


FEDERAL STATE BUDGET EDUCATIONAL INSTITUTION
OF HIGHER EDUCATION
"ROSTOV STATE MEDICAL UNIVERSITY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

Faculty of Education of foreign students, residents and postgraduates

CONFIRM
Supervisor
educational program
/ E.S. Belousova /
(signature) (FULL NAME.)
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DISCIPLINE WORKING PROGRAM

NORMAL PHYSIOLOGY

Speciality 31.05.01 General medicine

Form of education full-time

Rostov-on-Don
2020

I. GOALS AND OBJECTIVES OF MASTERING THE DISCIPLINE

Goals mastering the discipline: to promote the formation in students of systematized knowledge about the vital functions of the whole organism, the patterns of functioning of organs and the mechanisms of their regulation in interaction with each other and with environmental factors, as well as about the functional foundations of clinical, laboratory and instrumental research methods.

Tasks:

- formation in students of a systematic approach to understanding physiological mechanisms underlying interaction with environmental factors and the implementation of adaptive strategies of the human body and the implementation of normal functions of the human body from the perspective of the theory of functional systems;
- students study methods and principles of research assessing the state of the body's regulatory and homeostatic systems in experiments, taking into account their applicability in clinical practice;
- students study the patterns of functioning of various systems of the human body and the characteristics of intersystem interactions in the context of performing purposeful activities from the perspective of the doctrine of adaptation and cross-adaptation;
- teaching students methods for assessing the functional state of a person, the state of regulatory and homeostatic ones in different types of purposeful activities;
- nurturing feelings of humanity, instilling bioethical norms and rules in the activities of a doctor.

II. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

The process of studying the discipline is aimed at developing the following competencies in accordance with the Federal State Educational Standard of Higher Education and the EP of Higher Education in this specialty:

- a) general professional (OPK): OPK-7, OPK-9**

III. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF EP VO

3.1. The academic discipline is basic.

3.2. The formation of the above competencies is facilitated by the study of the following previous disciplines: physics, mathematics; medical informatics; chemistry; biochemistry; biology; histology, embryology, cytology; anatomy.

3.3. The discipline (name) creates the prerequisites for the formation of these competencies by the following disciplines: topographic anatomy; basic medicine; microbiology, virology; immunology; pharmacology; pathological anatomy; clinical pathological anatomy; pathophysiology; clinical pharmacology; propaedeutics of internal diseases; vaccinology; endovascular surgery.

IV. CONTENT AND STRUCTURE OF DISCIPLINE

The labor intensity of the discipline is 7 z/252 hours

4.1. Sections of the discipline studied in the 3rd semester - 3z, in the 4th semester - 4z

Section number	Section name	Number of hours					
		Total	Independent work under the supervision of a teacher				SRO
			L	WITH	ETC	LR	
Semester 3							
1.	Physiology of excitable tissues and intercellular interaction.	25	4	12			9
2.	Physiology of sensory functions.	28	4	15			9
3.	Nervous and hormonal regulation of physiological functions.	38	6	15			17
4.	Physiological foundations of mental activity.	12	2	3			7
5.	Milestone test control on the physiology of excitable tissues and intercellular interaction, sensory functions, regulation of physiological functions and the physiological basis of mental activity.	5		3			2
	Interim certification form	108	test				
Semester 4							
6.	Physiology of the blood system.	17	2	7			8
7.	Physiology of the respiratory system.	17	2	7			8
8.	Physiology of blood and lymph circulation.	29	6	13			10
9.	Physiology of digestion, energy metabolism, thermoregulation and nutrition.	22	4	eleven			7
10.	Physiology of excretion.	17	2	7			8
eleven.	Milestone test control on the physiology of visceral systems	3		3			3
	Interim certification form	36	exam				
	<i>Total:</i>	252	32	96			88

SRO- independent work of students

L- lectures

WITH- seminars (in disciplines in accordance with the RUP)

LR –laboratory work (according to disciplines in the Republican Unitary Enterprise)
ETC– practical classes (in disciplines in accordance with the curriculum, they include clinical practical classes)

4.2. Remote and independent work under the supervision of a teacher.

Lectures

Section number	No. lectures	Lecture topics	Number of hours
Semester 3			
1.	1	Physiology of excitable tissues.	2
	2	Physiology of intercellular interaction.	2
2.	3	Physiology of sensory systems. Physiology of pain.	2
	4	Physiology of balance, hearing and vision.	2
3.	5	Physiology of the somatic nervous system.	2
	6	Physiology of the autonomic (vegetative) nervous system.	2
	7	Physiology of the endocrine system.	2
4.	8	Physiological foundations of mental activity.	2
Semester 4			
6.	9	Physiology of the blood system.	2
7.	10	Physiology of respiration.	2
8.	eleven	Physiology of the heart.	2
	12	Physiology of systemic and regional hemodynamics.	2
	13	Regulation of blood pressure.	2
9.	14	Physiology of digestion in the oral cavity and stomach.	2
	15	Physiology of digestion in the intestines.	2
10.	16	Physiology of the kidneys.	2

Seminars

Section no.	No. seven - bunk	Seminar topics	Number of hours	Forms of current control
Semester 3				
1.	1	Physiology of excitable tissues.	3	test.
	2	Physiology of nerve and muscle cells.	3	test.

Secti on no.	No. seven - bunk	Seminar topics	Numbe r of hours	Forms of current control
	3	Physiology of nerve and neuromuscular synapses. Physiology of nerve centers.	3	test.
	4	Frontier control by module: Physiology of excitable tissues and intercellular interaction.	3	test control, test work.
2.	5	General principles of analyzer organization. Physiology of smell and taste.	3	test.
	6	Physiology of somatovisceral sensitivity. Physiology of pain.	3	test.
	7	Physiology of balance and hearing.	3	test.
	8	Physiology of vision.	3	test.
	9	Frontier control by module: "Physiology of sensory functions"	3	test control, test work.
3.	10	Functions of the spinal cord, brain stem and cerebellum.	3	test.
	elev en	Functions of the striopallidal system, limbic system and	3	test.
	12	Physiology of the autonomic (vegetative) nervous system.	3	test.
	13	Physiology of the endocrine system. Endocrine functions of the hypothalamus and pituitary gland.	2	test.
	14	Particular physiology of the endocrine system.	1	test.
	15	Frontier control by module: "Nervous and hormonal regulation of physiological functions."	3	test control, test work.
4.	16	Physiology of instincts and conditioned reflexes.	2	test.
	17	Physiology of memory, sleep, motivation and emotions.	1	test.
5.	18	Interim control on the physiology of excitable tissues and intercellular interaction, sensory functions, regulation of physiological functions and the physiological basis of mental activity.	3	test control.
Semester 4				
6.	1	Physiology of the blood system. Laboratory methods for blood testing.	3	test.

Section no.	No. seven - bunk	Seminar topics	Number of hours	Forms of current control
	2	Physiology of blood groups and hemostasis system.	3	test.
7.	3	Physiology of external respiration. Methods for studying external	3	test.
	4	Regulation of external respiration.	3	test.
	5	Physiology of the heart. Methods for studying the heart.	3	test.
	6	Physiology of systemic and regional hemodynamics. Methods for measuring blood pressure and	3	test.
	7	Regulation of the heart.	3	test.
	8	Regulation of blood pressure.	3	test.
8.	9	Frontier control by module: “Physiology of blood, respiratory, circulatory and	3	test control, test work.
9.	10	Physiology of digestion in the oral cavity and stomach.	3	test.
	eleven	Physiology of digestion in the intestines.	3	test.
	12	Physiology of energy metabolism, thermoregulation and nutrition.	3	test.
10.	13	Physiology of the kidneys. Laboratory methods for urine examination.	3	test.
	14	Regulation of urine formation and excretion.	3	test.
	15	Frontier control by module: “Physiology of digestion, energy metabolism, thermoregulation, nutrition and	3	test control test work.
eleven.	16	Interim control on the physiology of visceral systems.	3	test control.

4.3. Independent work of students

Section number	Type of independent work of students	Number of hours	Forms of current control
Semester 3			
1.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	9	test control, control

2.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	9	test control, control
Section number	Type of independent work of students	Number of hours	Forms of current control
3.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	17	test control, control
4.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	7	test control, control
5.	Preparing for testing.	2	test control.
Semester 4			
6.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	8	test control, control
7.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	6	test control, control
8.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	12	test control, control
9.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	10	test control, control
10.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	8	test control, control
eleven.	Preparing for testing.	4	test control.
	Total	88	

V. ASSESSMENT FUND FOR CURRENT CONTROL AND INTERMEDIATE CERTIFICATION

The fund of assessment tools for determining the level of development of competencies as a result of mastering the discipline is an appendix to the work program.

VI. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF DISCIPLINE

6.1. Main literature.

1. Human physiology: textbook / ed. V.M. Pokrovsky, G.F. Briefly. - M.: Medicine, 2011. - 661 p.

6.2. Additional literature.

1. Normal physiology: a textbook for students. universities / ed. K.V. Sudakova, V.V. Andrianov, Yu.E. Vagin. - M.: GEOTAR-MEDIA, 2012. – 875 p.

2. Kamkin A.G. Atlas of physiology: textbook. manual T.1: in 2 volumes / A.G. Kamkin, I.S. Kiseleva. – M.: GEOTAR-Media, 2012. – 443 p.
3. Kamkin A.G. Atlas of physiology T. 1: textbook. manual: in 2 volumes / A.G. Kamkin, I.S. Kiseleva. – M.: GEOTAR-MEDIA, 2010. – 404 p.

4. Physiology in figures and tables: questions and answers: textbook. allowance for medical universities / ed. V.M. Smirnova. - M.: MIA, 2007. – 457 p.
5. Human physiology: atlas of dynamic schemes: textbook. manual for university students / K.V. Sudakov, V.V. Andrianov, Yu.E. Vagin [etc.]; edited by K.V. Sudakova. – M.: GEOTAR-Media, 2015. – 416 p.
6. Large workshop on human and animal physiology: textbook. aid for students universities: in 2 volumes / ed. HELL. Nozdracheva. – M.: Academy, 2007. T.1 – 608 p.
7. Large workshop on human and animal physiology: textbook. aid for students universities: in 2 volumes / ed. HELL. Nozdracheva. – M.: Academy, 2007. T. 2 – 644 p.
8. Chesnokova S.A. Atlas of normal physiology: textbook. allowance for medical universities / S.A. Chesnokova, S.A. Shastun; edited by ON THE. Agadzhanian. - M.: MIA, 2007. – 496 p.
9. Modern course of classical physiology. Selected lectures / ed. Yu.V. Natochina, V.A. Tkachuk. – M.: GEOTAR-Media, 2007. 384 p.
10. Educational and methodological manual for practical classes in normal physiology / ed. Ya.A. Khananashvili. – Rostov n/d: Publishing house of Rostov State Medical University, 2010. - 150 p.
11. Khananashvili Y.A. Lectures on the physiology of regional blood circulation / Ya.A. Khananashvili. – Rostov n/d: Publishing house of Rostov State Medical University, 2009. – 88 p.
12. Assignments in test form to prepare for the “Comprehensive Exam” (human anatomy and physiology, fundamentals of pathology): specialty 060101 general medicine. – Rostov n/a: KMC “KOPITSENTR”, 2012. – 46 p.

6.3. Periodicals

1. Journal of Basic Medicine and Biology
2. News of higher educational institutions. North Caucasus region. Natural Sciences.
3. Russian Physiological Journal named after. THEM. Sechenov.
4. Advances in physiological sciences.
5. Human physiology.

6.4. Internet resources

ELECTRONIC EDUCATIONAL RESOURCES		Access to the resource
1.	Electronic library RostSMU. – URL: http://109.195.230.156:9080/opacg/	Unlimited access
2.	Student advisor: EBS. – Moscow: LLC “IPUZ”. - URL: http://www.studmedlib.ru	Unlimited access
3.	National Electronic Library. - URL: http://neb.rf/	Access from computers libraries
4.	ScienceDirect. Freedom Collection [journals] / Elsevier. – URL: www.sciencedirect.com by IP addresses RostSMU. (<i>National project</i>)	Unlimited access
5.	Federal electronic medical library Ministry of HealthRussia. - URL: http://www.femb.ru/feml/ , http://feml.scsml.rssi.ru	Open access
6.	Free Medical Books . - URL: http://www.freebooks4doctors.com/	Open access
7.	Med-Edu.ru: medical video portal. - URL: http://www.med-edu.ru/	Open access

6.5. Guidelines for students on mastering the discipline

1. Educational and methodological manual for practical classes in normal physiology / ed. Ya.A. Khananashvili. – Rostov n/d: Publishing house of Rostov State Medical University, 2010. - 150 p.

2. Khananashvili Y.A. Lectures on the physiology of regional blood circulation / Ya.A. Khananashvili. – Rostov n/d: Publishing house of Rostov State Medical University, 2009. – 88 p.

VII. MATERIAL AND TECHNICAL SUPPORT OF DISCIPLINE

7.1. Technical and electronic means.

1. Personal computers;
2. Presentations, sets of slides, tables, multimedia visual materials on various sections of the discipline.