OŃTÚSTIK-QAZAQSTAN 📌	
MEDISINA (SKMA) MEDICAL	
«Оңтүстік Қазақстан медицина академиясы» АҚ	т медицинская академия»
Department of Normal and Pathological Physiology	044-53/19()
Methodical recommendations for independent work discipline " General Pathological Physiology "	Edition № 1 Page.1 from 28

### METHODOLOGICAL INSTRUCTIONS FOR INDEPENDENT WORK OF STUDENTS

**Discipline:** General pathological physiology **Discipline code:** GP 3201-2 **Name of EP: 6B130100-**"General Medicine" **Volume of teaching hours/credits:** 150 hours/5 credits **Course and semester of study:** III course, V semester **Independent work of students:** 100 hours

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АКАДЕМІАSY АСАДЕМҮ «Оңтүстік Қазақстан медицина академиясы» АҚ АО «Южно-Казахстанска	я медицинская академия»
Department of Normal and Pathological Physiology	044-53/19 ( )
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Methodical recommendations for independent work of students were developed in accordance with the work program of the discipline (syllabus) EP 6B130100-"General Medicine" and discussed at a meeting of the department

Protocol No. 10 from " 6 " 062022 Head Department Gelegs Zhakipbekova G.S.

соборовородии и казакнятам **SKMA** -1970--

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No. 1

- **1. Topic:** Postresuscitation disease.
- 2. Purpose: to study the etiopathogenesis of postresuscitation disease.

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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

- 5. Criteria for performance: see Appendix No. 1.
- 6. Deadlines: 1-2 weeks.
- 7. Literature: see Appendix No. 2.

8. Control

#### Questions

- 1. What are the pathophysiological bases of resuscitation ?
- 2. What is post-resuscitation illness ?
- 3. What are the periods of postresuscitation illness?
- 4. What are the principles of therapy for acute resuscitation disease?
- 5. What are the features of the course of post-resuscitation illness in children?

### Tests

- 1. The onset of clinical death is evidenced by ....
- A) cessation of breathing and heartbeat, lack of reflexes
- B) slow pulse
- C) confusion
- D) a sharp decrease in blood pressure
- E) rare shallow breathing
- 2. Duration of clinical death ....
- A) 5-6 minutes
- C) 1-2 minutes
- C) 30-60 min
- D) 1-2 hours
- E) 1-2 days
- 3. When clinical death occurs, first of all, the functions are turned off

tion ... .

A) parenchymal organs

B) endocrine glands

C) central nervous system

- D) immune system
- E) reproductive system

No. 2

- 1. Topic: The concept of predisease. Identification of pre-illness by stress tests.
- **2. Purpose:** to study the signs of pre-disease, the conditions for its occurrence and transition to the disease.
- 3. Tasks:



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- 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

- 5. Criteria for fulfillment : see Appendix No. 1.
- 6. Deadlines: on the 2nd week.
- 7. Literature: see Appendix No. 2.

### 8. Control

### Questions

- 1. What is predisease?
- 2. What are the conditions for the occurrence of pre-illness?
- 3. What examples of pre-illness can be given?
- 4. How can prediseases be detected by stress tests?
- 5. What is the mechanism of influence of the stress test on the body?
- 6. What are the features of the development of pre-illness in children?

### Tests

- 1 . Predisease is ...
- A) a state intermediate between health and illness
- C) the simplest form of the pathological process
- C) a typical pathological reaction of the body
- D) the first stage of the disease
- E) with a combination of damage and adaptive mechanisms
- 2 . Factors contributing to the development of atherosclerosis , ... .
- A) d hypocholesterolemia
- B) inhibition of atherogenesis
- C) d hypolipidemia
- E) d hypercholesterolemia
- E) d hypoglycemia
- 3. An external condition that contributes to the emergence of human disease is ... .
- A) anomalies of the constitution
- B) altered heredity
- C) malnutrition
- D) early childhood
- E) old age
- Number 3
- 1. Topic: Pathophysiological aspects of aging.
- 2. Purpose: to study the causes and mechanisms of aging development.

## 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.



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4. Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

5. Criteria for performance: see Appendix No. 1.

6. Deadlines: on the 3rd week.

7. Literature: see Appendix No. 2.

## 8.Control

### **Ouestions**

- 1. What are the theories of aging ?
- 2. What are the mechanisms of aging?
- 3. What changes occur in organs during aging?
- 4. What are the principles of prevention of premature aging?

### Tests

- 1. Age in etiology plays the role of ... disease.
- A) conditions only
- C) both causes and conditions
- C) just reasons
- D) only a factor contributing to the emergence
- E) only a factor preventing the occurrence
- 2. To ... reactivity refers to a stronger effect of hypoxia on adults than on newborns.
- A) age
- B) species
- C) biological
- D) sexual
- E) individual
- 3. The uniqueness of each individual is determined by ....
- A) individual reactivity
- B) polo m
- C) species reactivity
- D) constitutional features
- E) group reactivity

No. 4

**1.** Topic: Pathophysiological aspects of alcoholism, drug addiction, substance abuse.

2. Purpose: to study the general etiology and pathogenesis of life disorders in various types of alcohol and drug addiction.

- 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

- 5. Criteria for performance: see Appendix No. 1.
- 6. Deadlines: on the 4th week.
- 7. Literature: see Appendix No. 2.
- 8.Control

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#### Questions

- 1. What is etiopathogenesis of alcoholism?
- 2. What are the omatic and neurological disorders in alcoholism?
- 3. What are the types of drug addiction?
- 4. What are the disorders of life in drug addiction?
- 5. What is the etiopathogenesis of drug addiction and substance abuse ?
- 6. What is the effect of alcohol, narcotic and toxic substances on the child's body?

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#### Tests

- 1. Alcoholism is ... .
- A) a form of addiction
- C) a form of substance abuse
- C) bad habit
- D) psychosomatic illness
- E) congenital mental illness
- 2. Macrocytosis of erythrocytes and leukopenia in patients with alcoholism are caused by ... .
- A) toxic effects of ethanol on bone marrow stem cells
- B) folic acid deficiency
- C) iron deficiency

E) increased destruction of erythrocytes and leukocytes in the blood with severe alcohol intoxication

- E) thiamine deficiency
- 3. Early manifestations of opium withdrawal syndrome include ... .
- A) sweating
- B) a fever
- C) feelings of anxiety, impatience
- D) drowsiness
- E) constriction of the pupils

### No. 5

- 1. Topic: Pathophysiology of apoptosis.
- 2. Purpose: to study the causes and mechanisms of apoptosis development.
- 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.
- **4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.
- 5. Criteria for performance: see Appendix No. 1.
- 6. Deadlines: on the 5th week.
- 7. Literature: see Appendix No. 2.

### 8.Control

- Questions
- 1. What is apoptosis?
- 2. What are the stages of apoptosis?
- 3. What is autonomous apoptosis?

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4 . What is the difference between apoptosis and necrosis?

5. What are the features of apoptosis in a child's body ?

Tests

1. Necrosis is ....

A) irreversible cell damage

C) a total change in the cytoplasm of the damaged cell

C) transformation of a cell into a malignant one

E) genetically programmed cell death

E) trophic disorders of the cell

2. Wrinkling of the cell nucleus is called ....

A) pycnosis

B) karyorrhexis

C) karyolysis

D) autolysis

E) necrobiosis

3. Difference a poptosis a from necrosis - ....

A) occurs with severe damage to cell membranes

)o ensures the removal of "extra" cells under physiological conditions

C) and initiates inflammation

D) accompanied by "wrinkling" of cells

E) lysosomal enzymes play a role in the implementation of its mechanisms

No. 6

**1. Topic:** Acute phase response

2. Purpose: to study the etiopathogenesis of the acute phase response

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. Briefly and clearly present the presentation material.

5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

5. Criteria for performance: see Appendix No. 1.

6. Deadlines: on the 6th week.

7. Literature: see Appendix No. 2.

## 8.Control

## Questions

1. What are the main biological effects of the acute phase response?

2. What are acute phase proteins?

3. What are the main changes in the peripheral blood during the acute phase response?

4. What are the mediators of the acute phase response?

5. What are the characteristics of the acute phase response in children?

Tests

1. Which of the mediators most stimulates the synthesis of proteins in the liver acute phase?

A) GTP



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- B) IL-1
- C) IL-6
- D) IL-0
- E) TNFa
- 2. The primary exogenous pyrogen is
- A) Y-IFN
- C) IL 1
- C) lipopolysaccharides
- E) TNFa
- E) E) IL-0
- 3. What is the main link in the pathogenesis of fever
- A) production of endopyrogens in the body
- B) ingestion of exopyrogens
- C) change in the excitability of thermosensitive neurons
- E) permeability of the blood-brain barrier for endopyrogen

No. 7

- **1.** Topic: Disorders of mineral metabolism.
- 2. Purpose: to study the etiopathogenesis of mineral metabolism disorders.
- 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.

4. Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

- 5. Criteria for performance: see Appendix No. 1.
- **6. Deadlines:** on the 7th week.
- 7. Literature: see Appendix No. 2.

## 8.Control

## Questions

- 1. What are macronutrient metabolic disorders?
- 2. What are micronutrient metabolism disorders?
- 3. What are the age-related features of mineral metabolism disorders ?
- 4. What are the principles of prevention and correction of mineral metabolism disorders?
- 5. What are the features of mineral metabolism disorders in children ?

## Tests

- 1. Hyperkalemia is observed with ....
- A) tissue breakdown
- B) alkalosis
- C) too much aldosterone
- D) an excess of vasopressin
- E) lack of growth hormone
- 2. Hypernatremia occurs with excessive secretion of ....
- A) aldosterone
- B) sex hormones



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C) thyroid hormones

D) natriuretic hormone

E) antidiuretic hormone

3. Hypercalcemia occurs when ... .

A) hypersecretion of parathyroid hormone

B) hypersecretion of vasopressin

C) alkalosis

D) hypersecretion of aldosterone

E) hypersecretion of calcitonin

No. 8

**1. Topic:** Line control No. 1.

2. Purpose: to consolidate the material covered within 8 weeks .

3. Tasks :

1. Complete test tasks on the topics covered.

4. Form of execution / assessment:

• p confident control in the form of testing;

• for distance learning - testing in n -line mode using video surveillance on the Zoom and Webex platforms.

5. Criteria for performance: see Appendix No. 1.

**6. Deadlines:** on the 8th week.

7. Literature: see Appendix No. 2.

8. Control

Tests

1. The onset of clinical death is evidenced by ....

A) cessation of breathing and heartbeat, lack of reflexes

B) slow pulse

C) confusion

D) a sharp decrease in blood pressure

E) rare shallow breathing

2. Duration of clinical death - ....

A) 5-6 minutes

C) 1-2 minutes

C) 30-60 min

D) 1-2 hours

E) 1-2 days

3. When clinical death occurs, first of all, the functions are turned off

tion ... .

A) parenchymal organs

B) endocrine glands

C) central nervous system

D) immune system

E) reproductive system

4. Predisease is ...

A) a state intermediate between health and illness

C ) the simplest form of the pathological process

C) a typical pathological reaction of the body



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D) the first stage of the disease

E) with a combination of damage and adaptive mechanisms

5. Factors contributing to the development of atherosclerosis, - ....

A) d hypocholesterolemia

B) inhibition of atherogenesis

C) d hypolipidemia

E) d hypercholesterolemia

E) d hypoglycemia

6. The external condition contributing to the emergence of human disease is ....

A) anomalies of the constitution

B) altered heredity

C) malnutrition

D) early childhood

E) old age

7. Age plays a role in etiology ... of the disease.

A) conditions only

C) both causes and conditions

C) just reasons

D) only a factor contributing to the emergence

E) only a factor preventing the occurrence

8. To ... reactivity refers to a stronger effect of hypoxia on adults than on newborns.

A) age

B) species

C) biological

D) sexual

E) individual

9. The uniqueness of each individual is determined by ....

A) individual reactivity

B) polo m

C) species reactivity

D) constitutional features

E) group reactivity

10. Alcoholism is...

A) a form of addiction

C) a form of substance abuse

C) bad habit

D) psychosomatic illness

E) congenital mental illness

11 . Macrocytosis of erythrocytes and leukopenia in patients with alcoholism are caused by ... .

A) toxic effects of ethanol on bone marrow stem cells

B) folic acid deficiency

C) iron deficiency

E) increased destruction of erythrocytes and leukocytes in the blood with severe alcohol intoxication

E) thiamine deficiency

12. Early manifestations of opium withdrawal syndrome include ....

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A) sweating

B) a fever

C) feelings of anxiety, impatience

D) drowsiness

E) constriction of the pupils

13. Necrosis is...

A) irreversible cell damage

C) a total change in the cytoplasm of the damaged cell

C) transformation of a cell into a malignant one

E) genetically programmed cell death

E) trophic disorders of the cell

14 . Shrinkage of the cell nucleus is called ....

A) pycnosis

B) karyorrhexis

C) karyolysis

D) autolysis

E) necrobiosis

15 . The difference between a poptosis and necrosis is  $\ldots$  .

A) occurs with severe damage to cell membranes

)o ensures the removal of "extra" cells under physiological conditions

C) and initiates inflammation

D) accompanied by "wrinkling" of cells

E) lysosomal enzymes play a role in the implementation of its mechanisms

16. Which of the mediators most stimulates the synthesis of proteins in the liver acute phase?

A) GTP

B ) IL-1

C) IL-6

D ) IL-0

E) TNFa

17. The primary exogenous pyrogen is

A) Y-IFN

C)IL1

C) lipopolysaccharides

E ) TNFa

E)E)IL-0

18. What is the main link in the pathogenesis of fever

A) production of endopyrogens in the body

B) ingestion of exopyrogens

C ) change in the excitability of thermosensitive neurons

E ) permeability of the blood-brain barrier for endopyrogen

19. Hyperkalemia is observed with ... .

A) tissue breakdown

B) alkalosis

C) too much aldosterone

D) an excess of vasopressin

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E) lack of growth hormone

20. \_ Hypernatremia occurs when there is an excess secretion of ... .

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- A) aldosterone
- B) sex hormones
- C) thyroid hormones
- D) natriuretic hormone
- E) antidiuretic hormone
- 21 . Hypercalcemia occurs when ... .
- A) hypersecretion of parathyroid hormone
- B) hypersecretion of vasopressin
- C) alkalosis
- D) hypersecretion of aldosterone

### No. 9

- 1. Topic: Protein metabolism disorders. Starvation.
- 2. Purpose: to study the etiopathogenesis of protein metabolism disorders and starvation.
- 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.
- **4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.
- 5. Criteria for performance: see Appendix No. 1.
- 6. Deadlines: on the 6th week.
- 7. Literature: see Appendix No. 2.

## 8. Control

## Questions

- 1. What are the violations of the formation and breakdown of proteins?
- 2. What are the changes in the intermediate exchange of amino acids?
- 3. What are the disorders of the final stage of protein metabolism?
- 4. What are the types of fasting?
- 5. How are periods of fasting distinguished ?
- 6. What are the features of protein metabolism disorders in children?

## Tests

- 1. A positive nitrogen balance in the body develops when ... .
- A) with diabetes
- ) and an excess of glucocorticoids
- C) b spruce starvation
- E) about tumor cachexia
- E) and an excess of insulin
- 2. Negative nitrogen balance in the body occurs ... .
- A) burn disease
- B) with hyperinsulinism
- C) during growth
- D) during pregnancy



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E) with an excess of anabolic hormones

3. Hypoproteinemia is ... .

A) a decrease in the total amount of protein, mainly due to albumin

) an increase in the content of proteins in the blood

C) the appearance of unusual (pathological proteins) in the blood

D) and a change in the ratio of blood proteins

E) decrease in the content of gamma globulins in the blood

No. 10

1. Topic: Violations of the acid-base state.

2. Purpose: to study the etiopathogenesis of acid-base disorders .

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. Briefly and clearly present the presentation material.

5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

5. Criteria for performance: see Appendix No. 1.

6. Deadlines: on the 10th week.

7. Literature: see Appendix No. 2.

8. Control

Questions

1. What is the etiopathogenesis of acidosis ?

2. What is the etiopathogenesis of alkalosis ?

3. What are the principles of acidosis and alkalosis correction ?

4. What is the etiopathogenesis of non-gas alkalosis?

5. What is hypercapnia?

6. What are the features of acid-base disorders in children?

Tests

1. Gas acidosis is based on ... .

A) and an excess of non-volatile acids

C) o etching with mineral acid

C) accumulation of carbon dioxide in the body

D) have a strong release of CO  $_2$  from the body

E) and an excess of bases in the blood

2. The cause of non-gas acidosis is ... .

A) hypersecretion of adrenal steroid hormones

B) sodium bicarbonate poisoning

C) prolonged vomiting

D) shortness of breath with encephalitis

E) profuse diarrhea

3. The development of gas alkalosis leads to ... .

A) d hypoventilation of the lungs

) d hyperventilation of the lungs

C) circulatory failure

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E) d hypercapnia

E) an increase in the content of carbon dioxide in the atmosphere

No. 11

- **1. Topic:** Hypo- and hypervitaminosis.
- 2. Purpose: to study the causes and mechanisms of development of hypo- and hypervitaminosis.
- 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

- 5. Criteria for performance : see Appendix No. 1.
- 6. Deadlines: on the 11th week.
- 7. Literature: see Appendix No. 2.

### 8.Control

#### Questions

- 1. What is the characteristic of the exogenous form of hypovitaminosis?
- 2. What is the characteristic of the endogenous form of hypovitaminosis?
- 3. What is the etiopathogenesis of the main symptoms of various types of hypovitaminosis ?
- 4. What is the pathogenesis of clinical manifestations of hypervitaminosis?
- 5. What are the features of vitamin metabolism disorders in children?

### Tests

- 1. Vitamin A deficiency leads to the development of ....
- A) hemerolopia
- B) calcification
- C) xerophthalmia
- D) osteomalacia
- E) hemorrhagic diathesis
- 2. The manifestations of hypovitaminosis B<sub>1</sub> include ... .
- A) calcification
- B) polyneuritis
- C) osteomalacia
- D) xerophthalmia
- E) hemorrhagic diathesis
- 3. Vitamin B12 deficiency is characterized by the development of ... .
- A) aplastic anemia
- B) normoblastic anemia
- C) iron deficiency anemia
- D) megaloblastic anemia
- E) microspherocytic anemia

### No. 12

**1. Topic:** Pathophysiology of the infectious process. Sepsis.

**2. Purpose:** to study the causes and mechanisms of the development of the infectious process, the general etiology and pathogenesis of life disorders under the action of infectious agents.

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#### 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. Briefly and clearly present the presentation material.
- 5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

- 5. Criteria for performance: see Appendix No. 1.
- 6. Deadlines: on the 12th week.
- 7. Literature: see Appendix No. 2.

### 8.Control

### Questions

- 1. What is the etiopathogenesis of the infectious process?
- 2. What is the role of micro- and macroorganism in the development of the infectious process?
- 3. What are the pathophysiological principles for the prevention and treatment of an infectious process ?
- 4. What are the types of sepsis?
- 5. What are the features of the infectious process in children?

#### Tests

- 1. The latent period of infectious diseases is called ....
- A) prodrome
- B) latency period
- C) predisease
- D) incubation period
- E) peak period
- 2. The external causes of the disease include ....
- A) gender
- B) pathological heredity
- C) age
- D) infectious agents
- E) pathological constitution
- 3. To etiotropic treatment ... refer.
- A) antibiotic therapy
- B) physical therapy
- C) isolation of the patient
- D) a healthy lifestyle
- E) hardening

No. 13

- 1. Topic: Hyperthermia and hyperthermic reactions
- 2. Purpose: to study the causes and mechanisms of development of hyperthermia

### 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. Briefly and clearly present the presentation material.



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АКАДЕМІАSY «Оңтүстік Қазақстан медицина академиясы» АҚ

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5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

5. Criteria for performance: see Appendix No. 1.

**6. Deadlines:** on the 13th week.

7. Literature: see Appendix No. 2.

#### 8.Control

#### Questions

- 1. What is the etiopathogenesis of hyperthermia
- 2. Stages of development of hyperthermia.
- 3. The main differences between fever and hyperthermia
- 4. What is the pathogenesis of clinical manifestations of hyperthermia?
- 5. What are the features of the development of hyperthermia in children?

#### Tests

1. The cause of exogenous hyperthermia can be:

A ) increased influx of heat from the environment

) vasospasm of the skin

C) inhibition of sweating

D) intense muscle work

E) uncoupling of the processes of oxidation and phosphorylation

in the tissues 2. When the processes of oxidation and phosphorylation are uncoupled in the tissues, the following develope: A) endegenous hyperthermic P) evegenous hyperthermic

the following develops: A) endogenous hyperthermia B) exogenous hyperthermia

C) fever

D) Hypothermia

E) Allergy

3. List the cells that form endogenous pyrogens:

A) neurons of the hypothalamic thermoregulation center B) neutrophilic leukocytes C)

erythrocytes D) lymphocytes E) monocytes

No. 14

1. Topic: Immunodeficiency states. AIDS.

**2. Purpose:** to study the causes and mechanisms of development of disorders arising from acquired and hereditary insufficiency of the immune system, as well as the etiopathogenesis of AIDS.

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. Briefly and clearly present the presentation material.

5. Be prepared to answer questions about the presentation.

**4.** Form of implementation / evaluation : Preparation of an abstract with a check for plagiarism, preparation and defense of the presentation.

5. Criteria for performance: see Appendix No. 1.

**6. Deadlines:** on the 14th week.

7. Literature: see Appendix No. 2.

8.Control

Questions



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1. What typical forms of impaired immunogenic reactivity of the body exist?

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- 2. How do immunodeficiency states develop?
- 3. What is the etiopathogenesis of AIDS?
- 4. What are autoimmune diseases?
- 5. What are the features of the development of immunodeficiency states in childhood?

### Tests

- 1. Secondary immunodeficiencies can occur with ....
- A) major burns
- B) X-ray exposure
- C) uremia
- D) gas embolism
- E) renal arterial hypertension
- 2. Allocate ... a mechanism for the development of immune tolerance.
- A) insulating
- B) macrophage
- C) helper
- D) hyperimmune
- E) clonal
- 3. Immunodeficiencies may be based on the insufficiency of the following factors or processes ....
- A) antibodies
- C) phagocytosis with the participation of granulocytes
- C) complement systems
- D) lysozyme
- E) transferrin
- No. 15
- **1. Topic:** Line control No. 2
- 2. Purpose: to consolidate the material covered within 15 weeks.
- 3. Tasks :
- 1. Complete test tasks on the topics covered.
- 4. Form of execution / assessment:
- p confident control in the form of testing;
- for distance learning testing in n -line mode using video surveillance on the Zoom and Webex platforms.
- 5. Criteria for performance: see Appendix No. 1.
- 6. Deadlines: on the 15th week.
- 7. Literature: see Appendix No. 2.
- 8. Control
- Tests
- 1. A positive nitrogen balance in the body develops when ....
- A) with diabetes
- ) and an excess of glucocorticoids
- C) b spruce starvation
- E) about tumor cachexia
- E) and an excess of insulin
- 2. Negative nitrogen balance in the body occurs ....
- A) burn disease



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B) with hyperinsulinism

C) during growth

D) during pregnancy

E) with an excess of anabolic hormones

3. Hypoproteinemia is ....

A) a decrease in the total amount of protein, mainly due to albumin

) an increase in the content of proteins in the blood

C) the appearance of unusual (pathological proteins) in the blood

D) and a change in the ratio of blood proteins

E) decrease in the content of gamma globulins in the blood

4. Gas acidosis is based on ....

A) and an excess of non-volatile acids

C) o etching with mineral acid

C) accumulation of carbon dioxide in the body

D) have a strong release of CO  $_2$  from the body

E) and an excess of bases in the blood

5. The cause of non-gas acidosis is ....

A) hypersecretion of adrenal steroid hormones

B) sodium bicarbonate poisoning

C) prolonged vomiting

D) shortness of breath with encephalitis

E) profuse diarrhea

6. Leads to the development of gas alkalosis ....

A) d hypoventilation of the lungs

) d hyperventilation of the lungs

C) circulatory failure

E) d hypercapnia

E) an increase in the content of carbon dioxide in the atmosphere

7. Vitamin A deficiency leads to the development of ....

A) hemerolopia

B) calcification

C) xerophthalmia

D) osteomalacia

E) hemorrhagic diathesis

8. The manifestations of hypovitaminosis B<sub>1</sub> include ....

A) calcification

B) polyneuritis

C) osteomalacia

D) xerophthalmia

E) hemorrhagic diathesis

9. Vitamin B12 deficiency is characterized by the development of ....

A) aplastic anemia

B) normoblastic anemia

C) iron deficiency anemia

D) megaloblastic anemia

E) microspherocytic anemia

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10. The latent period of infectious diseases is called ....

A) prodrome

B) latency period

C) predisease

D) incubation period

E) peak period

11. The external causes of the disease include ... .

A) gender

B) pathological heredity

C) age

D) infectious agents

E) pathological constitution

12. To etiotropic treatment ... refer.

A ) antibiotic therapy

B) physical therapy

C) isolation of the patient

D) a healthy lifestyle

E) hardening

13. The cause of exogenous hyperthermia can be:

A ) increased influx of heat from the environment

) vasospasm of the skin

C) inhibition of sweating

D) intense muscle work

E) uncoupling in the tissues of the processes of oxidation and phosphorylation

14. When the processes of oxidation and phosphorylation are uncoupled in the tissues, the following develops:

A) endogenous hyperthermia B) exogenous hyperthermia C) fever D) Hypothermia

E) Allergy

15. List the cells that form endogenous pyrogens:

A) neurons of the hypothalamic thermoregulation center B) neutrophilic leukocytes C) erythrocytes D) lymphocytes E) monocytes

16. Secondary immunodeficiencies can occur with ....

A) major burns

B) X-ray exposure

C) uremia

D) gas embolism

E) renal arterial hypertension

17. Allocate ... a mechanism for the development of immune tolerance.

A) insulating

B) macrophage

C) helper

D) hyperimmune

E) clonal

18 . Immunodeficiencies may be based on the deficiency of the following factors or processes ... .

A) antibodies

C) phagocytosis with the participation of granulocytes

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C) complement systems D) lysozyme E) transferrin

			Appendix No.1
Form of control	Mark	Criteria for marks	

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Evaluation of preparation and performing of presentation	Excellent corresponds to points 95-100 90-94	The student prepared a presentation on the topic at the appointed time, independently, accurately, with a volume of at least 20 laconic and substantial slides, using at least 5 literary sources and the presence of a detailed plan, cited the schemes, tables and figures corresponding to subject, with the defense demonstrated a profound knowledge of the topic and answered all questions positively on all the questions asked.
	Good corresponds to points 85-89 80-84 75-79	The student prepared a presentation on the topic at the appointed time, independently, accurately, with a volume of at least 20 laconic and substantial slides, using at least 5 literary sources and the presence of a detailed plan, cited the schemes, tables and figures, corresponding to the subject, in defense demonstrated good knowledge of the subject, when answering question he committed non-fundamental errors.
	Satisfactorily corresponds to points 70-74 65-69 60-64 50-54	The student prepared a presentation on the topic at the appointed time, independently, but inaccurately, a volume of at least 20 unsupported slides, using less than 5 literary sources and the presence of an undeveloped plan, resulted in a lack of schemes, templates and drawings corresponding to subject, defending uncertainly answered questions, made fundamental mistakes.
	Unsatisfactory corresponds to points 0-49	The student did not prepare a presentation on the topic at the appointed time, or prepared it at the appointed time, but independently, inaccurately, with a volume of less than 20 non-editorial slides, without mentioning literary sources, in the absence of a plan, when answering a question, dew made gross mistakes or could not answer questions and did not defend the abstract.

Form of control	Mark	Criteria for marks
Evaluation of	Excellent	The student prepared an abstract on the topic
preparation of the	corresponds to points	at a scheduled time, independently, neatly, with a volume of at least 10 pages of the A4
uostruot	95-100	format computer kit with a single interlacing

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90-94	interval and a font size of 14, using at least 5 liter sources and the availability of a detailed plan, he brought diagrams, tables and figures corresponding to the subject, while reading the abstract, he did not read the text, but told, confidently and unerringly answered all the questions posed.
Good corresponds to points 85-89 80-84 75-79	The student prepared an abstract on the topic at a scheduled time, independently, neatly, with a volume of at least 10 pages of the A4 format computer kit with a single interlacing interval and a font size of 14, using at least 5 liter sources and the availability of a detailed plan, he brought the diagrams, tables and figures corresponding to the subject, did not read the text while defending the essay, but told me that in answering questions he made unprincipled errors.
Satisfactorily corresponds to points 70-74 65-69 60-64 50-54	The student prepared an abstract on the topic at the appointed time, independently, but inaccurately, with a minimum of 10 pages of computer-aided A4 format with a single inter- dural interval and a font size of 14, using less than 5 literary sources and the availability neravvernutogo plan, with the protection of the abstract the text read, answered questions in an inordinate manner, made fundamental mistakes.
Unsatisfactory corresponds to points 0-49	The student did not prepare an essay on the topic at the appointed time, or prepared it at the appointed time, but it is not dependent, inaccurately, with a volume of less than 10 pages of a computer set of A4 format with a different line spacing and font size, without indicating the sources of literature , in the absence of a plan, when reading the abstract, the text read, when answering questions, made gross mistakes or could not answer questions and did not defend the abstract.

# **Midterm examination** – MCQ, maximum mark is 100.

Form of control	Mark	Criteria for marks
Evaluation of MCQ	Excellent	The student did correctly 90-100% of the

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results	corresponds to points	MCQ.
	95-100	
	90-94	
	Good	The student did correctly 70-89% of the
	corresponds to points	MCQ.
	85-89	
	80-84	
	75-79	

#### Appendix No.2

#### Literature main and additional In Russian main:

1. Адо А.Д. Патофизиология: учебник: в 2-х т. – Эверо, 2015. – Т. 1.

2. Адо А.Д. Патофизиология: учебник: в 2-х т. – Эверо, 2015. – Т. 2.

3. Патофизиология. Руководство к практическим занятиям: учебное пособие. – М.: ГЭОТАР-Медиа, 2014.

4. Фролов В.А. и др. Общая патологическая физиология: учебник. – М., 2013. additional:

1. Патофизиология. Руководство к практическим занятиям: учебное пособие /Под ред. В.В. Новицкого, О.И. Уразовой. – М.: ГЭОТАР-Медиа, 2011.

2. Патофизиология: учебник: в 2-х т. /Под ред. В.В. Новицкого, Е.Д. Гольдберга, О.В. Уразовой. – 4е изд., перераб. и доп. – М.: ГЭОТАР-Медиа, 2010. – Т. 1.

3. Патофизиология: учебник: в 2-х т. /Под ред. В.В. Новицкого, Е.Д. Гольдберга, О.В. Уразовой. – 4е изд., перераб. и доп. – М.: ГЭОТАР-Медиа, 2010. – Т. 2.

4. Литвицкий П.Ф. Патофизиология: учебник. – 4-е изд., испр. и доп. – М.: ГЭОТАР-Медиа, 2010.

5. Актуальные вопросы патофизиологии и медицины: материалы Междунар. науч.-практич. конф. (2-4 дек., 2008). – Алматы, 2008.

### e-resources:

1. Патофизиология [Электронный ресурс]: учебник: в 2-х т. /Под ред. В.В. Новицкого, Е.Д. Гольдберга, О.В. Уразовой. – 4-е изд., перераб. и доп. – Электрон. текстовые дан. (59,9 Мб). – М.: ГЭОТАР-Медиа, 2010. – Т. 1, Т. 2. – Эл. опт. диск (CD-ROM). 2. <u>www.ukma.kz</u>

# In Kazakh

### main:

1. Нұрмұхамбетұлы Ә. Патофизиология-1. Клиникалық практикада өте маңызды біртектес дерттік үрдістердің патогенезі мен емдеу жолдарына нұсқама. 1 том: оқу құралы. – Алматы: Эверо, 2016. 2. Нұрмұхамбетұлы Ә. Патофизиология-1. Клиникалық практикада өте маңызды біртектес дерттік үрдістердің патогенезі мен емдеу жолдарына нұсқама. 2 том: оқу құралы. – Алматы: Эверо, 2016.

3. Нұрмұхамбетұлы Ә. Патофизиология: оқулық. – 4 бас. – Эверо, 2015. – Т. 1.

4. Нұрмұхамбетұлы Ә. Патофизиология: оқулық. – 4 бас. – Эверо, 2015. – Т. 2.

 

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5. Нұрмұхамбетұлы Ә. Патофизиология: окулық. – 4 бас. – Эверо, 2015. – Т. 3.

6. Нұрмұхамбетұлы Ә. Патофизиология: окулық. – 4 бас. – Эверо, 2015. – Т. 4.

7. Адо А.Д. Патофизиология: окулык. 1 том. – Эверо, 2015.

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8. Адо А.Д. Патофизиология: окулык. 2 том. – Эверо, 2015.

9. Патологиялық физиология. Тәжірибелік сабақтарға нұсқау: оқу құралы. – М.: ГЭОТАР-Медиа, 2014.

10. Уразалина Н.М. Тест тапсырмалары. І-бөлім. Біріктес дерттік үрдістер. –Алматы: Эверо, 2014.

11. Уразалина Н.М. Тест тапсырмалары. ІІ-бөлім. Біріктес дерттік үрдістер. –Алматы: Эверо, 2014.

12. Уразалина Н.М. Тест тапсырмалары. Ш-бөлім. Біріктес дерттік үрдістер. –Алматы: Эверо, 2014.

13. Уразалина Н.М. Тест тапсырмалары. IV-бөлім. Біріктес дерттік үрдістер. –Алматы: Эверо, 2014.

14. Жәутікова С.Б. Мамандырылған патологиялық физиология курсы: оқу-әдістемелік құралы. – Қарағанды: ЖК «Ақ Нұр», 2013.

15. Жәутікова С.Б. Патологиялық физиология пәні бойынша ситуациялық есептер жинағы: окуәдістемелік құралы. – Қарағанды: ЖК «Ақ Нұр», 2013.

#### additional:

1. Патофизиология мен медицинаның өзекті мәселелері: ғыл.-практикалық халықаралық конф. материалдары (2-4 желтоқсан, 2008). – Алматы, 2008.

#### e-resources:

1. Патологиялық физиология: Патофизиология: тәжірибелік сабақтарға нұсқау: оқу құралы/ В.В. Новицкийдің ред. – М.: ГЭОТАР-Медиа, 2014.

2. <u>www.ukma.kz</u>

### In English

main:

1. Pathophysiology. Volume 1: the book for medical institutes /A.D. Ado and others. – Almaty: «Evero», 2017.

2. Pathophysiology. Volume 2: the book for medical institutes /A.D. Ado and others. – Almaty: «Evero», 2017.

3. Pathophysiology. Volume 3: the book for medical institutes /A.D. Ado and others. – Almaty: «Evero», 2017.

4. Zhautikova. S.B. Review of Pathophysiology: educational-methodical manual /S.B. Zhautikova. U. Faroog. – Karaganda: AKNUR, 2017.

5. Zhautikova. S.B. Collection of situational problems for discipline of Pathological Physiology-2: educational-methodical manual /S.B. Zhautikova. U. Faroog. – Karaganda: AKNUR, 2017.

6. Essentials of Pathophysiology: Concepts of Altered Health States /Porth C.M.; Lippincott Williams & Wilkins /Wolters Kluwer, 2014.

7. Pathophysiology: Concepts of Altered Health States /Porth C.M., Matfin G.; Lippincott Williams & Wilkins /Wolters Kluwer, 2013.

### additional:

1.Pathophysiology /Copstead L.C., Banasik J.L.; Saunders /Elseviere, 2012.

#### e-resources: 1. www.ukma.kz

E-sources

N⁰	Title	Link

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1.	«BooksMed»	http://www.booksmed.com
2.	«Web of science» (Thomson Reuters)	http://apps.webofknowledge.com
3.	«Science Direct» (Elsevier)	https://www.sciencedirect.com
4.	«Scopus» (Elsevier)	www.scopus.com
5.	PubMed	https://www.ncbi.nlm.nih.gov/pubmed

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