



Paediatric Dentistry and Dental Prophylaxis

1. COURSE INFORMATION

Academic year	2026/2027
Faculty	Faculty of Medicine and Dentistry
Field of study	Dentistry
Leading discipline	Medical sciences
Study profile	General academic
Level of education	Long-cycle Master's degree programme
Mode of study	Full-time
Module/course type	Compulsory
Method of verifying learning outcomes	Course completion
Teaching unit	Department of Paediatric Dentistry, Medical University of Warsaw ul. Binieckiego 6, 02-097 Warsaw, tel.: +48 22 116 64 24 e-mail: pedodoncja@wum.edu.pl
Head of unit	Prof. Dorota Olczak-Kowalczyk, MD, PhD Department of Paediatric Dentistry
Course coordinator	Prof. Dorota Olczak-Kowalczyk, MD, PhD dorota.olczak-kowalczyk@wum.edu.pl
Person responsible for the syllabus	Renata Węgrzyn, DDS renata.wegrzyn@wum.edu.pl
Teaching staff	Prof. Dorota Olczak-Kowalczyk, MD, PhD — dorota.olczak-kowalczyk@wum.edu.pl Assoc. Prof. Anna Turska-Szybka, MD, PhD — anna.turska-szybka@wum.edu.pl Halszka Boguszewska-Gutenbaum, MD, PhD — halszka.boguszewska@wum.edu.pl Iwona Sobiech, MD, PhD — iwona.sobiech@wum.edu.pl Piotr Sobiech, MD, PhD — piotr.sobiech@wum.edu.pl Paula Piekoszewska-Ziętek, MD, PhD — ppiekoszewska@wum.edu.pl Angelika Kobylińska, MD, PhD — angelika.kalinska@wum.edu.pl Małgorzata Dudek, DDS — malgorzata.dudek@wum.edu.pl Maja Lipiec, DDS — maja.lipiec@wum.edu.pl

Appendix 4A to the Procedure for the Development and Periodic Review of Study Programmes
(constituting an appendix to Order No. 68/2024 of the Rector of the Medical University of Warsaw dated 18 April 2024)

	Michał Gefrerer, DDS — michal.gefrerer@wum.edu.pl Andrzej Kołodziejczyk, DDS — andrzej.kolodziejczyk@wum.edu.pl Sara Shamsa-Nieckula, DDS — sara.shamsa@wum.edu.pl Wiktoria Mól, DDS — wiktoria.mol@wum.edu.pl Renata Węgrzyn, DDS — renata.wegrzyn@wum.edu.pl Natalia Dacyna, DDS — natalia.dacyna@wum.edu.pl
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2. BASIC INFORMATION			
Year and semester of study	Year 2, Semester 4	ECTS credits	2.5
CLASS FORMAT	Number of hours	ECTS credit calculation	
Contact hours with an academic teacher			
lecture (L)	2	0.10	
seminar (S)	6	0.31	
practical classes (C)	24	1.25	
e-learning (e-L)			
practical training (PT)			
professional placement (PP)			
Student's independent work			
Preparation for classes and assessments	16	0.84	

3. LEARNING OBJECTIVES	
C1	To acquire knowledge of dental prevention in children and adolescents, taking caries risk into account.
C2	To develop the ability to perform clinical preventive procedures in paediatric patients.
C3	To develop the ability to conduct group and individual educational activities for children and adolescents.

4. EDUCATION STANDARD – DETAILED LEARNING OUTCOMES	
Learning-outcome symbol and number in accordance with the education standards	Outcomes in the following areas

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Knowledge – the graduate* knows and understands:

B.W5.	the principles of calcium and phosphate metabolism;
B.W6.	the role and importance of body fluids, including saliva;
C.W38.	basic clinical procedures in caries prevention;
D.W1.	the concepts of health and disease, and the impact of the social environment (family, work, social relationships) and sociocultural determinants (origin, social status, religion, nationality, ethnic group) on a patient's health;
D.W2.	human behaviours conducive to maintaining health, and the principles of health promotion, prophylaxis, and primary and secondary prevention;
F.W2.	the principles of prevention used in diseases of the masticatory system, including oncological prevention;
F.W3.	the role of the oral microbiome;
F.W9.	the principles governing the use of instruments, materials, and pharmacological agents in dental treatment;
G.W3.	basic concepts of prevention, health promotion, environmental hygiene, individual and population health, and lifestyle;
G.W4.	methods for determining the health needs of society;
G.W11.	population health indicators and the principles of epidemiological assessment of population health.

Skills – the graduate* is able to:

C.U3.	select and perform qualitative and quantitative tests for the presence of bacteria in body fluids;
C.U10.	select the 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 from a patient or the patient's family while adhering to the principles of professional communication;
F.U4.	identify social determinants of oral health and signs of unhealthy and self-destructive behaviours, discuss them with the patient, and record them in the medical documentation;
F.U6.	perform a dental physical examination of a patient;
F.U10.	determine indications and contraindications for a specific dental procedure;
F.U18.	establish a preventive and treatment plan based on an individual assessment of oral-disease risk;
G.U3.	analyse the determinants of the epidemiological situation in relation to social and demographic processes and to general and oral-health-related quality of life;
G.U4.	develop simple oral-health prevention and promotion programmes;

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G.U5.	plan prevention and health-promotion activities and implement population-health promotion measures;
G.U9.	provide the patient with the necessary information on oral-health promotion, risk factors, and ways of preventing the most common diseases of social importance;

5. OTHER LEARNING OUTCOMES

Learning-outcome number	Outcomes in the following areas
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Knowledge – the graduate knows and understands:

W1	the specific composition and properties of saliva in children, factors determining its secretion, and the role of mineral (calcium-phosphate) metabolism in the demineralisation and remineralisation of dental hard tissues during development.
W2	methods and criteria for assessing individual and population caries risk in children (including systems such as CAMBRA and ICDAS), and the principles for selecting professional preventive and fluoride products.
W3	methods of health education and motivational techniques adapted to the stages of a child's psychophysical development, as well as the psychosocial determinants of hygiene and dietary habits in the family.

Skills – the graduate is able to:

U1	perform a clinical examination of a child's oral cavity, assess oral-hygiene indices, and select and conduct tests evaluating saliva and the presence of pathogenic microorganisms.
U2	develop and independently deliver individual and group education and instruction programmes on hygiene and diet for children, adolescents, and their parents, communicating knowledge clearly and in a way adapted to the audience.

Social competence – the graduate is prepared to:

K.1 /	establish and maintain respectful and empathetic contact with the patient and the patient's family.
K.2	recognise their own limitations in knowledge and demonstrate readiness for continuous self-education and professional development.
K3	take responsibility for patient safety and for observing professional ethics and medical confidentiality.

6. CLASSES

Class format	Course content	Learning outcomes
Lectures	L1 – Lecture 1: Aetiopathogenesis and epidemiology of dental caries in children and adolescents. Early childhood caries. General principles of preventing caries in children. Why should caries risk be assessed and how? 1. Prevalence and severity of dental caries among children in Poland. 2. Caries indices.	B.W6. C.W38. F.W3. G.W3. W1 W2 W3

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	- Pathogenesis of the caries process: the dynamic balance between demineralisation and remineralisation. - Maternal oral health and health behaviours during pregnancy in relation to dental caries in the child, i.e. primordial and primary prevention. - Methods of caries-risk assessment: CAMBRA, Cariogram, ICCMS, and CariesCare assessment. History-taking, clinical assessment, and additional examinations.	
	- The ecological hypothesis and oral-microbiome dysbiosis. Interventions that delay colonisation of the child's oral cavity by cariogenic bacteria, reduce the number of cariogenic bacteria, and decrease the cariogenicity of bacterial biofilm: mechanical plaque removal, antibacterial agents, probiotics and prebiotics, and sugar substitutes. - Principles of caries prevention. - Risk of dental fluorosis and acute poisoning. - Dental fluorosis: risk, clinical presentation, and classification. - Acute and chronic poisoning: probable toxic fluoride dose for children, symptoms and management of acute poisoning, and non-dental effects of chronic exposure to excessive fluoride doses.	F.W.6 D.W.1 D.W.2 F.W.3 G.U.3
Seminars	S1 – Seminar 1. Diet in the prevention of dental caries. - Diet in caries prevention and the importance of proteins, vitamins, and micronutrients. The food and healthy-lifestyle pyramid. Feeding method and dietary quality: breastfeeding/formula feeding, meal frequency, and food consistency and type. - Cariogenic foods (carbohydrate content, consistency, oral clearance rate, retention). Cariostatic foods (xylitol and dairy products, including hard cheeses containing arginine). The role of food in stimulating salivary secretion. Probiotics in caries prevention. Methods of assessing a patient's diet (history/food diary). The most common dietary errors in individual age groups. Age-specific dietary recommendations. - Limiting bacterial impact and numbers: mechanical, chemical, and other methods; restricting access to caries-prone sites by sealing pits and fissures. - Mechanical plaque removal (home and professional methods). Toothbrushing methods for different age groups; manual and electric toothbrushes—advantages and disadvantages; toothpastes; dental floss; tongue cleaning. Plaque disclosing and oral-hygiene assessment (OHI, PLI). Age-appropriate oral-hygiene instruction. - Chemical and other methods of reducing cariogenic bacteria (fluoride, chlorhexidine, povidone-iodine, xylitol, ozone, silver nitrate). Products and methods of use at home and in the dental office. - Sealing pits and fissures: eligibility criteria and indications, selection of sealing material, and procedures using glass-ionomer cement and resin sealant.	B.W5. B.W6. D.W2. F.W3. G.W3. G.W11. W1 W2
	S2 – Seminar 2. Types of fluoride prevention.	F.W2. G.W3.

	- Types of fluoride prevention (endogenous/exogenous; population/group/individual). Individual fluoride prevention: products and methods used at home and in the dental office (drops/tablets, toothpastes, rinses, gels/foams, and varnishes). Principles of use in children and adolescents (age- and caries-risk-appropriate home and professional prevention). Application procedures. - Methods supporting remineralisation. White-spot caries lesion: definition, histological and clinical presentation, and activity. Mechanisms and conditions for remineralising enamel-limited lesions (reducing bacterial impact, raising oral pH, and supplying essential ions). Stimulation of salivary secretion (chewing gum, diet, pharmacological stimulation, and other methods). - Methods and agents used to remineralise white-spot lesions: fluoride (agents with low and high fluoride-ion concentrations), calcium and phosphate ions (ACP, CPP-ACP, CPP-ACPF, CSPA, TCP, hydroxyapatite).	W1 W2
	S3 – Seminar 3. Caries-risk assessment. Health education as an element of caries prevention. - Caries-risk assessment and planning dental care. Use of risk-assessment forms. Planning preventive measures according to caries-risk level, the child's age and individual needs, and the quality of cooperation with the child and parents. Clinical cases. - Health education as an element of caries prevention. Definition and models of health education (health-oriented, risk-factor-oriented, disease-oriented). Elements of education: imparting knowledge and developing skills and attitudes. Educational content and methods for pregnant women, mothers of children up to three years of age, preschool children, school-age children, and adolescents. Principles of individual and group, direct and indirect education (educational tools). Motivation. Multiple-choice test.	D.W1. G.W3. G.W4. W3
Practical classes	Practical classes held at the Department of Paediatric Dentistry	
	C1 – Practical class 1. Dental instruments. Basic instruments used in paediatric dentistry: types of burs, diagnostic instruments, dental materials, and working techniques.	C.U10. F.W9. K2
	C2 – Practical class 2. General medical and dental history. Caries-risk assessment. Taking an appropriate general medical, dental, dietary, and hygiene history. Extraoral and intraoral examination. Preparing a dental chart. Caries-risk assessment. Calculating caries indices (caries prevalence, DMFT, DMFS, SiC) and hygiene indices (API, OHI-S, PI.I.). Plaque-disclosing agents.	F.U1. F.U4. F.U6. F.U18. G.U3. U1 K1 K2 K3
	C3 – Practical class 3. Preventive procedures – practical component. Preventive procedures: silver diamine fluoride treatment/impregnation of teeth, theoretical discussion, and	C.U10. F.U10. F.U19. F.W9.

	performance of the procedure on a phantom. Classes take place at the Medical Simulation Centre of the Medical University of Warsaw.	
	C4 – Practical class 4. Preventive procedures – practical component. Instruments and materials used for sealing pits and fissures with fissure sealant or flowable composite. Students perform the procedure on a phantom at the Medical Simulation Centre of the Medical University of Warsaw.	C.U10. F.U10. F.W9. K2
	C4 – Practical class 5. Preventive procedures – practical component. Instruments and materials used for sealing pits and fissures with glass-ionomer material. Students perform the procedure on a phantom at the Medical Simulation Centre of the Medical University of Warsaw.	C.U10. F.U10. F.W9. K2
	C6 – Practical class 6. Bacterial factors in caries-risk assessment – theoretical and practical components. Bacterial factors in caries-risk assessment. Practical component: chairside tests intended for dental practices (e.g. Saliva-Check Buffer, CRT Buffer).	B.W6. C.U3. F.W3.
	C7 – Practical class 7. Preparation of an educational programme for children in three age groups. Group 1: ages 3–6 (preschool) Group 2: ages 7–10 (early school age) Group 3: ages 11–16 (school age/adolescence)	C.U19. G.U4. G.U5. G.U9. U1 U2 K1
	C8 – Practical class 8. Review of acquired knowledge. Preparation for patient contact. Discussion of interpersonal communication principles and the specific features of communication with paediatric patients and their caregivers, in accordance with medical ethics.	C.U19. G.U4. G.U5. G.U9. U2 K1 K2

7. READING LIST

Required reading

1. Compendium of Developmental-Age Dentistry [Kompedium stomatologii wieku rozwojowego], edited by Prof. Dorota Olczak-Kowalczyk, collective work, Med Tour Press International, 2023.
2. Contemporary Developmental-Age Dentistry [Współczesna stomatologia wieku rozwojowego], eds. D. Olczak-Kowalczyk, J. Szczepańska, U. Kaczmarek, Med Tour Press International, Otwock, 2017.
3. Paediatric Dentistry. Cameron A.C., Widmer R.P., 2nd Polish ed., edited by U. Kaczmarek, Urban & Partner, Wrocław, 2013.
4. Prevention and Treatment of Dental Caries in Children [Zapobieganie i leczenie choroby próchnicowej u dzieci], eds. D. Olczak-Kowalczyk and L. Wagner, Borgis Medical Publishing House, Warsaw, 2013.
5. Introduction to Paediatric Dentistry [Wprowadzenie do stomatologii dziecięcej], eds. D. Olczak-Kowalczyk and L. Wagner, Warsaw, Medical University of Warsaw, 2012.

Supplementary reading

Nowa Stomatologia [New Dentistry], quarterly, Borgis Medical Publishing House, Warsaw.

8. METHODS OF VERIFYING LEARNING OUTCOMES		
Course learning-outcome symbol	Method of verifying the learning outcome	Pass criterion
B.W5. B.W6. C.W38. D.W1. D.W2. F.W2. F.W3. F.W9. G.W3. G.W4. G.W11. C.U3. C.U10. C.U19. F.U1. F.U4. F.U6. F.U10. F.U18. G.U3. G.U4. G.U5. G.U9. W1 W2 W3 U1 U2 K1 K2 K3	Oral assessment of preparation for each seminar. Multiple-choice test covering content presented during the lecture and seminars. The first and second attempts take the form of a 20-question single-best-answer test. If a student receives a failing grade, the student is entitled to two resit attempts. For the second resit, the student may ask the Dean to allow an observer designated by the student government to attend. Passing the test entitles the student to proceed to the practical component. Preparation, presentation, and discussion of a preventive programme for the relevant age group. Discussion of differences in the selection of educational tools and communication methods depending on the age of the target group. To pass the course, the student must attend the lecture and seminars, pass the test, participate actively in practical classes, and prepare an educational programme for the assigned age group.	Active participation in seminars. Pass. Multiple-choice test: 60% correct answers. Grade — Criterion 2.0 (fail): <12 points 3.0 (satisfactory): 12–13 points 3.5 (satisfactory plus): 14–15 points 4.0 (good): 16–17 points 4.5 (very good minus): 18–19 points 5.0 (very good): 20 points Preparation of an educational and preventive programme. The substantive content, presentation, engagement, and creativity are assessed. A maximum of 20 points may be earned, with 5 points for each presentation component. Grade — Criterion 2.0 (fail): <12 points 3.0 (satisfactory): 12–13 points 3.5 (satisfactory plus): 14–15 points 4.0 (good): 16–17 points 4.5 (very good minus): 18–19 points 5.0 (very good): 20 points

9. ADDITIONAL INFORMATION
1. The course “Paediatric Dentistry and Dental Prophylaxis” is delivered by the Department of Paediatric Dentistry, Medical University of Warsaw. Passing the course requires attendance at lectures, seminars, and practical classes, and a score of at least 60% on the multiple-choice test. The test consists of 20 questions. If the student fails, they are entitled to a second test-format resit. If the second attempt is failed, a board examination may be held with the consent of the Head of the Department.

2. Lectures are delivered on the e-learning platform and will be made available according to the class schedule. They present the latest consensus findings and current standards in paediatric dentistry. Attendance is essential for acquiring up-to-date knowledge, and the lecture content is included in assessment questions. Attendance is recorded during lectures.

Excused absences from classes and/or assessments

To excuse an absence from a class or assessment, the student must notify the course coordinator or another person designated by the head of the unit by e-mail or in writing no later than three working days after the day on which the class, assessment, examination, or placement took place. An excuse may be submitted later if the student was unable to provide it for justified reasons; in such a case, the document should be submitted as soon as the reason preventing submission ceases to apply.

3. Completion of classes

In the event of an excused absence from an assessment, the student is entitled to take the assessment on the next date scheduled by the unit.

An unexcused absence constitutes grounds for recording a failure for that assessment date. If the student fails to pass the course by the final date set by the unit in the academic year, the student does not receive credit for the course.

If a student receives a failing grade, the student is entitled to two resit attempts. For the second resit, the student may ask the Dean to allow an observer designated by the student government to attend.

The Dean may permit a board assessment if justified objections concerning the conduct of the assessment are raised.

4. Person responsible for teaching in Year 2: Renata Węgrzyn, DDS, renata.wegrzyn@wum.edu.pl.

5. Information on consultation hours is displayed on the Department notice board.

6. Students must attend classes wearing protective clothing, replacement footwear, and an identification badge stating: student, year, first name, and surname. Bags must be stored in lockers located in the clinical rooms.

7. Please do not use mobile phones during classes.

8. Please arrive on time. Arrival more than 15 minutes late is treated as an absence.

9. Any absence should be reported to the instructor/year tutor and made up with another group. Only excused absences may be made up.

10. Student Research Group at the Department of Paediatric Dentistry, Medical University of Warsaw

Research Group supervisor: Assoc. Prof. Anna Turska-Szybka, MD, PhD

Department of Paediatric Dentistry, Medical University of Warsaw, ul. Binieckiego 6, 02-097 Warsaw

tel.: +48 22 116 64 24; e-mail: pedodoncja@wum.edu.pl, anna.turska-szybka@wum.edu.pl

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NOTE

The final 10 minutes of the last class in the course block, semester, or academic year must be set aside for students to complete the Course and Academic Teacher Evaluation Survey.