical correction of the vestibule of the oral cavity (often performed during prosthetics).



- **Vestibuloplasty**— surgical deepening of the oral vestibule, often necessary before prosthetics in cases of severe tissue atrophy.
- **Temporomandibular joint (TMJ)**— the joint between the lower jaw and the skull, often involved in trauma or inflammatory processes.
- **Vital pulpotomy**— partial removal of the pulp while maintaining its viability.
- **Susceptibility to infections**— decreased local immunity of the oral mucosa in the elderly.
- **Tooth restoration**— the process of restoring the shape, function and aesthetics of a damaged tooth (for example, with inlays, crowns).
- **Temporary crown**— a temporary covering of the prepared tooth, protecting it until the permanent structure is installed.
- **Temporary filling**— a material that temporarily fills a tooth cavity until a permanent filling is placed.
- **Temporary filling**— a filling material placed for a short period of time, often in anticipation of permanent treatment.
- **Temporary (baby) bite**— a full set of baby teeth, usually formed by 2.5–3 years.
- **Hematoma**— accumulation of blood in soft tissues after injury or surgery.
- **Hemisection**— removal of one of the roots of a multi-rooted tooth with part of the crown.
- **Fissure sealing**— a preventive procedure: filling fissures (grooves) on chewing teeth to protect against caries.
- **Sleeve crown**— a one-piece cast metal crown that covers the entire tooth.
- **Gingivitis**- inflammation of the gums without disruption of the gingival attachment.
- **Enamel hypoplasia**— a congenital or acquired disorder of enamel formation, often manifested in the form of spots, grooves or chips.



- **Hyposalivation**— decreased salivation, especially when taking medications (antidepressants, antihypertensive drugs, etc.).
- **Glossalgia**— a burning pain or discomfort in the tongue, often without apparent cause, often associated with psychosomatics or vitamin deficiency.
- **Gnathology**— the science of the function of the masticatory apparatus, especially the temporomandibular joint (TMJ).
- **Granuloma**— a chronic inflammatory focus at the apex of the tooth root, surrounded by connective tissue.
- **Cyst decompression**— a surgical method of reducing the size of a cyst while preserving teeth.
- **Dementia**- cognitive impairment that complicates oral hygiene and treatment.
- **Dental implants**— artificial roots implanted into the jawbone to fix dentures.
- **Dentine**— hard tissue of the tooth under the enamel, the main mass of the crown and root.
- **Depophoresis**— a method of treating root canals using electric current and medications.
- **Gums in children**— the mucous membrane covering the alveolar process in children is looser and prone to swelling and inflammation.
- **Dental defect**— absence of one or more teeth, subject to orthopedic treatment.
- **Dissection**- tissue dissection.
- **Dysphagia**- difficulty swallowing, often requires a special approach when fitting prosthetics.
- **Dysfunction of the masticatory muscles**— dysfunction of the muscles involved in chewing can manifest itself as clicking, pain, and asymmetry.
- **Chewing trauma**- chronic damage to the mucous membrane due to biting, nipping, or an uncomfortable prosthesis.



- **Chewing efficiency**— the patient's ability to fully chew food with a prosthesis.
- **Burning mouth syndrome**- a burning or tingling sensation, more often in elderly women, in the absence of visible pathology.
- **Dystopic tooth**- a tooth that has erupted in an incorrect position (for example, outside the dental arch).
- **Erupting tooth**— a tooth going through the eruption stage often causes discomfort, salivation, and capriciousness.
- **Impacted tooth**— a tooth that has not fully erupted due to anatomical or pathological reasons (often wisdom teeth).
- **Dental formula of children**— children have 20 baby teeth (temporary bite).
- **Tartar**- mineralized dental plaque.
- **Tartar**— often develops faster due to changes in the composition of saliva and poor hygiene.
- **Dental bridge**— a fixed structure that replaces missing teeth by supporting them on adjacent teeth.
- **Dental plaque**— soft plaque on teeth containing bacteria and food debris, a precursor to tartar.
- **Denture**— an orthopedic structure that restores partially or completely lost teeth.
- **Denture**— the primary means of restoring dental health in the elderly; they can be full or partial, removable or fixed.
- **Game adaptation**— a method of psychologically preparing a child for treatment through games, stories, and demonstrations.
- **Immediate prosthesis**— a temporary prosthesis installed immediately after tooth extraction.
- **Immunosenescence**- age-related decrease in immune protection, which increases the risk of inflammation in the oral cavity.



- **Dental implantation**— installation of an artificial titanium root (implant) in the jaw for subsequent prosthetics.
- **Caries indexing**— quantitative assessment of the prevalence and intensity of caries in a child (for example, the KPU index).
- **Personal hygiene**— adaptation of teeth cleaning methods to the patient's physical and cognitive capabilities.
- **Individual spoon**— a device for taking an accurate impression of the dentition and mucous membrane.
- **Incision**- dissection of soft tissues (for example, when opening an abscess).
- **Canal irrigation**— rinsing the root canal with antiseptic solutions for disinfection.
- **Oral candidiasis**- fungal infection, often observed with xerostomia, wearing dentures or taking antibiotics.
- **Children's mouthguard**— a silicone or plastic overlay on teeth for protection (for example, during bruxism, sports).
- **Caries**— destruction of hard dental tissues under the influence of acids produced by bacteria.
- **Deciduous tooth decay**— destruction of the hard tissues of the baby tooth; develops faster than in adults due to anatomical features.
- **Ceramic crown**— an aesthetic crown made of zirconium dioxide, porcelain or glass ceramics.
- **Cystectomy**— removal of a dental cyst along with the root apex.
- **Clammer**— a metal element of a clasp or partial removable denture that holds it on the supporting teeth.
- **Wedge-shaped defect**— non-carious lesion of the tooth in the neck area, in the form of a wedge-shaped notch.
- **Moller's Ring**- ring-shaped hyperemia of the gums around the erupting tooth.



- **Comprehensive rehabilitation**— restoration of the entire dental system (in case of complete edentia or severe bite deformations).
- **Corticotomy**— removal of the cortical (outer) bone plate to access the lesion.
- **Xerostomia**— a feeling of dry mouth; a common complaint among the elderly, especially when treating chronic diseases.
- **Curettage**— scraping of pathological tissues (for example, granulomas from a socket or periodontal pocket).
- **Mucosal lability**- increased sensitivity of the mucous membrane, leading to irritation upon contact with dentures.
- **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 a removable denture 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 Teaching and Methodological Complex of the discipline "Gerontostomatology" 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.