

PRIVATE HIGHER EDUCATIONAL INSTITUTION
"INTERNATIONAL ACADEMY OF ECOLOGY AND MEDICINE"
Department of Dentistry

SYLLABUS
EDUCATIONAL DISCIPLINE

«Orthodontics»

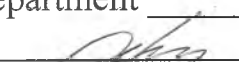
LEVEL OF HIGHER EDUCATION The second (master's) level

DEGREE OF HIGHER EDUCATION Master

FIELD OF KNOWLEDGE 22 Healthcare

SPECIALTY 221 Dentistry

COURSE 4

Considered and approved
at a meeting of the Department of Dentistry
Protocol № 1 from «01» 09 2020 p.
Acting head of the department _____
MD, prof.  Kuts P.V.

Kiev 2020

1. General information	
Subject	Orthodontics
Lector	Zvolynska Alisa Mykhailivna, Ph.D. Polishchuk Ivanna Serhiivna Goropatska Anna-Maria Olehivna
Teacher's e-mail	forum-for-me@bigmir.net
Discipline format	Normative discipline.
The volume of the discipline	90 hours , 3 ECTS
Link to the distance learning site	maem.kiev.ua
Consultations	Web conferences in various programs (Zoom, Skype, Myit, Jitsy, Teams, Viber, Facebook, Cisco Webs). Exchange tasks via e-mail, Wandrive
2. Annotation to the course	
<p>"Orthodontics" is a discipline that allows students to master the knowledge of etiology, pathogenesis, clinic, diagnosis, prevention and treatment of dental anomalies and deformities, as well as dentition defects. Teaching the discipline "Orthodontics" in the 4th year gives students the opportunity to study the definition of etiology, pathogenesis, clinic, diagnosis, prevention and treatment of color abnormalities, structure of hard tissues of teeth, shape and size, number, pathology of eruption, position of teeth, anomalies of dental arches, and sagittal, vertical and transverse pathologies of occlusion.</p> <p>The subject of study of the discipline "Orthodontics" is the acquisition of knowledge: classifications, modern ideas about the etiology and pathogenesis, the origin and patterns of clinical manifestations of various abnormalities of individual teeth, the position of individual teeth and pathological bites depending on the class and form and methods of prevention and treatment. Module №2 is studied in the 4th year. Anomalies and deformations of the human dental apparatus. Content module №1. Anomalies of individual teeth. Content module №2. Bite anomalies.</p>	
3. Purpose and objectives of the course	
<p>The purpose of the study of orthodontics is determined by the ultimate goals set on the basis of OPP training of the doctor in the specialty according to the block of its content modules (scientific training), and is the basis for building the content of the discipline. The description of goals is formulated through skills in the form of target tasks (actions). On the basis of the final goals, for each module or content module specific goals are formulated in the form of certain skills (actions), target tasks that ensure the achievement of the ultimate goal of the discipline.</p> <p>In accordance with Annex B of the OPP, the ultimate objectives of the study of orthodontics are:</p> <ul style="list-style-type: none"> - Analyze the results of examination of a patient with dental anomalies and deformities - Identify dispensary groups for the supervision of orthodontic patients and carry out preventive measures in the group with risk factors - Identify the leading syndromes and symptoms in an orthodontic clinic - Detect congenital and acquired defects of the maxillofacial area - Demonstrate mastery of moral and deontological principles of a medical specialist and the principles of professional subordination at orthodontic reception - Substantiate and formulate a preliminary clinical diagnosis of dental anomalies and deformities - To substantiate and formulate a syndrome orthodontic diagnosis - Carry out differential diagnosis of diseases in orthodontics - Carry out differential diagnosis of somatic diseases that require special tactics of management of the patient in childhood - Conduct examinations of orthodontic patients - Carry out primary and secondary prevention of dental anomalies and deformities 	
4. Competencies and learning outcomes	
Learning outcomes	Teaching methods

Have modern methods of prevention of diseases orthodontic pathologies	Lectures, practices, oral interviews, tests, dialogue with applicants for higher education, creative work with the creation of multimedia presentations and their presentation, independent work with literary sources
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Integral:

Ability to solve problems and problems in the field of health care in the specialty "Dentistry" in a professional activity or in the learning process, which involves research and / or innovation and is characterized by uncertainty of conditions and requirements.

General:

1. Ability to abstract thinking, search, analysis, synthesis; processing information from various sources, basics of evidence-based medicine. 2. Ability to lifelong learning. 3. Knowledge and understanding of the subject area and understanding of the profession. 4. Ability to implement knowledge in practice. 5. Ability to communicate orally and in writing in the state language. Ability to communicate in a foreign language. 6. Ability to effectively professional and interpersonal communication and use of information and communication technologies. 7. The ability to adapt to new conditions and situations and the ability to act autonomously in them. 8. Ability to identify and solve problems. 9. Ability to work in a team, including interdisciplinary and international. 10. Observance of deontological norms in professional activity. 11. Ability to implement a system of knowledge and practical skills to ensure a healthy lifestyle and patients. 12. Ability to self-assess their own achievements and increase their level. 13. Ability to assess the state of the environment, to help eliminate its negative effects on health. 14. Ability to act socially responsible and civic conscious. 15. Ability to organize legal support and management of professional activities. 16. Leadership in the development and implementation of innovations and their use in professional activities. 17. The ability to exercise their rights and responsibilities as a member of society, to realize the need for its sustainable development, the rule of law. 18. The ability to preserve and multiply moral, cultural, scientific values and achievements of society.

Special (professional, subject):

1. Examine an orthodontic patient: - with anomalies in the size of individual teeth; - with anomalies in the shape of individual teeth; - with anomalies in the number of individual teeth; - with diastemas and porches; - with crowded teeth; - with cake anomalies; - with vestibulo-oral position of teeth. 2. Know the classification of anomalies of individual teeth. 3. Analyze the prevalence and intensity of abnormalities of individual teeth and the position of individual teeth and identify factors that affect these indicators. 4. Analyze the results of the examination of an orthodontic patient: - with anomalies in the size of individual teeth; - with anomalies in the shape of individual teeth; - with anomalies in the number of individual teeth; - with diastemas and porches; - with crowded teeth; - with cake anomalies; - with vestibulo-oral position of teeth. 5. Justify and formulate a preliminary clinical diagnosis: - with anomalies in the size of individual teeth; - with anomalies in the shape of individual teeth; - with anomalies in the number of individual teeth; - with diastemas and porches; - with crowded teeth; - with cake anomalies; - with vestibulo-oral position of teeth. 6. Carry out differential diagnosis of diseases: - with anomalies in the size of individual teeth; - with anomalies in the shape of individual teeth; - with anomalies in the number of individual teeth; - with diastemas and porches; - with crowded teeth; - with cake anomalies; - with vestibulo-oral position of teeth. 7. Determine the changed color of teeth.

5. Organization of course training

The volume of the course

Type of lesson	<i>Total amount of hours</i>
Lectures	10
Practical classes	40
Independent work	40

Course signs

Semester 7-8	Specialty <u>221 Dentistry</u>	Course (year of study) 4	Normative discipline
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Course thematics

**THEMATIC PLAN OF LECTURES
Thematic plan of lectures on orthodontics
For 4th year students of the 7th semester**

№	Topic	Hours
1	Etiology, pathogenesis, clinic, diagnosis, prevention and treatment of anomalies of individual teeth, color, structure of hard tissues of the tooth, number (adentia, overcomplete teeth).	2
2	Mesial occlusion. Frequency, classification, etiology, differential diagnosis, treatment, prevention.	2
3	Distal occlusion. Frequency, classification, etiology, differential diagnosis, treatment, prevention.	2
	Total	6

**Thematic plan of lectures in the discipline "Orthodontics"
for 4th year students, 8th semester**

№	Topic	Hours
1.	Vertical occlusion anomalies. Deep bite. Etiology, pathogenesis, clinic, diagnosis, prevention, treatment.	2
2.	Vertical occlusion anomalies. Open bite. Etiology, pathogenesis, clinic, diagnosis, prevention, treatment.	2
	Total	4

**THEMATIC PLAN OF PRACTICAL CLASSES
Thematic plan of practical classes
For 4th year students 7 semesters**

№	Topic	Hours
1	Anatomical and physiological features of development and structure of tissues and organs of the thyroid gland in children. Anesthesia of surgical interventions in the maxillofacial area (maxillofacial area) in children in an outpatient and inpatient setting. Surgery to remove temporary and permanent teeth in children.	3
2	Odontogenic and neodontogenic periostitis of the jaws in children. Acute odontogenic osteomyelitis and neodontogenic (hematogenous, traumatic) osteomyelitis of the jaws in children. Chronic osteomyelitis of the jaws in children. Primary chronic osteomyelitis.	3
3	Acute inflammatory diseases of the temporomandibular joint (TMJ) in children - arthritis. Chronic inflammatory diseases of the TMJ (chronic arthritis, secondary deforming osteoarthritis, ankylosis) in children.	3
4	Inflammatory odontogenic cysts of the jaws from temporary teeth	3
5	Control	2
	Total	14

**Thematic plan of practical classes in the discipline "Orthodontics"
for 4th year students, 8th semester**

№	Topic	Hours
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1	Vertical occlusion anomalies. Deep bite. Etiology, pathogenesis, clinic, diagnosis	3
2	Vertical occlusion anomalies. Deep bite, treatment, prevention.	3
3	Vertical occlusion anomalies. Open bite. Etiology, pathogenesis, clinic, diagnosis.	3
4	Vertical occlusion anomalies. Open bite, treatment, prevention.	3
5	Credit	4
	Total	16

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS (IWS)

Thematic plan of independent extracurricular work of students 4th year 7-8 semesters

№	Topic	Hours	Types of control
1.	Independent elaboration of topics: 1. Prevalence and treatment of anomalies of individual teeth depending on the period of occlusion. 2. Frequency of progenic forms of occlusion in different regions of Ukraine 3. Rationale for the frequency of mesial and distal occlusions in modern civilization.	9	Abstracts, presentation
2.	1. Organization of a conference on orthodontics at the Department of Dentistry on "Vertical occlusion anomalies" 2. Independent receipt and production of control models with deep and open bite. 3. Anthropometric measurement of control models in 3 planes (according to Pon, Ton, Korkhaus, etc.).	11 10 10	Abstracts, presentation, models.
	Total	40	

6. Course evaluation system

General course evaluation system	<p>Current control is performed based on the control of theoretical knowledge, skills and abilities in practical classes. Independent study students are assessed in practical classes, and is an integral part of the final grade of the student. Current control is performed during the training sessions and aims at checking the assimilation of students learning the material. Forms of current control are:</p> <p>a) test tasks with a choice of one correct answer, with the definition of the correct sequence of actions, with determination of the conformity, defining the specific portion of the photo or diagram ("detection");</p> <p>b) individual oral questioning, interview;</p> <p>c) the solution of typical situational tasks;</p> <p>g) control of practical skills;</p> <p>Grades on the national scale ("excellent" - 5, "good" - 4, "satisfactory" - 3, "unsatisfactory" - 2), received by students, are displayed in the journals of attendance and academic group performance.</p> <p>Final control</p> <p>The final control is the form of a differentiated credit at the end of the 1st semester and at the end of the 2nd semester upon completion of the course of medical biology.</p> <p>The semester exam is a form of final control of mastering by the student of theoretical</p>
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and practical material on academic discipline. The final control (exam) is carried out at the last control lesson.

Students are admitted to the FC who have attended all the classes provided by the curriculum in the discipline and while studying the module scored the number of points not less than the minimum (**72 points**). A student who, for good or bad reasons, has missed classes, is allowed to rework academic debt for a certain period of time.

Evaluation of current educational activities. During the assessment of mastering each topic for the current educational activity of the student scores are set on a 4-point (national) assessment scale. This takes into account all types of work provided by the discipline program. The student must receive a score on each topic. Scores on the traditional scale are converted into points. The final assessment of the current academic activity is the arithmetic mean (the sum of scores for each lesson is divided by the number of lessons per semester) and translated into points according to **Table 2**.

Table 2. Conversion of the average score for the current activity into a multi-point scale (for disciplines completed by diff.credit, exam)

4-point scale	120-point scale	4-point scale	120-point scale	4-point scale	120-point scale	4-point scale	120-point scale
5	120	4,45	107	3,91	94	3,37	81
4,95	119	4,41	106	3,87	93	3,33	80
4,91	118	4,37	105	3,83	92	3,29	79
4,87	117	4,33	104	3,79	91	3,25	78
4,83	116	4,29	103	3,74	90	3,2	77
4,79	115	4,25	102	3,7	89	3,16	76
4,75	114	4,2	101	3,66	88	3,12	75
4,7	113	4,16	100	3,62	87	3,08	74
4,66	112	4,12	99	3,58	86	3,04	73
4,62	111	4,08	98	3,54	85	3	72
4,58	110	4,04	97	3,49	84	<3	Not enough
4,54	109	3,99	96	3,45	83		
4,5	108	3,95	95	3,41	82		

The maximum number of points that a student can collect for current educational activity during semester in order to be admitted to the exam is 120 points.

The minimum number of points that a student can collect for current educational activity during semester in order to be admitted to the exam is 72 points.

Calculating of the number of points is based on obtained marks of student according to traditional scale while learning subject during the semester, by calculating the arithmetic mean (AM) that is rounded to two signs after comma.

Evaluation of independent work of students. Independent work of students, which is provided by the topic of the lesson together with the classroom work, is evaluated during the current control of the topic in the relevant lesson. Assimilation of topics that are submitted only for independent work is checked during the final module control.

Evaluation of final control.

The maximum number of points that a student can score during the exam is 80 points.

The final control is considered credited if the student scored at least 60% of the maximum amount of points (for a 200-point scale - at least **50 points**).

Determining the number of points that a student scored in the discipline: the number of points that a student scored in the discipline is defined as the sum of points for the current academic activity (Table1) and for the final control (diff.credit, exam) (Table 3).

Table 3. Scale of assessment of differentiated (exam) credit:

Traditional scale	Points
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	«5»	70-80
	«4»	60-69
	«3»	50-59
Requirements for written work	The final written work is performed in the form of a test.	
Practical classes	Classroom work	
<i>The 1st semester</i>		
Classroom work - score from 2 to 5 for each topic.		
<i>Differentiated credit (semester control)</i> Semester control at the end of the 1st semester is provided in the form of Differentiated credit. (Table 2) Provides a final grade on a 120-point scale as the sum of grades for the current control of knowledge (oral examination, written survey, Practical work, abstracts). Semester control includes control of theoretical and practical training.		
Amount: minimum $72 + 50 = 122$, maximum $120 + 80 = 200$		
<i>The 2nd semester</i>		
Classroom work - score from 2 to 5 for each topic.		
Final module control is evaluated from 50 to 80 points and consists of: Test control - 40 tests = 40 points (1 point for the correct answer to 1 test). Answer to 2 theoretical questions of 20 points for each = 40 points. Amount: 80.		
Amount: minimum $72 + 50 = 122$, maximum $120 + 80 = 200$		
The list of theoretical questions to prepare students for the exam.		
LIST OF THEORETICAL ISSUES to the final modular control in the discipline "Orthodontics" to Module № 2: "Anomalies and deformations of the dental apparatus" Content module № 1 "Anomalies of individual teeth".		
1. Classification of anomalies of individual teeth. 2. Causes of tooth color abnormalities. Etiology, pathogenesis, clinic, treatment. 3. Anomalies in the shape of the teeth. Etiological factors of occurrence. Differential diagnosis with anatomical variants of the norm. 4. Acute teeth. Etiology, clinic, treatment. 5. Merged teeth. Etiology, pathogenesis, clinic, diagnosis. 6. Types of tooth fusion. Features of orthodontic treatment. 7. The influence of drain teeth on the process of formation of dental arches and occlusion. 8. Overcomplete teeth. Clinical and radiological diagnosis. Tactics of orthodontic treatment. 9. Adentia. Classification. Diagnosis. Intraoral and extraoral signs in multiple and complete adentia. 10. Methods of treatment of adentia. 11. The reasons for the violation of the process of teething. Types and forms of retention. 12. Methods of removing teeth from retention. Indications for their use. 13. Classification of anomalies in the position of individual teeth. Etiology, pathogenesis. 14. Cake occlusion. Etiology, pathogenesis. Features of treatment. 15. Diastema. Clinical and radiological classification. Causes. 16. Treatment of diastemas. Design features of removable and non-removable devices used for the treatment of diastema. 17. Vestibular position of the teeth. Etiology, pathogenesis, clinic, treatment. 18. The palatal position of the teeth. Etiology, pathogenesis, clinic, treatment. 19. Congestion of teeth. Etiology, pathogenesis, clinic, treatment. 20. Indications for serial tooth extraction. 21. Features of treatment of dystopia and transpositions of teeth. 22. Anomalies of dental arches. Etiology, pathogenesis, clinic, treatment.		
Content module №2. "Bite anomalies".		
1. The role of pathology of the upper respiratory tract and rickets in the development of occlusal deformities, methods of their prevention. 2. The role of artificial feeding in the development of occlusion anomalies. 3. Bad habits in children, their role in the pathogenesis of dental deformities. 4. Endogenous and exogenous factors that negatively affect the development of the dental and maxillofacial apparatus. 5. Etiology, pathogenesis, clinic, diagnosis, prevention and		

treatment of distal occlusion in a temporary period. 6. Etiology, pathogenesis, clinic, diagnosis, prevention and treatment of distal occlusion in the variable period. The effectiveness of stimulant therapy. 7. Features of orthodontic treatment of distal occlusion in the constant period in children and adults. Possible complications. Indications for tooth extraction and other surgical interventions. 8. Etiology, pathogenesis, clinic, diagnosis, prevention and treatment of mesial occlusion in the temporary period. The role of heredity in the occurrence of this anomaly. 9. Clinical and radiological forms of mesial occlusion. In what classifications are they reflected. Features of treatment of this anomaly in the variable period of a bite. 10. Features of orthodontic treatment of mesial forms of occlusion in the constant period in children and adults. Indications for surgery. 11. Etiology, pathogenesis, clinic, diagnosis, prevention and treatment of deep occlusion in a temporary period. Features of treatment. 12. Clinical and radiological forms of deep occlusion. In what classifications are they reflected. Advantages of the hardware method of treatment in the variable period of a bite. 13. Features of treatment of a deep bite in the constant period at children and adults. 14. Etiology, pathogenesis, clinic, prevention, diagnosis and treatment of open occlusion in a temporary period. The role of normalization of nasal breathing in the prognosis of orthodontic treatment. 15. Clinical and radiological forms of open occlusion, their diagnosis, treatment in the variable period. 16. Features of treatment of an open bite in the constant period. Tactics of treatment in children and adults. Indications for surgery. 17. Etiology, pathogenesis, clinic, diagnosis, prevention and treatment of cross-bite in the temporary period. 18. Classifications that reflect cross-bite forms. The value of clinical diagnostic tests. 19. Features of treatment of cross-bite in the constant period. 20. Clinical and diagnostic tests of Eschler-Bitner. their significance. 21. Clinical and diagnostic tests LV Ilshoi-Markosyan. their significance. 22. Surgical interventions in the complex treatment of orthodontic patients. 23. Methods of stimulation of orthodontic treatment (surgical, physiotherapeutic, biological), their essence, age indications.

The list of practical skills for final module control

LIST OF PRACTICAL SKILLS AND WORKS to the final modular control in the discipline "Orthodontics" MODULE №2: "Anomalies and deformations of the dental apparatus"

1. Be able to examine an orthodontic patient with abnormalities of individual teeth and occlusion. 2. Be able to draw up an outpatient medical history. 3. Be able to fill the outfit in the dental laboratory. 4. Be able to diagnose and perform differential diagnosis of anomalies of individual teeth and occlusion. 5. Be able to get an impression of the upper and lower jaws with different impression materials. 6. Be able to fix a constructive bite. 7. Be able to cast models of jaws. 8. Be able to measure the sagittal and vertical slits. 9. Be able to conduct clinical diagnostic tests of Ashler-Bitner, LV Ilyina-Markosyan, Kibkalo. 10. Be able to conduct anthropometric research methods according to Pon, Korkhhaus, Gerlach, Snagina and analyze research data. 11. Be able to decipher and analyze the data of side TRG. 12. Be able to describe dental, axial radiographs and orthopantomograms. 13. Be able to establish a preliminary diagnosis of an orthodontic patient. 14. Be able to establish the final diagnosis of an orthodontic patient. 15. Be able to make a plan of orthodontic treatment. 16. Be able to determine the design of the orthodontic appliance. 17. Be able to fit and pass the orthodontic appliance. 18. Be able to correct and activate the orthodontic appliance. 19. Be able to draw up a plan of preventive measures to prevent dental anomalies and deformities.

Circumstance of admission to the final control

1. Semester control at the end of the 1st semester is provided in the form of a differential credit. (Table 2) Provides a final score on a 120-point scale as the sum of scores for the current control of knowledge (oral examination, written survey, tests, verification of identification of micropreparations, abstracts), the results of 2 content modules.
2. Students are allowed to take the differentiated credit, exam only if there is no debt for the implementation of the curriculum.

7. Course policy

The organization of the educational process is carried out with the use of the European Credit

Transfer System (ECTS) to assess student performance. The points gained in the current survey, independent work and points of the final control are credited. This must take into account the student's presence in class and his activity during practical work. Inadmissible: absences and late classes; use of a mobile phone, tablet or other mobile devices during the lesson (except for the cases provided by the curriculum and methodical recommendations of the teacher); copying and plagiarism; untimely performance of the task, the presence of unsatisfactory grades for 50% or more of the submitted theoretical and practical material.

8. RECOMMENDED LITERATURE

Basic:

1. Flis P.S. Orthodontics. -Vinnytsia: "New Book", 2006. -308 p.
2. Schmut GPF, Holtgrave EA, Drescher D. Practical orthodontics. Ed. prof. P.S. Flis. Per. with him. -Lviv: GalDent, 1999.
3. Stephen Williams. A short guide to telegraphy. Ed. prof. P.S. Flis. -Lviv, 2006.
4. Sharova GV, Rogozhnikov GI Pediatric orthopedic dentistry. M., "Medicine", 1991. p. 289.
5. Khoroshilkina F.Ya. Orthodontics. Defects of teeth, dentitions, occlusion anomalies, morphofunctional disorders in the maxillofacial region and their complex treatment Medical Information Agency (MIA), 2010, -592p.
6. Flis PS, Omelchuk NA, Rashchenko NV et al. Orthodontics. -K.: Medicine, 2008 p. -336 c.
7. Doroshenko SI, Kulginsky EA Fundamentals of teleradiography K.: Health, 2007. -72 p.

Additional:

1. Bennett J., R. McLowlin, ed. Flis P.S. "Bag of orthodontic treatment by the technique of a straight arch", Lviv: "GalDent", 2001.
2. Golovko NV Prevention of dental anomalies. -Vinnytsia: Nova Kniga, 2005. -271p.
3. Declan Millet, Richard Welbury. Solving problems in orthodontics and pediatric dentistry. -M.: MEDpress-Inform, 2009. -199 p.
4. Doroshenko SI, Kulginsky EA Fundamentals of teleradiography. -K.: Zdorovja, 2007. -70 p.
5. Kanyura OA, Savichuk NO, Golubchikov MV The main directions of reforming the children's dental service. -Kyiv: Medicine, 2010.
6. Kuroyedova VD, Dmitrenko MI Modern methods of prevention of dental anomalies and deformations // World of Orthodontics. -Kyiv: Visnyk stomatologii, 2003. -No1 (4), p. 6-97.
7. McLaughlin R., J. Bennett, X. Treviso / ed. Flis P.S. "Systematized mechanics of orthodontic treatment", Lviv: "GalDent", 2005.
8. Malanchuk VO, Borisenko AV, Flis P.S. etc. Fundamentals of dentistry. -Kyiv: "Medicine", 2009.
9. Persin LS Orthodontics M.OJSC "Medicine", 2004.
10. Persin LS Orthodontics. Modern methods for diagnosing maxillofacial anomalies. A guide for doctors. -M.: OOO «Informknyga», 2007. -248p.
11. Stephen Williams. A short guide to telegraphy. Ed. prof. P.S. Flis. -Lviv, 2006.
12. Stanislav V. Maevski. Dental gnathology. -Lviv: GalDent, 2008.
13. William R. Profit. Modern orthodontics. -M.: MEDpress-Inform, 2006. -559 p.
14. Kuroyedova VD, Zhdan VN, Galich LB etc. Atlas of orthodontic appliances. -Poltava: "Dyvosvit", 2011 -156 p.
15. Ravindra Nanda, Sunil Kapila. Current therapy in orthodontics. -Mosby, 2010. -396p.

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