Paediatric dentistry and dental prophylaxis

1. IMPRINT

Academic Year	2025/2026
Department	Faculty of Medicine and Dentistry
Field of study	English Dentistry Division
Main scientific discipline	Medical sciences
Study Profile	General academic
Level of studies	Uniform MSc
Form of studies	Full-time program
Type of module / course	Obligatory
Form of verification of learning outcomes	Completion
Educational Unit / Educational Units	Department of Pediatric Dentistry of WUM Binieckiego 6 street 02-097 Warsaw, phone number: 22 116 64 24 e-mail: pedodoncja@wum.edu.pl
Head of Educational Unit	prof. dr hab. n. med. Dorota Olczak-Kowalczyk Department of Paediatric Dentistry
Course coordinator	prof. dr hab. n. med. Dorota Olczak-Kowalczyk dorota.olczak-kowalczyk@wum.edu.pl
Person responsible for syllabus	lek. dent. Karolina Spodzieja karolina.spodzieja@wum.edu.pl
Lecturers	prof. dr hab. n. med. Dorota Olczak-Kowalczyk dorota.olczak-kowalczyk@wum.edu.pl dr hab. n. med. Anna Turska-Szybka anna.turska-szybka@wum.edu.pl dr n. med. Halszka Boguszewska-Gutenbaum halszka.boguszewska@wum.edu.pl dr n. med. Iwona Sobiech iwona.sobiech@wum.edu.pl dr n.med. Paula Piekoszewska-Ziętek ppiekoszewska@wum.edu.pl dr n. med. Angelika Kobylińska angelika.kalinska@wum.edu.pl lek. dent. Małgorzata Dudek malgorzata.dudek@wum.edu.pl

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2. BASIC INFORMATION

Year and semester of studies	II year, IV semester	**Number of ECTS credits**	2,5

FORM OF CONDUCTING CLASSES / **Contact hours with an academic teacher**	**Number of hours**	**ECTS credits calculation**
lecture (L)	2	0,10
seminar (S)	6	0,31
exercises (E)	24	1,25
e-learning (e-L)		
practical classes (PC)		
professional practice (PP)		
Student independent work		
Preparation for classes and completions	16	0,83

3. COURSE OBJECTIVES

C1	Acquiring knowledge about dental prophylaxis in children and adolescents taking into account the risk of caries disease.
C2	Preparation for the ability to perform clinical prophylactic procedures in patients of developmental age.
C3	Acquiring skills to conduct group and individual educational activities among children and adolescents.

4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING

Code and number of effect of learning in accordance with standards of learning	**Effects in terms of** *(in accordance with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)*
Knowledge – Graduate* knows and understands:	
B.W5.	principles of calcium and phosphate balance
B.W6.	role and importance of body fluids, including saliva
C.W38.	basic clinical procedures in caries prevention
D.W1.	the notions of health and disease, the impact of the social environment (family, social networks), as well as socio-cultural circumstances (background, social status, faith, nationality, ethnic group) on the patient's health
D.W2.	human behaviours conducive to maintaining health, principles of health promotion, prophylaxis as well as primary and secondary prevention
F.W2	principles of prophylaxis for diseases of the masticatory organ, including oncological prophylaxis
F.W3.	the role of the oral microbiome
F.W9.	principles of instrumentation, materials, and pharmacological agents in dental treatment
G.W3.	basic concepts regarding prevention, health promotion, and environmental hygiene as well as concepts related to individual health, health of the population, and lifestyles
G.W4.	methods of determining the health needs of the society
G.W11.	indicators of population health status and principles of epidemiological assessment of population health status
Skills – Graduate* can:	
C.U3.	select and perform qualitative and quantitative tests indicating the number of bacteria in body fluids
C.U10.	select appropriate instruments for a dental procedure
C.U19.	plan and carry out health promotion and caries prevention activities
F.U1.	take a medical and dental history with a patient or their family by following the principles of professional communication
F.U4.	identify social determinants of oral health, signs of anti-health and self-destructive behaviours and discuss these with the patient, and make a note in the medical record
F.U6.	perform a dental physical examination of the patient

F.U10.	determine indications and contraindications for a specific dental procedure
F.U18.	establish a plan for preventive and therapeutic management based on an individual risk assessment of oral diseases
F.U19.	diagnose and treat basic diseases of mineralised tissues
G.U3.	analyse the determinants of the epidemiological situation in terms of social and demographic processes and quality of life - general and related to oral health
G.U4.	develop simple oral health prevention and promotion programmes
G.U5.	plan prophylaxis and health promotion activities and implement population health promotion activities
G.U9.	provide the patient with the necessary information on oral health promotion, risk factors and ways to prevent the most common social diseases

**The annexes to the Regulation of the Minister of National Heritage of 26 July 2019 refer to a "graduate", not a student*

5. OTHER LEARNING OUTCOMES

Learning outcome number	*(optional)* **Effects in terms of**
Knowledge – The graduate knows and understands:	
Skills – The graduate can:	
Social competences – The graduate is ready to:	

6. CLASSES

Form of classes	**Program content**	**Learning outcomes**
Lectures	L1- *Lecture 1: Etiopathogenesis and epidemiology of tooth decay in children and adolescents. Early childhood caries. General rules for the prevention of caries disease in children. Why should the risk of caries be assessed and how to do it? 1. Prevalence and level of tooth decay in children in Poland. 2. Indicators of caries. 3. Pathogenesis of the carious process - dynamic balance between demineralization and remineralization. 4. Oral health of a pregnant woman and health behaviors and tooth decay in a child, i.e. primary and originally primary prevention. 5. Principles of individualised risk-based dental care planning.	B.W6. C.W38. F.W3. F.W16. G.W3.

	Methods for assessing the level of caries risk: CAMBRA, Cariogram, ICCMS, assessment according to CariesCare. Interview, clinical evaluation and additional tests.	
	6. Ecological hypothesis of caries microbiome dysbiosis. Interventions delaying the colonization of the child's oral cavity with cariogenic bacteria, reducing the number of cariogenic bacteria and cariogenic bacterial biofilm – mechanical removal of plaque, antibacterial agents, probiotics and prebiotics, sugar substitutes. 7. Rules of caries prevention. 8. Risk of dental fluorosis and acute poisoning. 9. Dental fluorosis (risk, clinical picture of fluorosis and classification). 10. Acute and chronic poisoning (probable toxic dose F for children, symptoms of acute poisoning and treatment, extradental effects of chronic exposure to excessive doses of fluoride).	
Seminars	S1- Seminar 1. Diet for the prevention of dental caries. 1. Diet for the prevention of tooth decay. Diet and odontogenesis - the importance of proteins, vitamins and microelements. The pyramid of nutrition and healthy lifestyle. Method and quality of nutrition: breastfeeding/artificial, frequency of meals, consistency and type of food. 2. Caryogenic foods (carbohydrate content, consistency, rate of removal from the mouth, retention). Karyostatic products (xylitol, dairy products, m.in. hard cheeses containing arginine). The role of food in stimulating salivation. Probiotics for the prevention of tooth decay. How to assess the patient's diet (interview/nutritional calendar). The most common dietary mistakes in individual age groups. Dietary recommendations depending on the age of the child. 3. Limiting the impact of bacteria - reducing the number: mechanical, chemical and other methods, limiting access to places at risk of caries development, i.e. sealing of pits and fissures. 4. Mechanical removal of plaque (home and professional methods). Ways of brushing teeth in different age groups, manual and electric toothbrushes - advantages and disadvantages, toothpaste, dental floss, tongue cleaning. Plaque staining, a way to assess oral hygiene (OHI, PLI). Hygienic instruction depending on age. 5. Chemical and other methods of reducing the abundance of cariogenic bacteria (fluoride, chlorhexidine, baking soda, iodine povide, xylitol, ozone, silver nitrate). Means and methods of their use at home and in the dentist's office. 6. Sealing of fissures and anatomical cavities (qualification criteria and indications for the procedure, selection of material to be sealed, method of treatment using glass-ionomer cement and polymer sealant).	B.W5. B.W6. D.W2. F.W3. G.W3. G.W11.
	S2- Seminar 2. Types of fluoride prophylaxis 1. Types of fluoride prophylaxis (endogenous/exogenous, mass/group/individual). Individual fluoride prophylaxis - means and methods of application at home and in the dental office (drops / tablets, toothpastes, rinses, gels / foams and varnishes).	F.W2. G.W3.

	Rules for their use in children and adolescents (home and professional prevention in accordance with age and the level of risk of caries). Application procedures. 2. Methods of supporting remineralization. Carious stain – definition, histological and clinical picture, activity. Mechanism and conditions of remineralization of carious lesions limited to enamel (limiting the influence of bacteria, raising the pH of the oral environment, necessary ions). Stimulation of salivation (chewing gum, diet, pharmacological stimulation, others). 3. Methods and means used in the remineralization of carious spots – fluorine (agents containing low and high concentrations of F ions), calcium and phosphate ions (ACP, CPP-ACP, CPP-ACPF, CSPS, TCP, hydroxyapatite).	
	S3. Seminar 3. Assessment of the risk of caries. Pro-health education as an element of caries disease prevention. 1. Caries risk assessment and dental care planning. Use of risk assessment forms in assessing its level. Planning preventive activities depending on the level of caries risk, the child's age, individual needs and the quality of cooperation with the child and parents. Clinical cases. Pro-health education as an element of caries disease prevention. Definition and models of health education (health-oriented, risk-oriented, disease-oriented). Elements of education: transfer of knowledge, formation of skills and attitudes. Educational content and methods of its transmission to pregnant women, mothers of children up to three years of age, pre-school children, schoolchildren and adolescents. Principles of individual and group education, direct and indirect (educational tools). Motivation. Test Colloquium.	D.W1. G.W3. G.W4.
Exercise	Exercises carried out in the Department of Pediatric Dentistry	
	E1 – Exercise 1. Dental instruments. Basic instruments used in paediatric dentistry – types of drills, diagnostic tools, dental materials and work techniques.	C.U10. F.U10. F.U19. F.W9.
	E2 – Exercise 2. General medical and dental history. Caries risk assessment. Collecting the correct anamnesis – general, dental, dietetic and hygienic. Conducting extraoral and intraoral examination. Diagramming. Risk assessment of caries disease.	F.U1. F.U4. F.U6. F.U18. G.U3.
	E3– – Exercise 3. Prophylactic procedures. Prophylactic procedures – sealing, fluoridation, tooth cleaning. Conduct hygiene instruction depending on age.	C.U10. F.U10. F.U19. F.W9.
	E4 - Exercise 4. Preventive procedures - practical part. Instruments and materials used for the procedure of sealing fissures. Conducting the procedure by students on a phantom.	C.U10. F.U10. F.W9.
	E5 - – Exercise 5. Indicators of hygiene and caries. Calculation of caries indicators (Frequency of caries, DMFT, DMFS , SiC)and hygiene indicators (API, OHI-S, Pl.I.). Plaque staining agents.	C.U10. F.U10. F.W9.

	E6 – Exercise 6. Bacterial factors in the caries risk assessment – theoretical and practical part. Bacterial factors in the caries risk assessment - current scientific reports in the field of metagenomic research in people with tooth decay and healthy people. Practical part: tests to be performed in dental office (e.g. Saliva check buffer, CRT Buffer).	B.W6. C.U3. F.W3.
	E7 – Exercise 7. Preparation of an educational program. Preparation and discussion of the presentation of an educational program for preschool children on the prevention of caries.	C.U19. G.U4. G.U5. G.U9.
	E8 - Exercise 8. Preventive classes conducted in kindergartens. Presentation of the program. Presentation of an educational program on the prevention of caries disease, dietary and hygienic habits, in the form of games and activities for preschool children during a lesson organized in kindergarten.	C.U19. G.U4. G.U5. G.U9.

7. LITERATURE

Mandatory

1. Compendium of Paediatric Dentistry, edited by prof. dr hab. n. med. Doroty Olczak – Kowalczyk, collective work, Med. Tour Press International, 2023.
2. Współczesna stomatologia wieku rozwojowego, pod red. D. Olczak-Kowalczyk, J. Szczepańskiej, U. Kaczmarek, Med Tour Press International, Otwock 2017
3. Handbook of Pediatric Dentistry. Cameron A.C., Widmer R.P., wyd. pol. drugie pod red. U. Karczmarek, Urban & Partner, Wrocław 2013.
4. Zapobieganie i leczenie choroby próchnicowej u dzieci, pod red. D. Olczak-Kowalczyk i L. Wagnera, Wydawnictwo Medyczne Borgis, Warszawa, 2013.
5. Wprowadzenie do stomatologii dziecięcej, pod red. D. Olczak-Kowalczyk i L. Wagnera, Warszawa, WUM, 2012.

Supplementary

Nowa Stomatologia, kwartalnik, Wydawnictwo Medyczne Borgis. Warszawa.

8. WAYS OF ASSESSING LEARNING OUTCOMES

Symbol of the learning outcome:	Ways to verify the learning outcome:	Passing criterion
B.W5. B.W6. C.W38. D.W1. D.W2. F.W2. F.W3. F.W9. GW.3. G.W4. G.W11.	Oral check of preparation for each seminar. Test colloquium including content presented at lectures and seminars. The first and second dates of the colloquium are in the form of a test (20 single-choice questions). In the event of failing, the commission colloquium may be held only with the consent of the Head of the Department. Passing the colloquium entitles the student to approach the exercise part.	Active participation in seminars. Passing. Test colloquium – 60% correct answers. Grade Criterion 2,0 (ndst) <12 pts 3,0 (dst) 12-13 pts 3,5 (ddb) 14-15 pts 4,0 (db) 16-17 pts

C.U3. C.U10. C.U19. F.U1. F.U4. F.U6. F.U10. F.U18. F.U19. G.U3. G.U4. G.U5. G.U9.	Preparation and conduct of educational activities in kindergarten on the prevention of caries disease, proper dietary and hygienic habits. Components of the presentation: 1. Presentation of dietary recommendations 2. Presentation of preventive recommendations 3. Presentation of hygiene recommendations 4. The way of presentation and the ability to talk to children The condition for passing the course is attendance at lectures, seminars, positive passing of the test colloquium, active participation in exercises and preparation and conduct of preventive classes among preschool children.	4,5 (pdb) 18-19 pts 5,0 (bdb) 20 pts Preparation of an educational program for a lesson in kindergarten. The substantive content, presentation, commitment and creativity are evaluated. A total of 20 points to be earned, 5 points for each component of the presentation. Grade Criterion 2,0 (ndst) <12 pts 3,0 (dst) 12-13 pts 3,5 (ddb) 14-15 pts 4,0 (db) 16-17 pts 4,5 (pdb) 18-19 pts 5,0 (bdb) 20 pts

9. ADDITIONAL INFORMATION

1. The subject "Paediatric dentistry and dental prophylaxis" is carried out in the Department of Paediatric Dentistry of the Medical University of Warsaw and the Department of Dental Microbiology of the Medical University of Warsaw.
2. The condition for passing the course is attendance at lectures, seminars, exercises and obtaining more than 60% points of the test colloquium. The colloquium consists of 20 test questions. In the event of failure the student is entitled to a second correction date, which is in the form of a test. If the second term is not passed, the commission colloquium may be held with the consent of the Head of the Department.
3. Lectures will be available on the e-learning platform, they will be shared in time specified in the class schedule.
The lectures convey the latest reports, consensus and the latest standards in the field of paediatric dentistry. Attendance at lectures is an essential element for the acquisition of modern knowledge and at the same time is an element of exam questions. During lectures, the attendance list is verified.
4. Person responsible for teaching in 2nd year –lek. dent. Karolina Spodzieja, karolina.spodzieja@wum.edu.pl. Guardian of the teaching in English Dentistry Department is Małgorzata Dudek, malgorzata.dudek@wum.edu.pl
5. Information on consultation hours is placed on the notice board in the Department.
6. The student reports to the classes with protective clothing and an ID containing the information: student, year, name, surname, as well as with shoes for a change. Bags must be stowed in lockers located in clinical rooms.
7. Please do not use mobile phones during classes.
8. Please come to class on time. Late over 15 minutes is treated as an absence.
9. Alternatively, absences from classes should be reported to the teacher/tutor of the year and made up with another group. Only excused absences can be made up.
10. Student Scientific Club at the Department of Paediatric Dentistry of the Medical University of Warsaw
Guardian of the Scientific Club - dr hab. n. med. Anna Turska-Szybka
Department of Paediatric Dentistry WUM, Binieckiego 6 street, 02-097 Warsaw,
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ATTENTION

The final 10 minutes of the last class in the block/semester/year should be allocated to students completing the Assessment of Classes and Academic Teachers Questionnaire