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T. Biktimirov`s Medicine Faculty

T.P.Gening, T.V.Abakumova, S.O.Gening

METHODICAL INSTRUCTIONS FOR ORGANIZING INDEPENDENT WORK OF
STUDENTS IN THE DISCIPLINE "PHYSIOLOGY OF VISCERAL SYSTEM"
FOR SPECIALTY 31.05.01 General Medicine

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Reviewers:

Associate Professor at the Department of Morphology UIISU, Ph.D ***T.I.Kuznetsova***

Gening T.P.

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The manual was prepared in accordance with the requirements of the work program and contains guidelines on the main sections of the discipline " Physiology of Visceral Systems" in English in accordance with the current curriculum. The manual is intended for independent work of students of the medical faculty.

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CONTENTS

	Introduction	
	The purpose of the Course	
	Discipline Tasks	
	Expected Results (Competencies)	
	Sections, topics, questions for independent work of students	
	Literature	

Introduction

- The discipline "Physiology of Visceral Systems" refers to the basic part of B1.0.51 of the main professional educational program. For its successful development, knowledge of biochemistry, anatomy, histology, embryology, cytology, embryonic development of body tissues and normal physiology, the practice of obtaining primary professional abilities and skills, including primary abilities and skills of research activities (Care of therapeutic and surgical sick. (Part 1), Clinical practice (Care of therapeutic and surgical patients (Part 2), assistant to the nursing staff.
- "Physiology of visceral systems" forms a knowledge base for the subsequent study of pathophysiology, clinical pathophysiology, neuroanatomy, propaedeutics of internal diseases, the basics of functional and laboratory diagnostics, pathological anatomy, pathological anatomy, pathophysiology of extreme conditions, anesthesiology, intensive care and intensive care, forensic medicine, surgical gastroenterology and endoscopy and the preparation and passing of the state exam; hygiene, endocrinology, psychology and pedagogy of medical practice, obstetrics and gynecology, diagnosis and treatment of extrapulmonary tuberculosis, modern biomedical technologies, nanotechnology in medicine, a biopsychosocial approach to medical rehabilitation, the practical application of the international classification of functioning in rehabilitation for various pathologies.

- **The purpose of the Course**

- to form students' systematic knowledge about holistic living organism and its parts, the basic laws of functioning and mechanisms of their regulation of the interaction between each other and with environmental factors, on the physiological basis of clinical and physiological methods of research used in functional diagnosis and the study integrative human activity.

Objectives:

- the formation of students ' systematic approach to understanding the physiological mechanisms underlying interaction with environmental factors and implementation of adaptive strategies of the human body, the implementation of the normal functions of the human body from the standpoint of the theory of functional systems;
- the study of the methods and principles of the research assessment of the state regulatory and homeostatic systems of the organism in the experiment, taking into account their applicability in clinical practice;
- teaching students methods of evaluation of human functional state, state regulators and homeostatic in different types of purposeful activity;
- formation bases of clinical thinking based on the analysis of the nature and structure interorganic and intersystem relations from the position of integrated physiology for future practical activities of the doctor.

Expected Results (Competencies)

Code and name implemented	The list of planned learning outcomes in the discipline (module), correlated with indicators of achievement of competences
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competence	
GPC-5	<p>Know:</p> <p>structure, topography and development of cells, tissues, organs and systems of the body in interaction with their normal function, anatomical and physiological, age-sex and individual characteristics of the structure and development of a healthy and large organism; the structure of the human body in relation to function, the functional systems of the human body, their regulation and self-regulation when exposed to the external environment is normal; physicochemical essence of the processes occurring in a living organism at the molecular, cellular, tissue and organ levels; basic patterns of development and vital activity of the organism based on the structural organization of cells, tissues and organs; histo-functional features of tissue elements, methods of their study.</p> <p>be able to:</p> <ul style="list-style-type: none"> • use educational, scientific, popular science literature, the Internet for professional activities, • use physical, chemical and biological equipment; work with magnifying equipment (microscopes, optical and simple loupes); to give a histophysiological assessment of the state of various cellular, tissue and organ structures; interpret the results of the most common methods of functional diagnostics used to identify pathologies of the blood, heart and blood vessels, lungs, kidneys, liver and other organs and systems; evaluate the results of electrocardiography; spirometry; thermometry; hematological indicators; to distinguish in blood serum the normal values of the levels of metabolites (glucose, urea, bilirubin, uric acid, lactic and pyruvic acids, etc.), to register an ECG in experimental animals and humans, to calculate and analyze the leukocyte formula; determine and evaluate the results of electrocardiography; spirometry; thermometry; hematological parameters. <p>own: methods of assessing the physiological state of the patient; methods of physical examination of the patient.</p>

Independent work is made up of preparing for classes on questions for each lesson and preparation for intermediate control on questions for offset and examination. The following educational technologies are used in the organization of independent work of classes: Auditorium independent work on the discipline is performed on practical exercises under the direct guidance of the teacher and on his instructions. The workshop on normal physiology contains various experimental tasks in accordance with all the main sections of the theoretical course and is independently carried out in the laboratory of the Department of Physiology, equipped with laboratory equipment. As part of the course, students solve virtual problems - this is a simulator for independent work. Outside classroom independent work is performed by the student on the instructions of the teacher, but without his direct participation. The main types of independent work of students without the participation of teachers are: the formation and assimilation of the content of lecture notes on the basis of textbooks recommended by the lecturer, including information educational resources (electronic textbooks, electronic libraries, etc.); preparation for practical work, their design.

When organizing the independent work of classes, the following educational technologies are used.

Extracurricular independent work is performed by the student on the instructions of the teacher, but without his direct participation. The main types of independent work of students without the participation of teachers are:

1. the formation and assimilation of the content of the recommended educational literature, including educational information resources (electronic textbooks, electronic libraries, etc.)
2. preparation for practical exercises, their design.

Sections, topics, questions for independent work of students

No	No of semester	The name of the section of the discipline (module)	Types of students' independent work	Form of control
1	2	3	4	5
1	4	Regulation of physiological functions	Preparation for classes. Preparation for the current control.	Oral survey
2		Homeostasis. The internal environment of the body.	Preparation for classes. Preparation for the current control.	Oral survey
		Functional systems for maintaining homeostasis	Preparation for classes. Preparation for the current control.	Oral survey

Independent study of topics and sections	Current knowledge control form
Morphofunctional characteristic of lymph circulation in maintaining the body	Questions in the final classes, credit. Job interview
External manifestations of cardiac activity (electrical, nervous, mechanical, their origin) phonocardiography, -balistocardiography, -vector cardiography -echocardiography.	Questions in the final classes, credit. Job interview
The speed of lymph movement in various parts of the lymphatic system.	Questions in the final classes, credit. Job interview
The organs are the blood depot. Changes in organ circulation during muscle load, food intake, pregnancy, hypoxia, stress and other conditions.	Questions in the final classes, credit. Job interview
Ventilation of the lungs, its unevenness in various parts of the organs.	Questions in the final classes, credit. Job interview
Blood oxygen capacity. Oxygen utilization rate under different conditions.	Questions in the final classes, credit. Job interview

The importance of microflora and gas in the intestines.	Questions in the final classes, credit. Job interview
Parahormonal regulation of functions.	Questions in the final classes, credit. Job interview

Form of knowledge control on the independent study of the subject: a colloquium, credit and exam.

Literature

principal literature

1. Gening T.P., Abakumova T.V., Gening S.O. Physiology of visceral systems: Education guidance for students of medical faculty /. – Ulyanovsk: UISU, 2019. – 96 p.

2. Gening T.P., Abakumova T.V., Mikhailova, Kadyshcheva E.N. Normal physiology. Part II.

Physiology of Cardio-vascular system, Breath, Digestion, Excretion, Endocrine glands,

Metabolism and Energy, Blood. Second Edition Ulyanovsk State University. 2018 135 p.

URL: <ftp://10.2.96.134/Text/Gening2018-2.pdf>

additional literature

1. Cardiac Biomechanics in Normal Physiology and Disease/Encyclopedia of Cardiovascular Research and Medicine 2018, Pages 411-419

UPL: <https://www.sciencedirect.com/science/article/pii/B9780128096574110592>

2. Anatomy & Physiology: Current Research

URL: <https://www.omicsonline.org/anatomy-physiology.php>

Professed data base, directory and search systems:

SPS Consultant Plus

The electronic library system IPRBooks

System " Antiplagiat.HIGHER EDUCATIONAL»

Clinical Collection: collection for medical universities, clinics, medical libraries //EBSCOhost: [портал]. – URL: <http://web.a.ebscohost.com/ehost/search/advanced?vid=1&sid=e3ddfb99-a1a7-46dd-a6eb-2185f3e0876a%40sessionmgr4008>. – Access mode: for authorization users. - Text: electronic.

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