


<p> ОҢТҮСТІК-ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ </p>		<p>  SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия» </p>
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GUIDELINES FOR INDEPENDENT WORK OF STUDENTS

Discipline: Normal genitourinary system “Physiology”

Discipline code:MSN-2209


Title of EP: 6B10115 “Medicine”

Volume of teaching hours/credits: 150 hours/5 credits (1 credit)

Course and semester of study: 2nd year, 3rd semester

Independent work: 6 hours

Shymkent, 2023

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Methodological recommendations for independent work of students were developed in accordance with the work program of the discipline Genitourinary system in the norm “Physiology” (syllabus) according to EP 6B10115 “Medicine” and discussed at a meeting of the department

Protocol No. 1 " 01 " 09 2023

Head department, candidate of medical sciences,
associate professor



B.D. Tanabaev

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Methodological recommendations No. 1

1. Topic: Non-excretory functions of the kidneys.

2. Purpose: to study the non-excretory functions of the kidneys.

3. Tasks:

1. Prepare literature on the topic of the lesson.
2. Study and analyze theoretical material.
3. Prepare a presentation on the topic of the lesson.
4. Present the presentation material in an accessible manner.
5. Be prepared to answer questions about the presentation.

4. Form of completion/assessment: Preparation and defense of the presentation.

5. Criteria for fulfilling the SIW (requirements for completing the task): see Appendix No. 1.

6. Deadlines:

7. Literature: Appendix No. 2


8. Control:

Answer the questions:

1. What is the endocrine function of the kidneys?
2. What is the metabolic function of the kidneys?
3. What is the homeostatic function of the kidneys?
4. What is the regulatory function of the kidneys?
5. What is the role of the kidneys in the regulation of hematopoiesis?
6. What is the role of the kidneys in regulating ionic composition?
7. What is the role of the kidneys in regulating the maintenance of blood pH levels?

Solve test tasks:

1. The normal glomerular filtration rate in women is:
 - A) 110 ml/min
 - B) 50 ml/min
 - C) 80 ml/min
 - D) 135 ml/min
 - E) 150 ml/min
2. Primary urine is formed ... per day.
 - A) 170-180 l
 - B) 50-60 l
 - C) 70-80 l
 - D) 90-110 l
 - E) 130-160 l
3. Under normal water regime, ... urine is released per day.
 - A) 1000-1500 ml
 - B) 500-750 ml

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C) 2500-3000 ml

D) 4000-5000 ml

E) 5500-6000 ml

4. In the loop of Henle it is reabsorbed ... in the descending limb, ... in the ascending limb.

A) water sodium

B) sodium potassium

C) sodium glucose

D) urea water

E) sodium water

5. Water reabsorption is ensured by:

A) antidiuretic hormone

B) glucagon

C) somatotropin

D) parathyroid hormone

E) insulin

6. Quantitative methods for studying kidney function:

A) determination of renal blood flow, secretion, filtration, reabsorption

B) Zimnitsky test, determination of filtration, Volhard, electrophysiological

C) determination of filtration, reabsorption, secretion, electrophysiological

D) radioisotope, according to Zimnitsky, electrophysiological, Volhard

E) Volgard, determination of the coefficient of purification, secretion, renal plasma flow

7. More acidic urine is formed after:

A) significant physical activity, eating meat

B) eating vegetarian food, physical activity

C) intake of dairy and plant foods, intake of water

D) eating salty foods, fruit juices

E) physical activity, eating fruits

8. Secondary urine differs from primary urine in that it contains:

A) no glucose, no proteins, high concentration of sulfates

B) no glucose, urea, high concentration of sulfates

C) no glucose, creatine, low sulfate concentration

D) high concentration of salts, low concentration of glucose and sulfates

E) globulins, penicillin appear, phosphate concentration is reduced

9. Non-threshold substances include:


A) creatinine, inulin, sulfates

B) creatinine, glucose, inulin

C) creatinine, glucose, sulfates

D) creatinine, inulin, phosphates

E) amino acids, inulin, water

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10. Urine formation is based on three main processes:

- A) glomerular filtration, tubular reabsorption and secretion
- B) glomerular reabsorption, tubular filtration and secretion
- C) glomerular secretion, tubular reabsorption and filtration
- D) glomerular secretion and filtration, tubular reabsorption
- E) glomerular reabsorption and secretion, tubular filtration

Methodical recommendations No. 2

1. Topic: Excretory functions of the skin.

2. Purpose: to study the structural and functional features of the sebaceous and sweat glands.

3. Tasks:

- 1. Prepare literature on the topic of the lesson.
- 2. Study and analyze theoretical material.
- 3. Prepare a presentation on the topic of the lesson.
- 4. Present the presentation material in an accessible manner.
- 5. Be prepared to answer questions about the presentation.

4. Form of completion/assessment: Preparation and defense of the presentation.

5. Criteria for fulfilling the SIW (requirements for completing the task): see Appendix No. 1.

6. Deadlines:

7. Literature: Appendix No. 2


8. Control:

Answer the questions:

- 1. What are the functions of the skin?
- 2. What is the function of sweat glands?
- 3. What is the function of the sebaceous glands?
- 4. Reflex regulation of sweating
- 5. The role of the skin in the process of thermoregulation.

Solve test tasks:

- 1. When 1 g of water evaporates from the surface of the skin, the body loses ... heat.
 A 0.56 kcal
 B 56 kcal
 C 5.6 kcal
 D 0.056 kcal
 E 0.68 kcal
- 2. When the temperature of the external environment increases, in homeothermic animals ... heat production... heat transfer.
 A decreases increases
 B increases decreases
 C decreases decreases

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D increases increases

E increases remains constant

3. The main centers of thermoregulation are located in

A hypothalamus

B In the thalamus

C cerebellum

D subcortical ganglia

E spinal cord

4. Plays an important role in maintaining normal human body temperature.

A sweating

B activity of the sebaceous glands

C pigment formed in the skin under the influence of ultraviolet radiation

D presence of receptors that perceive heat, pain, touch

5. The skin performs an excretory function with the help of

A) the hair

B) capillaries

C) sweat glands

D) sebaceous glands

Methodical recommendations No. 3

1. Topic: The process of fertilization of an egg. Implantation. Pregnancy.

2. Purpose: to study the process of egg fertilization and the stages of pregnancy.

3. Tasks:

1. Prepare literature on the topic of the lesson.

2. Study and analyze theoretical material.

3. Prepare a presentation on the topic of the lesson.

4. Present the presentation material in an accessible manner.

5. Be prepared to answer questions about the presentation.

4. Form of completion/assessment: Preparation and defense of the presentation.

5. Criteria for fulfilling the SIW (requirements for completing the task): see Appendix No. 1.

6. Deadlines:

7. Literature: Appendix No. 2

8. Control:

Answer the questions:


1. What are gonads?

2. What functions do the ovaries perform?

3. What functions do the testes perform?

4. What role does the pituitary gland play in regulating testicular function?
and ovaries?

5. What is the hypothalamic-pituitary-ovarian cycle?

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6. What is the menstrual (uterine) cycle?

7. Spermatogenesis

8. The process of fertilization of an egg.

9. Periods of pregnancy.

Solve test tasks

1. Hormones that control the menstrual cycle....

- A) FSH, estrogens, LSH, progesteron
- B) melanotropin, androgens, LSG, progesteron
- C) STH, FSH, progesteron, estrogens
- D) FSH, glucagon, growth hormone, parathyroid hormone
- E) FSH, insulin, progesteron

2. Female sex hormones

- A) estrone, estriol, estradiol
- B) parathyroid hormone, serotonin, thyrocalcitonin
- C) serotonin, estriol, bradykinin
- D) thyroxine, estrone, testosterone
- E) testosterone, thyroxine, serotonin

3. Female reproductive glands produce hormones:

- A) libirins and statins
- B) thyroxine, triiodothyronine and thyrocalcitonin
- C) estrogens and progesterone
- D) androsterone and testosterone

4. Male sex glands produce hormones:


- A) libirins and statins
- B) thyroxine, triiodothyronine and thyrocalcitonin
- C) estrogens and progesterone
- D) androsterone and testosterone

5. The hypothalamus produces releasing factors that affect the functions of the gonads:

- A) libirins and statins
- B) thyroxine, triiodothyronine and thyrocalcitonin
- C) testosterone and progesterone
- D) parathyroid hormone and calcitonin

6. The pituitary gland produces gonadotropins:


- A) follicle-stimulating, luteinizing, luteotropic hormones
- B) thyroid-stimulating, follicle-stimulating, luteotropic hormones
- C) somatotropic, luteinizing, luteotropic hormones
- D) adrenocorticotropic, follicle-stimulating, luteinizing hormones

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Appendix No. 1

Performance/Evaluation Criteria:

Execution form	Performance criteria	Grade	Criteria for evaluation
1. Preparation and defense of the presentation	1) the number of literary sources – at least 5, their mandatory indication at the end of the presentation in accordance with generally accepted standards; 2) presentation volume – at least 20 slides; 3) the presence of a detailed plan according to which the presentation is prepared; 4) the slides are concise and informative; 5) the presence of diagrams, tables, drawings in the presentation; 6) accuracy of presentation; 7) a brief and accessible summary of the presentation material; 8) error-free answers to questions on the topic of the presentation	Great corresponds to points: 95-100; 90-94	The student prepared a presentation on the topic on time, independently, carefully, with a volume of at least 20 concise and meaningful slides, using at least 5 literary sources and the presence of a detailed plan, provided diagrams, tables and drawings corresponding to the topic during the defense demonstrated deep knowledge of the topic and accurately answered all questions asked
		Fine corresponds to points: 85-89; 80-84; 75-79; 70-74	The student prepared a presentation on the topic on time, independently, carefully, with a volume of at least 20 concise and meaningful slides, using at least 5 literary sources and the presence of a detailed plan, provided diagrams, tables and drawings corresponding to the topic during the defense demonstrated good knowledge of the topic, but made unprincipled mistakes when answering questions
		Satisfactorily	The student prepared a presentation on the topic on


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		corresponds to points: 65-69; 60-64; 50-54	time, independently, but sloppily, with a volume of at least 20 empty slides, using less than 5 literary sources and the presence of an undeveloped plan, provided an insufficient number of diagrams, tables and figures, relevant topic, answered questions uncertainly during the defense, made fundamental errors
		Unsatisfactorily corresponds to points 25-49 0-24	The student did not prepare a presentation on the topic on time, or prepared it on time, but not independently, sloppily, with less than 20 meaningless slides, without citing literary sources, in the absence of a plan, or made gross mistakes when answering questions or could not answer the questions and did not defend the abstract

Appendix No. 2

Literature in physiology: In Russian: main:

1. Kositsky, G. I. Human physiology. T.1: textbook / G. I. Kositsky.-3rd ed. revised. and additional –Almaty: New book. 2021. – 268 p.
2. Kositsky, G. I. Human physiology. T.2: textbook / G. I. Kositsky. - 3rd ed. reworked and additional - Almaty: New book, 2021. - 284 p.
3. Kositsky, G. I. Human physiology. T.3: textbook / G. I. Kositsky. - 3rd ed. reworked and additional - Almaty: New book, 2021. - 152 p.

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4. Normal physiology: textbook / Ed. Academician of the Russian Academy of Medical Sciences B.I. Tkachenko. -3rd ed., rev. and additional – M.: GEOTAR – Media, 2018.- 688 p. + wholesale. Disc (CD-ROM)

5. Esenbekova, Z. E. Course of lectures on normal physiology: textbook / Z. E. Esenbekova, T. N. Naumova, A. S. Alipbekova. - 3rd ed. add. and processed - Bishkek: [b. i.], 2019. - 365 p.

6. Normal physiology: textbook / Ed. L. Z. Telya, N. A. Agadzhanyan; M-in image. and science of the Russian Federation. Rec. State Budgetary Educational Institution of Higher Professional Education "First Moscow State Medical University named after I.M. Sechenov." - M.: "Litterra", 2015.

additional:

1. Situational tasks for the course of normal physiology: educational manual /V. K. Kasymbekov [and others]. - Almaty: Evero, 2016. - 144 p.

2. Mindubaeva, F. A. Guide to practical classes in physiology [Text]: educational manual /. - Almaty: Evero, 2016. - 208 p.

In Kazakh language:

basically:

1. Babsky EB, Babskaya NE. Human physiology: Textbook 1-2-3 volumes.-Evero, 2015.

2. Normal physiology: textbook / Russian Ministry of Education; ed. etc. K. V. Sudakov; aud to the language and editor-in-chief. F. A. Mindubaeva. - ; I. M. Presented by the First MMSU named after Sechenov. - M. : GEOTAR - Media, 2015. - 864 pages. + el. Opt. disc

additional:


11. Kasymbekov, V. K. A set of situational problems on normal physiology: educational and methodological tool / V. K. Kasymbekov, R. E. Nurgalieva, A. T. Kaldybaeva. - Almaty: Evero, 2016. - 152 pages.

2. Kasymbekov, V. K. Physiological research methods: teaching-methodical tool / V. K. Kasymbekov, F. K. Balmagonbetova, A. T. Kaldybaeva. - Almaty: Evero, 2016. - 176 pages.

3. Satbaeva, Kh. K. Human physiology: textbook / Kh. K. Satbaeva, A. A. Utepbergenov, Zh. B. Nildibaeva. - 2nd head. corrected and supplemented. - Almaty: Evero, 2010. - 664 pages.

4. Saidakhmetova, A. S. Instructions for practical lessons in physiology: textbook / A. S. Saidakhmetova, S. O. Rakhizhanova. - Karaganda: AKNUR, 2016. - 260 pages.

5. Normal physiology: textbook / Russian Ministry of Education; ed. etc. K. V. Sudakov; aud to the language and editor-in-chief. F. A. Mindubaeva. - ; I. M. Presented by the First MMSU named after Sechenov. - M. : GEOTAR - Media, 2015. - 864 pages. + el. Opt. disc

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6. Nurmukhambetuly, A. Russian-Kazakh medical (physiological) dictionary = Russian-Kazakh medical (physiological) dictionary: dictionary / A. Nurmukhambetuly. - Almaty: Evero, 2014. - 903 p.

6. Mindubaeva, F. A. Instruction for practical lessons in physiology: teaching-methodical tool / F. A. Mindubaeva, A. Kh. Abushakhmanova, A. Kh. Shandaulov. - Almaty: Evero, 2012. - 186 pages.

In English:

basically:

1. Babsky, Y. B. Human physiology. Volum 1.: textbook / Y. B. Babsky, Y. B. Babsky. - Almaty : "Evero" , 2017. - 308 p.

2. Babsky, Y. B. Human physiology. Volum 2.: textbook / Y. B. Babsky, U. B. Babsky. - Almaty : "Evero" , 2017. - 296 p.

3. Babsky, Y. B. Human physiology. Volum 1.: textbook / Y. B. Babsky, Y. B. Babsky. - Almaty : "Evero" , 2017. - 260 p.

4. Jain, A. K. Textbook of physiology [Text] : textbook. Vol. 1 / A. K. Jain . - 7 th ed. - Nev Delhi : Avichal publishing company, 2017. - 596 p.

5. Hall John E. Guyton and Hall textbook of medical physiology : textbook / John E. Hall. - Philadelphia : Elsevier, 2016. - 927 p.

6. Kharissova, N. M. Physiology of the digestive system : educational-methodical manual. - Almaty : Evero, 2015. - 428 p.

additional:

1. Smagulov , N. K.: textbook / N. K. Smagulov , N. M. Kharissova ; Ministry of public health of Republic of Kasakhstan; Karaganda state medical universitety. - Almaty : LLP "Evero", 2013.

Electronic resource:

1. Normal physiology [Electronic resource] : textbook / pod ed. B. I. Tkachenko. - 3rd edition, ex. and the ball. - Electronic text files. (53.1 Mb). - M. : GEOTAR - Media, 2017. - email. opt. disc

2. Human physiology. Atlas of dynamic drawings [Electronic resource]: textbook / K. V. Sudakov [etc.]; Kazakh language. aud. M. K. Bloody. - Electronic text files. (105 Mb). - M. : GEOTAR - Media, 2017. – 464 p.

3. Normal physiology [Electronic resource]: textbook / Kazakh language. aud. F. A. Mindubaeva; ed. K. V. Sudakov. - Electronic text files. (1.42 Mb). - M. : GEOTAR - Media, 2015. - 864 p.

4. Kamkin, A. G. Atlas of physiology. В 2 t. Т. 1 [Electronic resource] : учеб.пособие / A. G. Kamkin, I. S. Kiseleva. - Electronic text files. (58.4 MB). - M. : GEOTAR - Media, 2010. - 408 p. people opt. disc

5. Shandaulov A.H. The basis is general physiology
https://mbook.kz/ru/index_brief/373/

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6. Aizman, R. I. Physiology of a person: allowance / R. I. Aizman, N. P. Abaskalova, N. S. Shulenina. - 2nd ed., pererab. and ex. - M. : INFRA-M, 2018. - 431, [1] p.

elibrary.kaznu.kz

7. Georgieva S.A. Human physiology: S.A. Georgieva, N.V. Belinina, L.I. Prokofieva, G.V. Korshunov, V.F. Kirichuk, V.M. Golovchenko, LK Tokaeva. -Almaty: Evero, 2020. ill., 480 p. <https://www.elib.kz/>

8. Kasymbekov V.K. etc. Situational tasks on the course of normal physiology. Educational and methodological manual /V.K.Kasymbekov, R.E.Nurgalieva, A.T.Kaldybayeva and others - Almaty: Evero, -2020. - 144 p. <https://www.elib.kz/>

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4	Electronic library of "Student Adviser" Medical University	http://www.studmedlib.ru
5	"Paragraph" information system "Medicine" department	https://online.zakon.kz/Medicine
6	"Law" is an electronic source of legal information	https://zan.kz
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