

**Lviv National Medical University  
named after Danylo Halytsky  
Department of Pediatric Dentistry**

**Methodical instructions  
for independent work on the subject  
"Prevention of pediatric therapeutic dentistry"  
training of specialists of the second (master's) level of higher education  
For 3-rd year students of the dental faculty**

**LVIV – 2021**

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**Responsible for the issue**

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

## THEMATIC PLAN OF THE PRACTICAL LESSONS

### Prevention of the dental diseases

3<sup>rd</sup> year, 6<sup>th</sup> term 2020-2021 years

№	Theme	Hours
1	Endogenic dental caries prevention. Interaction with pediatrician. Planning, methods of conducting.	2
2	The role of nutrition in the dental caries prevention in children. Cariogenic food and the ways of reducing its action.	2
3	Systemic using of fluorides. Mechanism of caries protective action of fluorides.  Systemic using of micro- and macroelements, vitamins depending on age of child.	2
4	Exogenic dental caries prevention in age aspect. Means, indication and methods of using.	2
5	Practical mastering of different methods of exogenic prevention in children.	2
6	Fissure sealing. Means, indication and methods of using.	2
7	Practical mastering of fissure sealing.	2
8	Prevention of periodontal diseases in children. The main risk factors of periodontal diseases development. Planning, methods of conducting.	2
9	Individual hygiene of the oral cavity as a basis of periodontal diseases prevention. Prescription of hygienic means depending on periodontal tissues state.	2
10	Complex system of dental diseases prevention in children. Organized principles. The main steps of introducing. Preparing, forming of program.	2
11	Criteria of estimation of effectiveness of complex system prevention.	2
12	Dispensarization as a main method of introduction of primary prevention. Principles, organized forms, steps. Formation of dental dispensary	2

	groups.	
13	Sanitary education as a method of primary prevention of dental diseases. Organized principles. Form, methods.	2
14	Hygienic education in the organized collectives. Health lesson.	2
15	Individual research work: Conversation on prevention of dental diseases.	2
	Whole	30

## THEMATIC PLAN OF THE SELF-WORK

### Prevention of the dental diseases

**3<sup>rd</sup> year, 6<sup>th</sup> term**

№	Theme	Hours
1.	The role of breastfeeding and early oral care for maintaining the dental health of child.	2
2.	Write down the nutritional recommendations for the pediatric dental patient.	2
3.	Write down the modern medications for endogenic caries prevention (Fluoride, Calcium, vitamins), indications for its use and dosage.	2
4.	Modern means and methods of exogenic caries prevention.	2
5.	Modern materials for fissure sealing of permanent teeth. Write down the steps of fissure sealing.	2
6.	Writing the conversation on prevention of the dental diseases on the theme. <ol style="list-style-type: none"> <li>1. Dental diseases in children.</li> <li>2. Sweets and dental caries.</li> <li>3. Care of the teeth.</li> <li>4. In order to haven` t toothache.</li> <li>5. Nutrition and health.</li> <li>6. How keep your teeth healthy?</li> <li>7. Bad habits.</li> <li>8. The role of teeth for health of child.</li> <li>9. Fissure sealing</li> <li>10. Antenatal prevention of dental diseases.</li> </ol>	6
7.	Preparation for the exam	4
	Whole	20

Independent work №1 (Preparation for practical classes (theoretical, development of practical skills, abilities): numbers of topics 1 - 18).

Purpose: to briefly write down each topic of the practical lesson. Master the key issues of each topic, initial and final level of knowledge.

Topic 1. Introduction to the course of prevention. General issues of prevention of dental diseases, purpose, tasks, methods.

Tasks for independent work: to briefly write down the main issues of the topic, to define "prevention", and its main tasks.

Topic 2. Anatomical and topographic aspects of the structure of the oral cavity in the age aspect. Stages of development of the maxillofacial area, the formation of teeth, oral mucosa and periodontium.

Tasks for independent work: briefly write down the main issues of the topic, describe the anatomical structures of temporary and permanent teeth, physiological aspects of the oral cavity, the timing of the eruption of temporary and permanent teeth ..

Topic 3. Recording of dental formula: clinical, anatomical. Methods of dental examination. Survey algorithm. Practical acquaintance of students with a technique of inspection on each other.

Tasks for independent work: briefly write down the main issues of the topic, describe the methods of dental examination, tools and documentation.

Topic 4. Caries indices.

Tasks for independent work: to briefly write down the main issues of the topic, the stages of the epidemiological survey, the definition of "prevalence" and "intensity" of caries ..

Topic 5. Indices of oral hygiene (Green-Vermilion, Fedorov-Volodkina, Silnes-Loe).Tasks for independent work: briefly write down the main issues of the topic, describe the methods of hygienic indices and interpretation of the results.

Topic 6. Index assessment of periodontal tissues. Practical mastering of PI, WHO (CPITN), RMA, KPI, Schiller-Pisarev tests).Tasks for independent work: to briefly write down the main issues of the topic, to define the term "periodontium", to write down the main functions of periodontium, methods of index assessment of periodontal tissues and interpretation of the results.

Topic 7. Methods of dental examination by the WHO. Dental status registration card. Filling in the card.

Tasks for independent work: to briefly write down the main issues of the topic, to write down the components of the objective and subjective examination, the dental patient, the stages of the epidemiological examination, to determine the WHO map and the methodology for determining the CPITN index.

Topic 8. Mastering the algorithm of examination of children and index assessment of periodontal tissues.

Tasks for independent work: Preparation for the control lesson.

Topic 9. Cariogenic situation in the oral cavity. Methods of identification and elimination.

Tasks for independent work: to briefly write down the main issues of the topic, to write down local and general risk factors for dental caries, to define the concept of "oral fluid", enamel homeostasis.

Topic 10. Structure and biological properties of enamel and dentin. Maturation of enamel after tooth eruption.

Tasks for independent work: briefly write down the main issues of the topic, write down the structure of enamel, dentin, timing of bookmarking and maturation of temporary and permanent teeth, the role of local and general risk factors for enamel and dentin maturation.

Topic 11. Resistance of tooth enamel to carious lesions. Influence on the process of formation, mineralization and maturation of enamel in order to prevent caries. Biological properties of pulp. Modern ideas about metabolic processes in the enamel and pulp of the tooth.

Tasks for independent work: briefly write down the main issues of the topic, write down the definition of "permeability" of enamel, its characteristics, the main functions of the pulp, the concept of de- and re-mineralization.

Topic 12. The composition and properties of oral fluid, its role in the maturation of enamel, demineralization, remineralization. Protective mechanisms of the oral cavity.

Tasks for independent work: to briefly write down the main issues of the topic, to write down the definition of primary and secondary mineralization, the role of saliva pH in the development of caries, to write down non-specific and specific resistance factors.

Topic 13. The microflora of the oral cavity, its participation in the development of major dental diseases.

Tasks for independent work: briefly write down the main issues of the topic, write down the role of nutrition in the occurrence of caries, the species composition of the oral microflora, the role of streptococci in the development of caries, methods for determining dental plaque.

Topic 14. Oral hygiene products, their composition and properties, indications for use depending on the dental status.

Tasks for independent work: briefly write down the main issues of the topic, write down the types of dental plaque, classification of toothpastes, composition and properties. Indications for the use of dental elixirs. Types of toothbrushes, their characteristics.

Topic 15. Oral hygiene items, indications for use depending on dental status.

Tasks for independent work: briefly write down the main issues of the topic, write down the classification of toothbrushes, indications for the use of interdental brushes, toothpicks, dental floss, interdental stimulators and scrapers.

Topic 16. Methods of hygienic care of the oral cavity. Individual hygiene. Mastering the technique of brushing teeth. Controlled brushing. Tasks for independent work: briefly write down the main issues of the topic, write down the requirements for children's toothpastes, dyes for determining dental plaque, methods of brushing teeth and their differences and indications for use.

Topic 17. Professional oral hygiene. Methods and equipment. Tasks for independent work: briefly write down the main issues of the topic, describe the stages of professional hygiene, demonstrations, means for use in children of different ages.

Questions for self-control:

1. The concept of dental plaque and its role.
2. The main properties of the biofilm
3. Mechanisms of cariogenic plaque formation on enamel.

Topic 3:

Modern devices for professional oral hygiene PROPHY-MAX, AIR-MAX, BOOSTER, Cavitron, AerFlow C1, Mini-P'ason and others.

Purpose: to systematize and master the basic indications for the use of devices for professional oral hygiene.

Tasks for independent work:

write in a notebook the main issues of the topic:

-list the main indications for use -MAX, AIR-MAX, BOOSTER, Cavitron, AerFlow C1, Mini-P'ason and others.

Questions for self-control:

1. Stages of professional hygiene
2. Multiplicity of professional hygiene
3. Controlled brushing
4. Determination of the index of Fedorov-Volodkina and Schiller-Pisarev.
5. Indications for the use of irrigators.
6. Interdental brushes, floss - indications for use and methods of use.



#### Topic 4:

Write down the composition and properties of oral fluid.

Purpose: to learn the composition and properties of oral fluid.

Tasks for independent work:

write in a notebook the main issues of the topic:

- composition of oral fluid;
- primary and secondary mineralization of enamel;
- factors that affect the pH of saliva;
- record the species composition of the microflora of the oral cavity;
- nonspecific resistance factors (cellular and humoral);
- specific resistance factors (humoral and cellular);
- functions of oral fluid

Questions for self-control .:

1. What is oral fluid?
2. What is the difference between the concepts of oral fluid and saliva?
3. What are humoral resistance factors?
4. What are cellular resistance factors?
5. Name specific and non-specific resistance factors.

#### Topic 5:

Factors of local immunity of the oral cavity.

Purpose: to learn the main factors of local immunity of the oral cavity.

Tasks for independent work:

write in a notebook the main issues of the topic:

- local and general factors of dental caries in children;
- the concept of local immunity of the oral cavity;
- the structure of the oral mucosa;
- the role of oral fluid in the local immunity of the oral cavity.

Questions for self-control:

1. What are the non-specific mechanisms of protection of the oral cavity?
2. What is the density of saliva and the factors that affect its density?
3. What enzymes in saliva have bactericidal properties?
4. What determines the buffer capacity of saliva?
5. The product of which glands is saliva?

#### Topic 6:

Methods for determining the caries resistance of enamel.

Objective: To master the basic methods of determining the caries of enamel resistance.

Tasks for independent work:

summarize the main issues of the topic:

- TER -test, methods of conducting and interpretation of the obtained results;
- primary mineralization and factors that affect it;
- secondary mineralization and factors that affect it;

- structure of enamel of deciduous and permanent teeth;
  - properties of enamel;
  - stages of maturation of tooth enamel.

Questions for self-control:

1. Chemical composition of enamel of deciduous teeth.
2. The chemical composition of the enamel of permanent teeth.
3. What is the "homeostasis" of enamel?
4. What Ca / P ratio is a sign of enamel resistance?
5. What is the demineralization of enamel, the factors that affect it?

## VI semester

Topic 1:

The role of breastfeeding, early oral care in maintaining the dental health of the child.

Objective: to find out the role of breastfeeding and oral hygiene of young children in the prevention of caries

Tasks for independent work:

Write down in a notebook the main issues of the topic:

- chemical composition of breast milk
- WHO recommendations on breastfeeding
- oral hygiene in children of the first year of life
- means and items of care for the oral cavity of newborns

Questions for self-control:

- the role of the pediatric dentist in the prevention of caries in young children
- recommendations of the dentist on the mode and timing of breastfeeding

Topic 2:

Write down the dietary recommendations of a pediatric dental patient

Objective: To determine the role of nutrition in the prevention of early caries

Tasks for independent work:

Write down the main issues of the topic in a notebook

Diet and nutrition of a child under 1 year of age

The diet and nutrition of a child from 1 year to 3 years of age

The role of night drinking sweet drinks in the occurrence of caries

Sweets and tooth decay

Questions for self-control

- harmful snacks for children
- useful snacks for children
- what is bottle caries
- Name products that contain calcium and trace elements and their role in caries prevention

**Topic 3:**

Write down modern drugs for endogenous caries prevention (fluoride, calcium,

vitamins), indications for their use and dosage

Objective: to understand the importance of endogenous prevention in the prevention of caries

Tasks for independent work:

Write down the main issues of the topic in a notebook

- what is endogenous prevention
- indications for endogenous caries prevention
- fluoride preparations for endogenous prophylaxis
- calcium preparations for endogenous prevention

Questions for self-control

- mechanism of action of fluorine preparations
- mechanism of action of calcium preparations
- methods of using calcium and fluoride preparations for endogenous caries prevention

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#### Topic 4:

Modern methods and means of exogenous prevention of dental caries

Purpose: to systematize and master new methods of exogenous prevention of dental caries.

Tasks for independent work:

Write down in a notebook the main issues of the topic:

- list the main types of prevention;
- indications for exogenous prophylaxis;
- properties of fluorine;
- classification of toothbrushes;
- classification of toothpastes;
- rinses and their properties;

Questions for self-control:

1. What is exogenous prevention?
2. Properties of Tooth Mousse.
3. Indications for the use of Tooth Mousse.
4. R.O.C.S.- mineral indications for use.
5. R.O.C.S 5000 ppm toothpaste - indications for use.

#### Topic 5:

Modern materials for sealing the fissures of permanent teeth in children (sealants, glass ionomers, compomers, liquid composites, ormokers).

Purpose: to get an idea of the indications and methods of sealing the fissures of teeth in children.

Tasks for independent work:

write in a notebook the main issues of the topic:

1. The main groups of materials for sealing:
  - sealants
  - glass ionomers
  - compomers

- liquid composites
  - ormokers;
2. Indications for sealing
  3. Positive and negative aspects of sealing.

Questions for self-control:

1. Write in a notebook:
  - chemical properties of sealants;
  - chemical properties of glass ionomers;
    - chemical properties of compomers;
    - chemical properties of liquid composites;
    - chemical properties of ormokers.
2. Methods of sealing

Individual work

Topic 6: writing conversations on the prevention of dental diseases.

Purpose: to master the main questions that are raised when writing a conversation, taking into account the age of the child and the chosen topic, to learn to conduct health education for different age groups of children

Tasks for independent work:

write and arrange a conversation according to the chosen topic and conduct a health lesson in kindergarten or school.

Topics of conversation:

1. Dental diseases in children
2. Sweets and dental caries in children.
3. Dental care.
4. That teeth did not hurt.
5. Nutrition and health.
6. How to keep your teeth healthy?
7. Bad habits.
8. The role of teeth in maintaining the health of the child.
9. Antenatal prevention of dental diseases.
10. Sealing of fissures

### *List of literature*

1. A Manual of Paediatric Dentistry./ R.J.Andlaw, W.P.Rock.-4th ed., 2006 Copyright, P. 29-55
2. Pediatric Dentistry/ J.R.Pinkham, D.D.S. et all.- 4<sup>rd</sup> ed., 2009.- P.195-213
3. Primary preventive dentistry. / Norman O. Harris, Arden G. Christen. – 5<sup>th</sup> edition, 2015.- P. 397-415.