



LECTURE COMPLEX

Discipline: "The digestive and endocrine systems are normal"

Discipline code: NDES 2208

EP name: 6B10115 "Medicine"

Amount of study hours/credits: 120 hours/4 credits

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

Lecture time: 4 hours

Shymkent, 2025



The lecture complex was developed in accordance with the syllabus of the discipline "Digestive and endocrine systems are normal" and discussed at the meeting of the department

Protocol № 11 from 10.10 2025

Head of the department, Professor

Tanabay B.D.

Lecture № 1

1. Topic: Morphofunctional characteristics of the organs of the oral cavity, pharynx.

2. Purpose: To study the features of the structure and functioning of the organs of the oral cavity, pharynx.

3. Lecture theses:

The digestive system of systema digestorium is a complex of organs whose function is the mechanical and chemical processing of ingested food substances, the absorption of processed and excretion of the remaining undigested components of food. The human digestive canal is about 8-10 m long and is divided into the following sections: oral cavity, pharynx, esophagus, stomach, small and large intestine.

The pharynx of the pharynx represents that part of the digestive tube and respiratory tract, which is the connecting link between the nasal cavity and mouth, on the one hand, and the esophagus and larynx, on the other. It stretches from the base of the skull to the VI-VII cervical vertebrae. The internal space of the pharynx is the pharyngeal cavity, cavitas pharyngis. The pharynx is located behind the nasal and oral cavities and the larynx, in front of the basilar part of the occipital bone and the upper cervical vertebrae. According to the organs located anteriorly from the pharynx, it can be divided into three parts: pars nasalis, pars oralis and pars laryngea. The upper wall of the pharynx, adjacent to the base of the skull, is called the arch, fornix pharyngis.

4. Illustrative material: tables, slides, dummies, tablets.

5. Literature:

Specified in Appendix №1

6. Control questions (feedback):

1. Define the digestive system
2. The length of the digestive canal
3. Name the departments of the digestive canal
4. Describe the structure of the organs of the oral cavity.
5. Glands of the oral cavity
6. Describe the structure of the pharynx.

Lecture № 2

1. The theme: Anatomy of the esophagus, stomach, small and large intestine.

2. Purpose: To study the features of the structure and functioning of the internal organs of the digestive system. To study the structural features of the stomach, small and large intestine.

3. Lecture theses:

The ventriculus (gaster) stomach is a sac-like expansion of the digestive tract. Food accumulates in the stomach after passing through the esophagus and the first stages of digestion occur, when the solid components of the food turn into a liquid or mush-shaped mixture. In the stomach, the anterior wall, paries anterior, and posterior paries posterior are distinguished. The concave edge of the stomach, facing up and to the right, is called a small curvature, curvature ventriculi minor, the convex edge, facing down and to the left, is called a large curvature, curvature ventriculi major. On the small curvature, closer to the exit end of the stomach than to the entrance, there is a noticeable tenderloin, incisura angularis, where two sections of small curvature converge at an acute angle, angulus ventriculi.

The intestinum tenue is a small intestine that begins at the pylorus and, forming a series of looping bends along its path, ends at the beginning of the colon. The length of the small

intestine in male corpses is about 7 m, in women – 6.5 m, and it exceeds the body length by about 4.1 times. Due to postmortem muscle relaxation, it is always longer on corpses than in the living.

Intestinum crassum the large intestine, extending from the end of the small intestine to the anus, is divided into the following parts: 1) caecum – caecum with appendix vermiformis; 2) colon ascendens – ascending colon; 3) colon transversum - transverse colon; 4) colon descendens – descending colon; 5) colon sigmoideum - sigmoid colon; 6) rectum – rectum and 7) canalis analis – the anal canal.

4. Illustrative material: tables, slides, dummies, tablets.

5. Literature:

Specified in Appendix №1

6. Control questions (feedback):

1.The length of the digestive canal

2. Name the departments of the digestive canal

3. Describe the structure and topography of the stomach

4.Describe the structure and topography of the large and small intestines

Lecture №3

1. Topic: Structural features of the liver, pancreas. The peritoneum and its derivatives.

2. Purpose: To study the structural features of the liver, pancreas, peritoneum and its derivatives.

3. Lecture theses:

Viscera splanchna are organs located mainly in the body cavities (thoracic, abdominal and pelvic). These include the digestive, respiratory, and genitourinary systems. The insides are involved in metabolism; the exception is the genitals, which carry the function of reproduction. The hepatic liver is a bulky glandular organ (weighing about 1500 g). Liver functions are diverse. It is primarily a large digestive gland that produces bile, which enters the duodenum through the excretory duct. It has a barrier function: toxic products of protein metabolism delivered to the liver with blood are neutralized in the liver; in addition, the endothelium of hepatic capillaries and stellate reticuloendotheliocytes have phagocytic properties (lymphoreticulocytic system) what is important for the neutralization of substances absorbed in the intestine.

There are two lobes in the liver: the right lobus hepatic dexter and the smaller left lobus hepatic sinister, which are separated from each other on the diaphragmatic surface by the sickle-shaped ligament of the liver lig.falciforme hepatis. There is a dense fibrous cord in the free edge of this ligament – the circular ligament of the liver, lig.teres hepatis, which stretches from the navel, umbilicus and represents an overgrown umbilical vein, v.umbilicalis. There are two lobes in the liver: the right lobus hepatic dexter and the smaller left lobus hepatic sinister, which are separated from each other on the diaphragmatic surface by the sickle-shaped ligament of the liver lig.falciforme hepatis. There is a dense fibrous cord in the free edge of this ligament – the circular ligament of the liver, lig.teres hepatis, which stretches from the navel, umbilicus and represents an overgrown umbilical vein, v.umbilicalis. The circular ligament bends over the lower edge of the liver, forming a tenderloin, incisura ligamenti teretis and lies on the visceral surface of the liver in the left longitudinal groove, which on this surface is the boundary between the right and left lobes of the liver.

The pancreas. The pancreas lies behind the stomach on the posterior abdominal wall in the region epigastrica, extending its left side into the left hypochondrium. It lies behind the inferior vena cava, the left renal vein and the aorta. The pancreas is divided into a caput pancreatis head, with a hook-shaped processus uncinatus processus pancreatis body and cauda

pancreatitis tail. The head of the gland is covered by the duodenum and is located at the level of the I and upper part of the II lumbar vertebrae.

The peritoneum is a closed serous sac, which only in women communicates with the outside world through a very small abdominal opening of the fallopian tubes. Like any serous sac, the peritoneum consists of two leaflets: the parietal, parietal, peritoneum parietale and the visceral, peritoneum viscerale. The first one lines the abdominal walls, the second one covers the insides, forming their serous covering for a greater or lesser extent. Both leaves are in close contact with each other, and when the abdominal cavity is not open, there is only a narrow gap between them, called the peritoneal cavity *cavitas peritonei*, which contains a small amount of serous fluid that moisturizes the surface of the organs and thus facilitates their movement around each other. When air enters during an operation, or an autopsy, or with an accumulation of pathological bones, both leaves diverge and then the peritoneal cavity takes on the appearance of a real, more or less voluminous cavity.

4. Illustrative material: tables, slides, dummies, tablets.

5. Literature:

Specified in Appendix №1

6. Control questions (feedback):

1. Define the internals?
2. Give a description of the liver?
3. Describe the pancreas?
4. Describe the peritoneum and its derivatives?

Lecture № 4

1. Topic: Morphofunctional characteristics of organs of the endocrine system, their role in regulating the activity of organs and systems of the body.

2. Purpose: To study the features of the structure and functioning of the endocrine system.

3. Lecture theses:

Endocrine glands or endocrine glands are those glands that do not have an excretory duct and secrete their secret directly into the circulatory system, as opposed to the glands of external secretion, the secret or excretion of which pours onto the surface of the skin (sweat, sebaceous glands) or mucous membranes (salivary glands, liver, etc.).

The development of endocrine glands can be divided into 5 groups.

1. Endodermal glands are a branchiogenic group. (thyroid, parathyroid and thymus glands) .
2. Endodermal glands of the intestinal tube (islets of the pancreas).
3. Mesodermal glands – (the cortical substance of the adrenal gland – the interrenal system and sex glands).
4. Ectodermal glands originating from the intermediate brain are a neurogenic group (epiphysis and pituitary gland).
5. Ectodermal glands, originating from sympathetic elements, are a group of the adrenal system (adrenal medulla and chromaffin bodies).

4. Illustrative material: tables, slides, dummies, tablets.

5. Literature:

Specified in Appendix №1

6. Control questions (feedback):

1. Define the endocrine glands
2. Classification of endocrine organs

ОҢТҮСТІК ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия»
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APPENDIX №1

Electronic resources:

1. SKMA Electronic Library – <https://e-lib.skma.edu.kz/genres>
2. Republican Interuniversity Electronic Library (RIEL) – <http://rmebrk.kz/>
3. Digital Library “Aknurpress” – <https://www.aknurpress.kz/>
4. Electronic Library “Epigraph” – <http://www.elib.kz/>
5. Epigraph – Multimedia Textbook Portal – <https://mbook.kz/ru/index/>
6. Electronic Library System IPR SMART – <https://www.iprbookshop.ru/auth>
7. Information and Legal System “Zan” – <https://zan.kz/ru>
8. Medline Ultimate EBSCO - <https://research.ebsco.com/>
9. eBook Medical Collection EBSCO - <https://research.ebsco.com/>
10. Scopus - <https://www.scopus.com/>

Electronic textbooks:

1. Curtis, J. Anatomy & Physiology : A simplified guide to the structures and systems of the human body. / Jason Curtis.: Strength and Conditioning Course, 2020. <https://rmebrk.kz/book/1178693>
2. Frank H. Netter Netter Atlas of Human Anatomy. Classic Regional Approach. - Eight edition - PA: Elsevier, 2023 <https://rmebrk.kz/book/1186042>
3. Анатомия человека = Human Anatomy : учебное пособие / Е. С. Околокулак, Ф. Г. Гаджиева, С. А. Сидорович, Д. А. Волчкевич. — Минск : Вышэйшая школа, 2021. — 416 с. — ISBN 978-985-06-3304-0. — Текст : электронный // Цифровой образовательный ресурс IPR SMART : [сайт]. — URL: <https://www.iprbookshop.ru/119959.html> (дата обращения: 13.01.2025). — Режим доступа: для авторизир. пользователей
4. Klein, Robert M., Enders, George C. Anatomy, Histology, and Cell Biology : PreTest . . - Third Edition - Kansas City: Medical, 2007. – 638 <https://rmebrk.kz/book/1169836>
5. Kahle, W. et al. Color Atlas and Textbook of Human Anatomy : In 3 Volumes. Vol. 1: Locomotor System / W. Kahle, H. Leonhardt, W. Platzer. - 4th edition - Нью-Йорк, 1992. - 435 <https://rmebrk.kz/book/1007683>
6. Kahle, W. et al. Color Atlas and Textbook of Human Anatomy : In 3 Volumes. Vol. 2: Internal Organs / W. Kahle, H. Leonhardt, W. Platzer. - 4th edition - Нью-Йорк, 1992. – 372 <https://rmebrk.kz/book/1007684>
7. Kahle, W. et al. Color Atlas and Textbook of Human Anatomy : In 3 Volumes. Vol. 3: Nervous System and Sensory Organs / W. Kahle, H. Leonhardt, W. Platzer. - 4th edition - Нью-Йорк, 1992. – 376 <https://rmebrk.kz/book/1007685>
8. Susan Standring Gray - 42nd Edition - UK: Elsevier, 2020. – 2941 <https://rmebrk.kz/book/1186064>
9. Frank H. Netter Netter Atlas of Human Anatomy. Classic Regional Approach. - Eight edition - PA: Elsevier, 2023. – 1148 <https://rmebrk.kz/book/1186042>
10. Jonh T. Hansen Netter - 4th edition - PA: Elsevier, 2019. – 630 <https://rmebrk.kz/book/1186043>
11. Anatomy & Physiology : A simplified guide to the structures and systems of the human body. / Jason Curtis.: Strength and Conditioning Course, 2020. – 181 <https://rmebrk.kz/book/1178693>
12. Seyed Ali Khonsary Book Review: Atlas of Anatomy - Head, Neck, and Neuroanatomy. - Surgical neurology international 4/28/2020. - 85 с.// eBook Medical Collection EBSCO

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13. Анатомия человека = Human Anatomy : учебное пособие / Е. С. Околокулак, Ф. Г. Гаджиева, С. А. Сидорович, Д. А. Волчкевич. — Минск : Вышэйшая школа, 2021. — 416 с. -: <https://www.iprbookshop.ru/119959.html>
14. K. Sembulingam, Prema Sembulingam Essentials of Medical Physiology. - Sixth Edition - India: Jaypee Brothers Medical Publishers, 2012. – 1097 <https://rmebrk.kz/book/1186092>
15. Бородулина, О.В. Цитология и гистология – Cytology and histology : Практикум. / Костанайский гос. педагогический университет им. У. Султангазина. - Костанай: КГПУ им.У.Султангазина, 2020. - 100 с. <https://rmebrk.kz/book/1173375>
16. Leslie P. Gartner Textbook of Histology. - Fourth edition - Philadelphia, PA: Elsevier, 2017. - 732<https://rmebrk.kz/book/1186044>
17. Зиматкин, С. М. Гистология, цитология и эмбриология. Атлас учебных препаратов = Histology, Cytology, Embryology. Atlas of practice preparations : учебное пособие / С. М. Зиматкин. — 2-е изд. — Минск : Вышэйшая школа, 2020. — 88 с. — ISBN 978-985-06-3202-9. — Текст : электронный // Цифровой образовательный ресурс IPR SMART : [сайт]. — URL: <https://www.iprbookshop.ru/120132.html> (дата обращения: 13.01.2025). — Режим доступа: для авторизир. Пользователей
18. Neelam Vasudeva, Sabita Mishra, Textbook of Human Histology: With Color Atlas and Practical Guide. - Eighth Edition - India: Jaypee Brothers Medical Publishers, 2016. — 353 <https://rmebrk.kz/book/1186062>

Basics

1. Chaurasia's, B. D. Human Anatomy [Text] : textbook in 4 vol. Vol. 2. Lower limb, Abdomen and pelvis / B. D. Chaurasia's. - 7th ed. - New Delhi : CBS Publishers & Distributors Pvt Ltd, 2016. - 498 p. Перевод заглавия: Анатомия человека
2. Chaurasia's, B. D. Human Anatomy [Text] : textbook in 4 vol. Vol. 2. Lower limb, Abdomen and pelvis / B. D. Chaurasia's. - 6 th ed. - New Delhi : CBS Publishers & Distributors Pvt Ltd, 2013. - 463 p.Перевод заглавия: Анатомия человека
3. Prives, M. Human Anatomy. Volume I [Текст] : учебник / М. Prives, N. Lusenkov, V. Bushkovich. - Moscow : Mir Publishers, 1989. - 608 p
1. Prives, M. Human Anatomy. Volume II [Текст] : учебник / М. Prives, N. Lusenkov, V. Bushkovich. - Moscow : Mir Publishers, 1989. - 440 p
2. Netter F. H. Atlas of Human Anatomy. Saunders / Elsevier, 2014
3. Drake R. L., Vogl A. W., Mitchell A. W. M. Gray's Anatomy for Students Churchill Livingstone, Elsevier, 2014
4. Morales R., Diego M. D., Sabahi M., Obrzut M., Najera E., Monterroso C.D., Bsat S., Adada B., Borghei R.H. A primer to vascular anatomy of the brain: an overview on anterior compartment, Springer-Verlag Italia, 2024. // Scopus
5. Prasad S., Galetta S.L. Anatomy and physiology of the afferent visual system, Harvard Medical School, Boston, MA. - United States, 2011. // Scopus

Additional

1. Netter, Frank H. Atlas of human anatomy. textbook/Frank H. Netter. Philadelphia. Elsevier. 2014. 531 p.
2. Clinical Atlas of Human Anatomy : textbook / Peter H. Abrahams [et.al.]. - 8th ed. - Edinburgh : Elsevier, 2019. - 393 p.Перевод заглавия: Клинический атлас анатомии человека
3. Sperelakis, Nikolas. Essentials of Physiology [Текст] = Основы физиологии: монография / Nikolas Sperelakis. - Boston : New York : Toronto, London, 1996. - 722 с



4. Netter F. H. Atlas of Human Anatomy. Saunders / Elsevier, 2014

5. Usmle Step 1. Anatomy [Text] : lecturer notes / J. White [et. al.]. - New York : [s. n.], 2019.

- 386 p. - (Kaplan Medical). - ISBN 978-1-5062-3646-9 : б/ц Перевод заглавия: Шаг 1.

Анатомия