

СТОМ-21 ИИ

Federal State Budgetary Educational Institution of Higher Education
"North-Ossetian State Medical Academy"
of the Ministry of Healthcare of the Russian Federation



APPROVED

Rector of FSBEI HE NOSMA
MOH Russia

O.V. Remizov

«24» may 2023

EDUCATIONAL TRAINING PROGRAM OF THE DISCIPLINE

«Medical genetics in stomatology»

the main professional educational program of higher education –
specialty program in the specialty 31.05.03 Stomatologia,
approved in May 24, 2023

Form of study _____ Full-time _____

The period of development _____ 5 _____

Department of Surgical Pediatric Diseases with Medical Genetics

Vladikavkaz, 2023

When developing the work program of the discipline, the basis is based on:

1. Federal State Educational Standard of Higher Education on specialty 31.05.03 Stomatologia, approved by the Ministry of Education and Science of the Russian Federation on August 12, 2020 №984
2. Academic plan on specialty 31.05.01 General Medicine (СТОМ-21-01-21 ИИ, СТОМ-21-02-22 ИИ, СТОМ-21-03-23 ИИ), approved by the Scientific Council of the Federal State Budgetary Educational Institution of Higher Education «North-Ossetia State Medical Academy» of the Ministry of Healthcare of the Russian Federation «24» may 2023, Protocol № 8.

The educational training program of the discipline was approved at a meeting of the department of Surgical Pediatric Diseases with Medical Genetics «11» may 2023, protocol № 10.

The educational training program of the discipline was approved at the meeting of the Central Coordinating Educational and Methodological Council of May 23, 2023, Minutes No. 5.

The educational training program of the discipline was approved by the Scientific Council of the State Medical University of the Federal State Budgetary Educational Institution of Higher Education «North-Ossetia State Medical Academy» of the Ministry of Healthcare of the Russian Federation from «24» may 2023, protocol № 8.

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Contents of the working program

1. Name of discipline;
2. List of planned results of training in discipline, related to the planned results of the educational program;
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4. The amount of discipline in credit units, indicating the number of academic or astronomical hours allocated for the contact work of students with the teacher (by types of training classes) and for the independent work of students;
5. Discipline content structured by subject (s), indicating the number of academic or astronomical hours allocated to them and the types of training sessions;
6. List of educational and methodological support for independent work of students in discipline;
7. An evaluation fund for intermediate certification of students in the discipline;
8. List of basic and additional educational literature necessary for the study of discipline;
9. List of resources of the Internet information and telecommunication network (hereinafter referred to as the Internet) required for discipline training;
10. Methodological instructions for students in discipline development;
11. A list of information technologies used in the discipline education process, including a list of software and information reference systems (if necessary);
12. Description of the material and technical basis necessary for the discipline education process.
13. Conducting educational activities using e-learning and distance learning technologies

1. Name of discipline: Medical genetics

2. List of planned results of training in discipline, related to the planned results of the educational program;

№ № п/п	Competence number / index	Content of competence	Lesson topic	Competence achievement indicators	Development results		
					know	be able to	to own
1	2		3		4	5	6
1.	UC-1	Capable realize critical analysis problem situations on basis systemic approach to develop strategy of action	Introduction to the course of medical genetics.	ИД-1 УК-1. Identifies problem situations and searches for the necessary information to solve problems in the professional field.	Modern concepts of the human genome, karyotype, mechanisms of maintaining the constancy of the karyotype in a number of generations of cells and organisms.	Collect anamnesis and genealogical information, draw up a pedigree, analyze the inheritance of a disease or trait in the family.	Skills of hereditary pathology propaedeutics. Compilation of the patient's pedigree.
2.	GPC -1	Able to implement moral and legal norms, ethical and deontological principles in professional activities		ИД-1 ОПК-1. Knows how to observe moral and legal foundations in a professional activities. ИД-2 ОПК-1 Knows how competently and accessible present professional information, observing the principles of bioethics and deontology	<ul style="list-style-type: none"> • Moral and ethical norms, rules and principles of professional medical behavior, ethical foundations of a modern doctor; • Basic ethical documents of domestic and international professional associations and organizations 	<ul style="list-style-type: none"> • Apply basic legal norms; • Communicate with patients, their parents, medical personnel in accordance with the rules of medical ethics and medical deontology 	Moral and ethical argumentation;
3.	GPC-2	Able to carry out and		ИД-1 ОПК-2 Knows how to	Possesses prepara-	. Assess genetic risk, cal-	Assess genetic risk,

		monitor the effectiveness of preventive measures, the formation of a healthy lifestyle and sanitary and hygienic education of the population		analyze public awareness of healthy lifestyle and health literacy. ИД-2 ОПК-2 Possesses preparation skills oral presentation or printed text, promoting a healthy lifestyle, increasing literacy of the population in health culture and prevention.	tion skills oral presentation or printed text, promoting a healthy lifestyle, increasing literacy of the population in health culture and prevention.	culate the risk of having a sick child in a family with a burdened hereditary history	calculate the risk of having a sick child in a family with a burdened hereditary history.
4.	UC-1	Capable realize critical analysis problem situations on basis systemic approach to develop strategy of action	Gene diseases and syndromes, features of the clinical picture, methods of diagnosis, prevention and treatment.	ИД-1 УК-1. Is able to search and interpret information on professional scientific problems ИД-2 УК-1. Knows how to identify problem situations ИД-3 УК-1. Knows how to apply a systematic approach to solving problems in the professional field	Modern concepts of the human genome, mechanisms of maintaining the constancy of the karyotype in a number of generations of cells and organisms.	Collect a complete history of the patient, interpret the examination results, make a preliminary diagnosis, outline the amount of additional studies	Medical and biological terminology and use it deliberately in professional communication.
5.	GPC-1	Able to implement moral and legal norms, ethical and deontological principles in professional activities		ИД-1 ОПК-1. Knows how to observe moral and legal foundations in a professional activities. ИД-2 ОПК-1. Knows how competently and accessible present professional information in accordance with the principles of bioethics and deontology.	<ul style="list-style-type: none"> • Mechanisms of mutation, their classification, medical and evolutionary significance of mutations. • Moral and ethical norms, rules and principles of professional medical behavior, ethical foundations of a modern doctor; • Moral and ethical norms, rules and principles of pro- 	Apply basic legal norms; <ul style="list-style-type: none"> • Communicate with patients, their parents, medical personnel in accordance with the rules of medical ethics and medical deontology 	Moral and ethical argumentation;

					fessional medical behavior, the rights of the patient and the doctor; <ul style="list-style-type: none"> • Basic ethical documents of domestic and international professionalizations 		
6.	GPC-5	Able to assess morphofunctional, physiological conditions and pathological processes in the human body to solve professional problems		ИД-1 ОПК-5. He is proficient in the algorithm of clinical, laboratory and functional diagnostics in solving professional problems. ИД-2 ОПК-5. Evaluates the results of clinical, laboratory and functional diagnostics in solving professional problems. ИД-3 ОПК-5. Determines morphofunctional, physiological states and pathological processes of the human body	<ul style="list-style-type: none"> • Terminology used to describe the phenotypic characteristics of the patient • Semiotics of organ and system damage in children; • Scope of DNA-methods • Laboratory and instrumental diagnostic methods; 	<ul style="list-style-type: none"> • Collect a hereditary history; • Determine the status of the patient; • Describe the patient's phenotype; • Assess the possibility of a patient having one or another hereditary pathology; • Interpret data from laboratory and instrumental studies; • Conduct a syndromological analysis of the data obtained 	<ul style="list-style-type: none"> • Skills of clinical examination of children of different ages (visual examination, palpation, percussion, auscultation). • The method of comparing the clinical picture and the results of laboratory and instrumental research Own the methodology for conducting syndromological analysis;
7.	GPC-7	Able to prescribe treatment and monitor its effectiveness and safety		ИД-1 ОПК-7 Conducts effective, safe therapy based on clinical guidelines of the Ministry of Health of Russia	• Basic methods of collecting and processing statistical information	• Collect and statistically analyze medical information and interpret the results	• Algorithm of statistical research
8.	PC-2	Examination of the patient in order to establish a diagnosis		ИД-1 ПК-2 Collects complaints, anamnesis of life and illness of the patient and analyzes the information received. ИД-2 ПК-2 Conducts a complete physical examination of the pa-	Research planning principles	<ul style="list-style-type: none"> • Use various information and educational technologies to improve your professional level; • Organize a self- 	<ul style="list-style-type: none"> • Methods of searching for medical information using the library fund and Internet re-

				<p>tient (examination, palpation, percussion, auscultation) and interprets its results.</p> <p>ИД-3 ПК-2 Substantiates the necessity and scope of laboratory examination of the patient.</p> <p>ИД-4 ПК-2 Обосновывает необходимость и объем инструментального обследования пациента.</p> <p>ИД-5 ПК-2 Substantiates the need to refer the patient for consultations to specialist doctors.</p> <p>ИД-6 ПК-2 Analyzes the results of the patient's examination, if necessary, justifies and plans the volume of additional studies</p> <p>ИД-7 ПК-2 Interprets the results of collecting information about the patient's illness.</p> <p>ИД -8 ПК -2 Interprets the data obtained during laboratory examination of the patient.</p> <p>ИД -9 ПК -2 Interprets the data obtained during the instrumental examination of the patient.</p> <p>ИД -10 ПК -2 Interprets the data obtained in consultation with the patient by specialist doctors.</p> <p>ИД -12 ПК -2 Carries out differential diagnosis of diseases of internal organs from other diseases</p>		<p>learning process.</p> <ul style="list-style-type: none"> • Conduct an analysis of scientific literature and the results of scientific research, evaluate the level of evidence of the data obtained 	<p>sources</p> <ul style="list-style-type: none"> • Algorithm and methods of scientific and practical research
10	UC-1	Capable realize critical analysis problem situations on basis systemic	Chromosomal diseases and syn-	ИД-1 УК -1. Knows how to search and interpret information on professional scientific issues	Features of clinical manifestations of hereditary patholo-	Formulate a presumptive diagnosis of chromosomal pathology and some	Family history collection skills.

		approach, develop strategy of action	dromes, peculiarities of the clinical picture, methods of diagnosis, prevention and treatment.	ИД-2 УК -1. Knows how to identify problem situations ИД-3 УК -1. Knows how to apply a systematic approach to solving problems in the professional field ИД-4 УК -1 Interprets the results of collecting information about the patient's illness.	gy, general principles of clinical diagnosis of chromosomal diseases, causes of origin and diagnostic significance of morphogenetic variants	of the most common monogenic diseases, determine the need for additional examination, including specific genetic methods	
11	GPC-1	Able to implement moral and legal norms, ethical and deontological principles in professional activities		ИД -1 ОПК -1. Knows how to observe moral and legal foundations in a professional activities. ИД -2 ОПК -1. Knows how competently and accessible present professional information in accordance with the principles of bioethics and deontology.	<ul style="list-style-type: none"> •Moral and ethical norms, rules and principles of professional medical behavior, ethical foundations of a modern doctor; •Basic ethical documents of domestic and international professional associations and organizations 	<ul style="list-style-type: none"> •.Apply basic legal norms; •Communicate with patients, their parents, medical personnel in accordance with the rules of medical ethics and medical deontology 	Moral and ethical argumentation;
12	GPC-5	Able to assess morphofunctional, physiological conditions and pathological processes in the human body to solve professional problems		ИД -1 ОПК-5. He is proficient in the algorithm of clinical, laboratory and functional diagnostics in solving professional problems. ИД -2 ОПК -5. Evaluates the results of clinical, laboratory and functional diagnostics in solving professional problems. ИД -3 ОПК -5. Determines morphofunctional, physiological states and pathological process-	<ul style="list-style-type: none"> •Scope of cytogenetic methods. •Indications, contraindications, principles of preparing a child for molecular genetic analysis •Basic medical documentation 	<ul style="list-style-type: none"> • Interpret the data of karyotypes, differentiate regular mosaic forms of the main chromosomal syndromes. • Interpret molecular genetic data 	<ul style="list-style-type: none"> • The method of differentiation of chromosomes by external characteristics, their distribution into groups in accordance with the international classification.

				es of the human body	used in medical genetic consultation: •genetic map, notification of identified congenital malformation, phenotype map		
13	GPC-7	Able to prescribe treatment and monitor its effectiveness and safety		ИД -1 ОПК 7 Conducts effective, safe therapy based on clinical guidelines of the Ministry of Health of Russia	• Basic methods of collecting and processing statistical information	• Fill out the basic medical documentation of the medical genetic consultation: genetic map, notification of the identified congenital malformation, phenotype map; • Enjoy the computer program "Sindiag", scientific bases and Internet platforms for searching medical information for the implementation of professional activities	• Algorithm for searching medical information.
14	PC-2	Examination of the patient in order to establish a diagnosis		ИД -1 ПК -2 Collects complaints, anamnesis of life and illness of the patient and analyzes the information received. ИД -2 ПК -2 Conducts a complete physical examination of the patient (examination, palpation, percussion, auscultation) and interprets its results. ИД -3 ПК -2 Substantiates the necessity and scope of laboratory examination of the patient.	Research planning principles	• Use various information and educational technologies to improve your professional level; • Organize a self-learning process. • Conduct an analysis of scientific literature and the results of scientific research, evaluate the level of evi-	• Methods of searching for medical information using the library fund and Internet resources • Algorithm and methods of scientific and practical research

				<p>ИД -4 ПК -2 Substantiates the necessity and scope of instrumental examination of the patient.</p> <p>ИД -5 ПК -2 Substantiates the need to refer the patient for consultations to specialist doctors.</p> <p>ИД -6 ПК -2 Analyzes the results of the patient's examination, justifies and plans the volume of additional studies if necessary</p> <p>ИД -7 ПК -2 Interprets the results of collecting information about the patient's disease.</p> <p>ИД -8 ПК -2 Interprets the data obtained during laboratory examination of the patient.</p> <p>ИД -9 ПК -2 Interprets the data obtained during the instrumental examination of the patient.</p> <p>ИД -10 ПК -2 Interprets the data obtained in consultation with the patient by specialist doctors.</p> <p>ИД -12 ПК -2 Carries out differential diagnosis of diseases of internal organs from other diseases</p>		<p>dence of the data obtained</p>	
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3. Place of discipline in the structure of the educational program

The discipline "Medicine genetic" belongs to the basic part of Block 1 of the Federal State Educational Standard of Higher Education in the specialty " Stomatologia".

4, The amount of discipline

№ № п/п	Type of work		Total credit units	Total hours	Semester number 8
					hours
1	2		3	4	5
1	Contact work of students with teacher (total), including:		-	46	46
2	Lectures (L)		-	10	10
3	Lectures (L)		-	36	36
4	Seminars (C)		-	-	-
5	Laboratory work (LR)		-		
6	Independent work of the student (IWS)		-	26	26
7	Intermediate type appraisals	credit (C)	+	-	+
		exam (E)	-	-	-
8	TOTAL: General labor intensity	hours	-	72	72
		ZET	2	2	2

5. Content of the discipline

п/№	№ Semester number	The name of the discipline section	Types of educational activities (in hours)				Forms of monitoring progress
			L	PZ	IWS	Total	
1	2	3	4	5	6	7	8
1.	8	Medicine genetic	10	36	26	72	test work, interview on situational tasks, written or computer testing, individual homework, essay
Total			10	36	26	72	offset

6. The list of educational and methodological support for independent work of students in the discipline

№/п	№ semestr	Name of educational and methodological development
1	8	1. Пузырев, В.П. Медицинская патогенетика: дидактические аспекты [Электронный ресурс]/В.П. Пузырев //Медицинская генетика, 2010.- 9(12). http://biblioclub.ru/index.php?page=book_view&book_id=237645 2. Основы генетики и наследственные нарушения развития у детей : учеб. пособие для вузов / А. Ю. Асанов, А. Ю. Асанов, Н. С. Демикова, С. А. Морозов. - М. : Academia,2003. - 216 с.

7.Фонд оценочных средств для проведения промежуточной аттестации обучающихся по дисциплине

№	List of competencies	№ semester	No. semester	Evaluation criterion (s)	Grading scale	Name FOS
1	2	3	4	5	6	7
1	UC-1 GPC-1, GPC -2, GPC -5, GPC -7, PC-2	8	see the standard for assessing the quality of education, approved. By order of the Federal State Budgetary Educational Institution of Higher Education SOGMA of the Ministry of Health of Russia dated 10.07.2018, No. 26	see the standard for assessing the quality of education, approved. By order of the Federal State Budgetary Educational Institution of Higher Education SOGMA of the Ministry of Health of Russia dated 10.07.2018, No. 26	see the standard for assessing the quality of education, approved. By order of the Federal State Budgetary Educational Institution of Higher Education SOGMA of the Ministry of Health of Russia dated 10.07.2018, No. 26	tests, situational tasks, exam tickets

8. Fund of assessment tools for intermediate certification of students in the discipline

Main literature

п/№	Наименование	Автор (ы)	Год, место издания	Кол-во экземпляров	
				в библиотеке	на кафедре
1	Medical genetics	Lynn B. Jorde, John C. Carey, Michael J. Bamshad	Philadelphia: Elsevier, Book aid international, 2016	50	
2	Клиническая генетика: учебник	Бочков Н.П..	М.: ГЭОТАР-Медиа, 2001, 2002, 2004, 2006, 2013	21 20 37 4 39	2
				«Консультант студента» http://www.studmedlib.ru/book/ISBN978597043570	

				0.html http://www.studmedlib.ru/book/ISBN5923104539.html	
3.	Наследственные синдромы и медико-генетическое консультирование	С.И. Козлова и др.	М.: Практика, 1996, 2007	94 1	3
4.	Медицинская и клиническая генетика для стоматологов: учеб. пособие	ред. О.О. Янушевич	М.: ГЭОТАР-Медиа, 2008, 2015	4 20	1
				«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970431757.html	
5.	Медицинская генетика: учебник	Гинтер Е.К.	М.: Медицина, 2003	5	1

Additional literature

п/№	Наименование	Автор (ы)	Год, место издания	Кол-во экземпляров	
				в библиотеке	на кафедре
1.	Генеалогический метод в диагностике и профилактике наследственных болезней: учеб.-метод пособие для студентов	сост. Т.И. Букановская и др.	Владикавказ, 2012	ЭБ СОГМА	25
2.	Наглядная медицинская генетика	Притчард Д., Корф Б.	М. : ГЭОТАР-Медиа, 2009	1	
3.	Генетика в практике педиатра: руководство для врачей	Вахарловский В. Г., Романенко О. П., Горбунова В. Н.	СПб : Феникс, 2009	1	
4	Медицинская генетика. 397 наглядных иллюстраций, схем и таблиц, 43 клинических случая: учеб.пособие	Ньюсбаум Р.Л., Мак-Иннес Р.Р., Виллард Х.Ф.	М. : ГЭОТАР-Медиа, 2010	1	
5	ДНК-диагностика и медико-генетическое консультирование	Иллариошкин С. Н.	М.: МИА, 2004	1	
6	Тератология человека: Руководство для врачей	ред. Г.И. Лазюк	М.: Медицина, 1991	5	
7	Клиническая генетика. Геномика и протеомика наследственной патологии: учеб.пособие	Мутовин Г.Р.	М.: ГЭОТАР-Медиа, 2010	«Консультант студента» http://www.studmedlib.ru/book/ISBN9785970411520.html	

9. The list of resources of the information and telecommunication network "Internet" necessary for mastering the discipline

<http://www.vogis.org>

<http://www.medgenetics.ru>

<http://molbiol.edu.ru>

<http://www.ncbi.nlm.nih.gov>

http://ru.wikipedia.org/wiki/Генетика_человека

<http://bse.sci-lib.com/article009384.html>
<http://bio.1september.ru/2002/02/2.htm>
<http://genetics.rusmedserv.com/>
www.geneforum.ru/
<http://humgenlab.vigg.ru/>
<http://www.medgen.ru/>
<http://humbio.ru/humbio/genetics.htm>
<http://schools.keldysh.ru/sch1952/Pages/Timokhina04/Biolog/18.htm>
<http://genetica.meduniver.com/>
<http://lib.mexmat.ru/books/9478>
http://moikompas.ru/compas/chromatic_aberration
<http://www.genepassport.ru>
<http://elibrary.ru/defaultx.asp>

10. Guidelines for organizing the study of the discipline:

Training consists of contact work (46 hours), including a lecture course (10 hours) and practical exercises (36 hours), as well as independent work (26 hours).

When studying the discipline, use the basic and additional literature and master practical skills: description of the patient's phenotype, drawing up a pedigree and calculating genetic risk, interpretation of laboratory results (decoding of karyotypes, interpretation of molecular genetic studies) and paraclinical examination methods, differentiation of the most common monogenic and chromosomal diseases.

In accordance with the requirements of the Federal State Educational Standard, active and interactive forms of conducting classes - business and role-playing games - are widely used in the educational process. The proportion of classes conducted in interactive forms is at least 10% of classroom lessons.

Independent work of students implies preparation for practical classes and includes working out basic and additional literature, completing assignments for extracurricular independent work, writing essays, compiling monothematic folders, tables.

Work with educational literature is considered as a type of educational work in the discipline "medical genetics" and is performed within the hours allotted for its study (in the CDS section). Each student is provided with access to the library funds of the Academy and the department.

For each section of the discipline, guidelines for students and guidelines for teachers have been developed.

During the study of the discipline, students independently conduct an examination of the patient and draw up a phenotype map and submit an abstract on the topic. Writing an abstract, an educational phenotype map contributes to the formation of clinical thinking and practical skills (abilities).

The student's work in a group forms a sense of teamwork and sociability.

Teaching students helps them develop the skills of communicating with the patient, taking into account the ethical and deontological characteristics of pathology and patients. Independent work with patients contributes to the formation of professional behavior, accuracy, and discipline.

The initial level of students' knowledge is determined by testing, the current control of mastering the subject is determined by oral questioning during classes, during clinical analyzes, when solving typical situational tasks.

At the end of the study of the discipline, an intermediate control of knowledge is carried out using test control, testing of practical skills, solving situational problems, interviews on questions.

11. The list of information technologies used in the implementation of the educational process in the discipline

Microsoft Office
PowerPoint;
Windows Media Player

12. Description of the material and technical base necessary for the implementation of the educational process in the discipline

№/ п	Equipment identification	number	Technical condition
1	2	3	4
Special equipment			
1.	teaching aids: terminological reference book, semiotics and clinical diagnosis of hereditary diseases, genealogical method in the diagnosis and prevention of hereditary diseases, neonatal screening	1	satisfying
2.	sets of multimedia visual materials for various sections of the discipline	1	satisfying
3.	posters: classification of mutations, DNA structure, translation, DNA replication, Down syndrome, Edwards syndrome, Shereshevsky-Turner syndrome, adrenogenital syndrome, an algorithm for examining a pregnant woman, variants of pedigree records, examples of designating numerical and structural changes in the karyotype	9	satisfying
4.	audio lectures	1	satisfying
5.	A computer	1	satisfying
6.	Printer	1	satisfying

13. Conducting educational activities using e-learning and distance learning technologies

In the context of the introduction of restrictive measures (quarantine) associated with an unfavorable epidemiological situation, the threat of the spread of a new coronavirus infection and other force majeure events that do not allow full-time training, it is possible to study this discipline or part of it using e-learning and distance educational technologies. Teaching the discipline in the above situations will be carried out through the development of an electronic course with access to video lectures and interactive course materials: presentations, articles, additional materials, tests and various assignments. When conducting training sessions, monitoring progress, as well as intermediate certification of students, platforms of the electronic information and educational environment of the academy and/or other e-learning systems recommended for use in the academy, such as Moodle, Zoom, Webinar, etc. Lectures can be presented in the form of audio, video, "live lectures", etc. Conducting seminars and practical classes is possible in on-line mode both in synchronous and asynchronous modes. Seminars can be conducted in the form of web conferences.