

**EDUCATIONAL COMPONENT SYLLABUS
ENDODONTIC TECHNIQUE IN PEDIATRIC DENTISTRY**

Specialty: **221 Dentistry**

Educational and professional program: **Dentistry**

Component code in the educational program: **EK79**

Level of higher education: **second (master's)**

Form of education: **full-time (full-time)**

Year of study: **fifth**

Semester(s): **IX (fall)**

Type of educational component: **elective**

Academic year: **2028-2029**

Volume: **4 ECTS credits (120 hours)**

Training sessions: **lectures , practical classes , consultations**

Final control: **credit**

Prerequisites: **human anatomy; histology, embryology, cytology, medical biology, medical chemistry, biological and bioorganic chemistry, medical physics, microbiology, virology, immunology, pharmacology.**

Department/division: **Pediatric Dentistry and Implantology** , Peremohy Ave., 51-A, 5th floor.

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Educational component page in the KhNMU Distance Learning System (Moodle):

<https://distance.knu.edu.ua/course/index.php?categoryid=174>

DESCRIPTION OF THE EDUCATIONAL COMPONENT

The elective course **Endodontic Technique in Pediatric Dentistry** provides an overview of the diagnosis of complications of dental caries in children and adults, the structural features of root canals, their medical and mechanical treatment, and obturation options.

OBJECTIVE : To provide students with an in-depth level of knowledge regarding modern endodontic intervention techniques, materials and instruments used in the treatment of caries complications in primary and permanent teeth in children of different ages.

LEARNING OUTCOMES:

1. Analyze the results of a patient examination in a pediatric therapeutic dentistry clinic.
2. Identify the leading syndromes and symptoms in pediatric therapeutic dentistry.
3. To determine the nature and principles of treatment of complicated caries in pediatric therapeutic dentistry.
4. Identify various clinical variants and complications of the most common diseases in the pediatric therapeutic dentistry clinic.
5. Demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination in the pediatric therapeutic dentistry clinic.
6. Diagnose emergencies in a pediatric therapeutic dentistry clinic.
7. Provide necessary emergency care in emergencies in the pediatric therapeutic dentistry clinic.
8. To substantiate and formulate a preliminary clinical diagnosis in a pediatric therapeutic dentistry clinic.
9. To substantiate and formulate a syndromic diagnosis in a pediatric therapeutic dentistry clinic.
10. Plan an examination of a dental patient, interpret the results of laboratory and instrumental examinations for the most common diseases and their complications.
11. Conduct differential diagnostics in a pediatric therapeutic dentistry clinic.
12. To provide therapeutic treatment of complicated caries in children of different ages.
13. To conduct primary and secondary prevention of pulpitis and periodontitis in the pediatric therapeutic dentistry clinic.

14. Make a final diagnosis of complicated caries in a pediatric therapeutic dentistry clinic.

CONTENT OF THE EDUCATIONAL COMPONENT

List of topics of practical classes / seminars (40 hours) :

1. The concept of endodontium, its components. Morphological features of the maxillofacial region in children, which are important for endodontic treatment. Topographic and morphological features of the structure of temporary and permanent teeth in children in terms of age. The system of root canals of temporary and permanent teeth in children.
2. Endodontic intervention techniques in children depending on age. Choice of treatment method for complicated caries in primary teeth and permanent teeth with unformed root apex. Vital and devital amputation and pulp extirpation.
3. The main stages of endodontic treatment in children. Instruments for root canal treatment in children. Classification , purpose, sequence and technique of use. Features of use in pediatric dentistry.
4. Providing access to the root canals of teeth of different groups. Formation of primary and secondary endodontic access.
5. Instrumental treatment of the root canal of a tooth. Preparation of the root canal with hand instruments. Step Back.
6. Drug support for endodontic treatment in children. Means for drug exposure and temporary obturation of root canals, methods of their use in children. Vibration systems for root canal treatment. Sound and ultrasonic treatment of root canals.
7. Permanent root canal obturation. Instruments and materials used for this. Methods of implementation.
8. Endodontic treatment of permanent teeth with incomplete root formation: features of endodontic interventions, instrumental and medical treatment of root canals, concepts of apexogenesis and apexification. Means and methods for their implementation in children.
9. Traumatic lesions of primary and permanent teeth in children. Modern approaches to diagnosis and treatment. Complications of trauma to teeth and surrounding tissues. Complications of endodontic treatment in children, their prevention and treatment.
10. Test.

List of topics for student independent work (80 hours)

1. Preparation for practical classes (theoretical, development of practical skills and abilities).
2. Diagnostics in endodontics. Basic principles of radiological examination in endodontic treatment of children.
3. Isolation of the surgical field. Rubber dam. Application technique. Features of use in children of different ages.
4. Direct pulp capping of primary and permanent teeth in children. Indications, contraindications, materials used
5. 4. Methods for determining the working length of a tooth.
6. Instrumental treatment of root canals in children. Techniques for manual cleaning and shaping of root canals of primary teeth at different stages of their development. Indications for their use. Selection of techniques for endodontic treatment of primary teeth in children.

7. Instrumental treatment of root canals in children. Selection of techniques for endodontic treatment in permanent teeth in children. Techniques for manual cleaning and shaping of root canals of permanent teeth at different stages of their development. Indications for their use .
8. Machine techniques for root canal treatment, possibilities of their application in children. Types of endodontic tips. Modern systems of rotating nickel-titanium instruments. Root canal preparation with instruments using an endomotor.
9. Temporary obturation of root canals. Instruments and materials used for this. Methods of implementation.
10. Use of laser, photoactivated solutions, 3mix MP, automated canal irrigation.
11. Apexogenesis and apexification. Means and methods for their implementation in children.
12. Modern methods of amputation treatment of pulpitis of primary teeth in children. Means and methods of implementation.
13. Modern methods of amputation treatment of pulpitis of permanent teeth in children. Means and methods of implementation.
14. Materials for permanent obturation of root canals in primary teeth, principles of their selection and application methods.
15. Materials for permanent root canal obturation in permanent teeth in children, characteristics, principles of their selection.
16. Methods of obturation of root canals of permanent teeth in children.
17. Methods and features of restoration of primary and permanent teeth in children after endodontic treatment.
18. Emergency care in a pediatric therapeutic dentistry clinic.
19. The role of optical magnification in modern endodontics: binoculars, operating microscope.
20. Features of anesthesia during endodontic treatment of primary and permanent teeth in children.
21. Additional examination methods in endodontics: (determination of tooth vitality, CPCT, etc.) .
22. Physiotherapy treatment methods in pediatric therapeutic dentistry.

VTS is aimed at deepening and consolidating theoretical knowledge obtained during classroom training and contributes to the formation of professional competencies. The results of VTS are subject to control and are included in the final knowledge control.

Consultations: online, with prior registration on the course page in the Distance Learning System .

Teaching methods: lecture, exercises and practical work, solving situational tasks and cases, standardized patient method

EVALUATION

Current educational activity (PND). Assessment of the success of education seekers is carried out in accordance with the Instructions for assessing the educational activity of higher education seekers at KhNMU (<https://knmu.edu.ua/documents/normatyvni-dokumenty-navchalnogo-proczesu/>). The grade for a practical or final lesson is from 2 to 5 points. Submitting assignments late for unwarranted reasons entails a reduction in the grade in accordance with the percentage of delay in time from the time of completing the assignment. Assignments are checked within 24 hours. Grades are posted in an electronic journal. Unsatisfactory grades are worked out in accordance with the Regulations on the procedure for working out academic classes by KhNMU students (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_vidprac_zaniat.pdf).

At the end of the semester, the semester average grade is converted into a multiple-point grade (70–120 points) in accordance with Table 1 of the Assessment Instructions (see above). The arithmetic average of the PND for both semesters constitutes **the total learning activity (GNA)** .

Individual tasks (IT) are evaluated up to 10 points.

Final control. The condition for passing the test is to score 70 - 120 CIS points.

Discipline grade (OD). $OD = ZND + IZ$

Appealing the results of the final control is carried out in accordance with the procedure established at the KhNMU (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_apel_kontrol.pdf).

EDUCATION COMPONENT POLICIES

Recommendations for course work: actively participate in all forms of work in classes, devote 1-2 hours daily to independent work and preparation for classes, ask questions during classes , attend consultations, submit assignments on time , and complete all forms of control.

Attendance at classes. Attendance at lectures and practical classes is mandatory. The uniform during offline classes is a white medical gown. If you are more than 5 minutes late, you may not be admitted to the class. Missed classes are made up in accordance with the Regulations on the procedure for students of KNMU to complete classes (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_vidprac_zaniat.pdf).

Academic integrity. KNMU has a zero tolerance policy towards manifestations of academic dishonesty. Any violation of the principles of academic integrity entails liability in accordance with the procedure established at KNMU (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_ad-1.pdf).

The use of electronic gadgets and artificial intelligence tools is permitted only with the permission of the teacher.

Policy for individuals with special educational needs. Applicants with special educational needs should contact a teacher to develop an individual educational trajectory.

Teacher response time: 24 hours.

Technical requirements for working on the course:

- access to a computer, laptop, tablet or smartphone
- corporate Google account with your own photo
- skills in working with Google Workspace (Google Meet, Docs, Sheets, Slides, Forms) and Moodle
- *other department requirements*

Technical support: ACS (ev.shevtsov@knmu.edu.ua), Google (tehotdelknmu@gmail.com), Moodle (al.korol@knmu.edu.ua)

RECOMMENDED SOURCES

1. Khomenko L.A., Bidenko N.V. Practical endodontics; instruments, materials and methods. - Kiev: Kniga-plus, 2025. - 224 p.
2. Khomenko L.A., Ostapko E.I., Bidenko N.V. Clinical and radiological diagnostics of dental and periodontal diseases in children and adolescents. - Kyiv: "Knyga plyus", 2024. - 200p.
3. NazaryanR.S., FomenkoYu.V., ShcheblykinaN.A., KolesovaT.O. Diseases of the periodontium and oral mucosa in childhood. Methodological guidelines for students, subordinators of the dental faculty. KhNMU, Kharkiv, 2021.- 120p.
4. Kaskova L. F.,Vashchenko I.Yu.,Bereghna O.E. Propaedeutics of children therapeutic dentistry. Kyiv, Magnoliya , 2024y. - 200p.
5. Kaskova L. F.,Yanko N. V. Preclinical manual of paediatric therapeutic dentistry. Kyiv, Magnoliya, 2026y. - 130p.
6. Kaskova L. F. "Prevention of Dental Diseases", Kyiv, Magnoliya , 2025y., 360p.

7. Kaskova L. F.,Vashchenko I.Yu., "Dental diseases prevention.", Kyiv, Magnoliya, 2025y., 250p.

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