Lviv National Medical University

named after Danylo Halytsky

Department of Pediatric Dentistry

Methodical instructions

for independent work on the subject

"Propaedeutics of pediatric therapeutic dentistry"

training of specialists of the second (master's) level of higher education

For 2nd year students of the dental faculty

LVIV – 2021

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Considered and approved on meeting of Pediatric Dentistry Department (protocol № 7, from 9 of April 2021) and Profiled Methodical Commission of Dental faculty (protocol № 2, from 29 of April 2021)

Methodical recommendations were discussed, re-approved and confirmed at the meeting of the Department of Pediatric Dentistry of Lviv National Medical University named after Danylo Halytsky

Protocol № 1 from « 31 » _____August_____2021

Protocol № from « » _____202

Protocol № from « » _____202

Protocol № from « » _____202

Protocol № from « » _____202

Responsible for the issue

Vice-Rector for Academic Affairs, Professor M.R. Grzegotskyy

Discipline lesson plan

"Propaedeutics of pediatric therapeutic dentistry"

Second year, 4th semester

Total hours 90/3 credits

(lectures - 10 hours, practical classes - 30 hours, VTS - 50 hours)

THEMATIC PLAN OF THE LECTURES

№	Theme of the lectures
1.	Historical stages of development of Pediatric Dentistry. Anatomical, morphological, histological and roentgenological features of a tooth, jaw system in children at different age period. Physiology of teeth eruption. Physiological signs of teeth eruption.
2.	The main principles of preparation of the hard tissues in children. The conditions of painless preparation. Peculiarities of preparation of the different classes of carious cavities of primary and permanent teeth in children.
3.	Dental filling materials for primary and permanent teeth. The main physycal-chemical and biological properties of filling materials. Classification. The basic criteria of choice. Peculiarities of filling of carious cavities with different materials.
4.	Modern endodontic tools. Classification, indication, technique of using.
5.	Principles of instrumental and medicamentous treatment of root canals in Pediatric Dentistry. Filling of root canals of primary and permanent teeth in children.

THEMATIC PLAN OF THE PRACTICAL LESSONS

	Theme of the lesson	Hour
1.	Organization of work in dental clinic. Dental equipment and instruments, their types and indications. Disinfection and sterilization of the dental equipment and instruments. The main principles of four-handed dentistry.	2
2.	Topographical and anatomical peculiarities of anatomy of primary and permanent teeth on the different stages of its development. Making of phantoms with plastic and hard materials.	2
3.	Physiology and pathology of teeth eruption. Terms of root formation and resorption of primary and permanent teeth.	2

4.	The main rules and stages of preparation of carious cavities, elements of the carious cavity. Necessary tools for preparation of carious cavities.	2
5.	Preparation of Class I and V cavities in primary and permanent teeth with unformed root. Choice of instruments.	2
6.	Preparation of Class II, III, IV cavities in primary and permanent teeth with unformed root. Choice of the instruments.	2
7.	Classification of filling materials, its peculiarities and indications for use.	2
8.	Filling of carious cavities of Class I, Class V in primary and permanent teeth with dental cements and amalgam.	2
9.	Technique of filling of Class II restoration with dental cements and amalgam of primary and permanent teeth. Forming of the contact point.	2
10.	Resin based composites and compomers. Technique of filling of Class I and V carious cavities of primary and permanent teeth.	2
11.	Technique of filling of Class III and IV carious cavities of primary and permanent teeth in children. Restoration of the form, color of the tooth and the contact point.	2
12.	Technique of the instrumental and medicamental treatment of root canals of primary and permanent teeth with unformed roots. Modern endodontic instruments: types, indications, choice.	2
13.	Filling materials for the temporary and permanent obturation of root canals. Technique of filling of root canals of primary teeth.	2
14.	Technique of filling of root canals of permanent teeth at different stages of formation. The concept of apexogenesis and apexification.	2
15.	Differentiated credit	2
	Whole	30

Thematic plan of independent work of students

№ п/п	**Тема занять**	Hours	**Types of control**
1.	**Preparing the practical, seminar lessons (theme: 1-14)**	**28**	**Current:** during practical classes
2.	**Independent work that are not included in the plan of auditor lessons.**	**22**	**Current:** during practical classes

	1. Modern conceptions of the carious cavity preparation(by Black, Lukomskyi, preparing for the preventive filling). Alternative methods of removing of carious injured tissues (chemical mechanical preparation of the carius cavities in children, ART-method)	3	
	2. Modern matrix systems and matrix holders. The technique of restoration of the contact point during the dental filling.	4	
	3. Final polishing of the filling with various filling materials: the choise of the instruments, accessories, technique of completion.	4	
	4. Modern photopolymer lamps: types, indications, control of the lamp power. Protective means for the dentist and patient.	3	
	5. Modern materials for the permanent root obturation in permanent teeth: Calcium containing, polymeric, glass-ionomer and zinc-oxyde eugenol materials. There properties, technique of the use.	4	
	6. Adhesive systems and there use in dentistry. Types, compositions,features, technique of use.	4	
	Whole	**50**	

Independent work is an independent elaboration of topics in extracurricular time that are not included in the plan of practical classes, theoretical elaboration of practical skills and abilities.

The plan of independent work also includes preparation for practical classes, study of the material of the main subject, compilation of short summaries (topics 1-14 of the thematic plan of practical classes).

Purpose: to study topics independently and to study issues that are not included in the thematic plan of practical classes.

Topic 1.

Modern concepts of preparation of carious cavities (according to Black, Lukomsky, preparation for preventive sealing). Alternative methods of removal of cariously affected tissues (chemical-mechanical preparation of carious cavities in children, ART-technique).

Purpose: to learn the features of preparation of carious cavities by different methods in temporary and perTasks for independent work:

write in a notebook the main issues of the topic:

- Principles of preparation of carious cavities according to Black;

- Principles of preparation of carious cavities according to Lukomsky;

- Principles of preparation of carious cavities according to Mount;

- What is preventive sealing, features of preparation of a carious cavity;

- ART - method of preparation, the possibility of its use in temporary and permanent teeth;

- chemical-mechanical method of preparation of carious cavities, reagents, tools, quality of preparation;

- air-abrasive method of preparation of carious cavities, equipment;

carious cavities.manent teeth, to know the differences between them.

- laser method of preparation of carious cavities, equipment;

- comparative characteristics of different methods of preparation of carious cavities.

Questions for self-control:

1. Classification of carious cavities according to Black.

2. Stages of preparation of carious cavities.

3. Name the main elements of the carious cavity.

4. Tools for preparation of carious cavities.

5. Criteria for assessing the quality of preparation of carious cavities.

6. Features of preparation of carious cavities in temporary teeth.

7. Conditions of painless preparation of carious cavities.

8. Methods for assessing the quality of preparation of carious cavities.

Main literature:

1. Coronavirus Disease 19 (COVID-19): Implications for Clinical Dental Care

Amber Ather, ... Kenneth M. Hargreaves. May 2020

2. Paediatric dental care during and post-COVID-19 era: Changes and challenges ahead. Weijia Luo, ... Harleen Kumar. In Press, Corrected Proof, Available online 28 January 2021

3. Shrinkage stress and cuspal deflection in MOD restorations: analytical solutions and design guidelines Wondwosen A. Aregawi, Alex S.L. Fok In Press, Corrected Proof, Available online 19 February 2021.

Topic 2.

Modern matrix systems and matrix holders. Technique of restoration of a contact point at filling of teeth

Objective: To get acquainted with modern matrix systems and matrix holders, to learn to use them in different clinical situations.

Tasks for self-study:

write in a notebook the main issues of the topic:

- what is a contact point, its types, value in the restoration of carious cavities of the 2nd class;

- classification of matrices;

- types of devices for fixing matrices in the oral cavity (matrix holders);

- what are matrix systems. Questions for self-control:

1. Technique of filling carious cavities of the 2nd class with glass ionomer materials.

2. Technique of filling carious cavities of the 2nd class with composite materials.

3. Technique of filling carious cavities of the 2nd class with amalgams.

Main literature:

1. Eduardo G. Mota, Karthikeyan Subramani, in Emerging Nanotechnologies in Dentistry (Second Edition), 2018.

2. Shrinkage stress and cuspal deflection in MOD restorations: analytical solutions and design guidelines Wondwosen A. Aregawi, Alex S.L. Fok In Press, Corrected Proof, Available online 19 February 2021.

Topic 3.

Finishing of seals from various sealing materials: a choice of tools, accessories, performance technique.

Objective: To study the method of finishing seals from different filling materials, the importance of this manipulation.

Tasks for self-study:

write down in a notebook the main issues of the topic

- what is the finishing of the seal;

- correction of the seal on the occlusal surface;

- what is the overhanging edge of the filling, its role in the occurrence of periodontal disease;

- tools needed for grinding and polishing the seal;

- pastes for polishing seals, their characteristics;

- technical features of finishing of seals from various sealing materials.

Main literature:

1. Nanotechnology in dentistry: Present and future perspectives on dental nanomaterials. Klaus D. Jandt, David C. Watts. November 2020
2. Eduardo G. Mota, Karthikeyan Subramani, in Emerging Nanotechnologies in Dentistry (Second Edition), 2018.

Topic 4.

Modern photopolymerizers: types, purpose, lamp power control. Means of protection of the doctor and the patient.

Purpose: to get acquainted with the types of photopolymer lamps, rules of work with them, features of polymerization of seals

Tasks for self-study:

- write down in a notebook the main issues of the topic

- physical properties of photopolymer lamps, their mode of operation;

- types of photopolymer lamps, features of their work;

- testing and control of lamp power;

- means of protection of the doctor during polymerization;

- protection of the patient during polymerization;

Questions for self-control

1. Physical properties of photopolymer lamps

2. Advantages of composite restorations of light hardening

3. Types of photopolymer filling materials

Main literature:

1.Evidence-based clinical practice guideline on nonrestorative treatments for carious lesions: A report from the American Dental Association. Rebecca L. Slayton, ... Alonso Carrasco-Labra. October 2018

2. Comparison of high viscosity glass ionomer cement to composite restorations placed in primary teeth under general anesthesia. Pediatric Dental Jornal. Sharat Chandra Pani. December 2018

Topic 5.

Adhesive systems and their application in dentistry. Types, composition, properties, application technique.

Purpose: to get acquainted with different generations of adhesive systems, to know the methods of their application.

Tasks for self-study:

- write down in a notebook the main issues of the topic
- classification of composite materials;
- classification of adhesive systems;
- the main representatives of adhesive systems of different generations;
- chemical composition of adhesives;
- properties of adhesive systems;
- technique of application of adhesive systems of different generations;
- self-etching adhesive systems, positive and negative aspects of their use.

Questions for self-control

1. Features of preparation of carious cavities of different localization for composite materials.

2. Drug treatment of carious cavities before filling.

3. Indications for the use of composite materials for filling temporary and unformed permanent teeth.

4. Comparative characteristics of adhesive systems of different generations

Main literatutre:

1. Divisions in Dentistry. In A Consumer's Guide to Dentistry (Second Edition), 2002

2. Terence E. Donovan, Lee W. Boushell, R. Scott Eidson. Instruments and Equipment for Tooth Preparation. Sturdevant's Art and Science of Operative Dentistry, 2019.

Topic 6.

Modern materials for permanent otbturation of root canals in permanent teeth. Calcium-containing, polymeric, glass ionomer, zinc oxide deugenol. Their properties, application technique.

Tasks for self-study:

- write down in a notebook the main issues of the topic

- requirements for materials for permanent obturation of root canals of permanent teeth;

- classification of materials for permanent obturation of root canals of permanent teeth;

- advantages and disadvantages of different materials for permanent obturation of the root canals of temporary teeth;

- solid materials (fillers) for root canal obturation, properties of gutta-percha;

- technique of temporary obturation of root canals in permanent teeth with unformed root;

- methods of permanent obstruction of the root canals of permanent teeth.

Questions for self-control

1. Instrumental treatment of root canals of permanent teeth, its varieties.

2. Tools and devices for obturation of root canals of temporary and permanent teeth.

3. Algorithms for filling the root canals of permanent teeth by different methods.

4. Describe the technique of lateral condensation of cold gutta-percha.

5. Filling of root canals of unformed permanent teeth. Apexogenesis and apexification.

6. Materials for apexogenesis and apexification - biodentin, AIT, bioceramics.

Main literature:

1. B.S. Chong, in Harty's Endodontics in Clinical Practice (Sixth Edition), 2010.

2. Influence of Access Cavity Preparation and Remaining Tooth Substance on Fracture Strength of Endodontically Treated Teeth. Giacomo Corsentino, ... Simone Grandini. September 2018