Schedule for Anatomy III Academic Year 2023/24, Third Semester

WEEK	LECTURES	DISSECTION PRACTICE III	HISTOLOGY PRACTICE II
1 st Sep 11-15	Anatomy and blood supply of the spinal cord. Fine structure of the grey matter and white matter. Rexed's laminae and corresponding nuclei. Arrangement of the spinal cord tracts. Reflex arcs of the spinal cord.	<i>Injury preventive rules and dissecting room regulations.</i> Cerebral hemispheres: gyri and sulci. Blood supply to the brain, the cerebral arterial circle.	General information, rules and regulations. 72. Peripheral nerve (longit. section, HE) 73. Peripheral nerve (cross section, HE) 74. Peripheral nerve (longit. section, OsO ₄) 75. Peripheral nerve (cross section, OsO ₄) 78. Sensory nerve ending (HE) 77. Sensory nerve ending (Ag) 17. Motor end-plate (AChE)
2 nd Sep 18-22	Neuroanatomy and blood supply of the medulla oblongata, pons and mesencephalon. Cranial nerve nuclei and the reticular formation.	Vertebral canal, meninges of the spinal cord and spinal cord preparation. Duplications of the dura mater, meningeal spaces. Cross-sectional anatomy of CNS.	 76. Sensory ganglion (HE) 69. Vegetative ganglion (Ag) 80. Spinal cord (HE) 81. Spinal cord (myelin staining)
3 rd Sep 25-29	Diencephalon: organization. Thalamus and hypothalamus. Blood supply to the diencephalon.	Structure of the brainstem, the fourth ventricle, rhomboid fossa. Exits of the cranial nerves (from the brainstem and the skull). Cross-sectional anatomy of CNS.	85. Diencephalon (oxytocin IHC) 67. Hypophysis (HE) 97. Pineal gland (HE)
4 th Oct 02-06	Anatomy, histology and synaptology of the cerebellum. Neuroanatomy of the cerebellar movement regulation. Morphological and functional bases of the regulation of the blood circulation in the brain. The blood-brain barrier and the CSF.	Diencephalon. Lateral and third ventricles. Flechsig's cut. The extreme, external and internal capsules. Basal nuclei (ganglia). Cross-sectional anatomy of CNS.	 68. Thyroid gland (HE) 69. Parathyroid gland (HE) 70. Suprarenal gland (HE) 50. Pancreas (HE) 71. Corpus luteum (HE)
5 th Oct 09-13	Neuroanatomy of the cerebral cortex. The 'module concept' in the cerebral cortex architecture. The limbic system, incl. the hippocampus.	Cerebellum: topography, parts and blood supply. Cerebellar nuclei. Cerebellar peduncules. Fromtal sections of brain. Cross-sectional anatomy of CNS.	 82. Cerebellum (HE) 83. Cerebellum (Ag) 84. Neocortex (HE) 86. Astrocytes (GFAP IHC)
6 th Oct 16-20	Basal forebrain: amygdaloid complex. Basal nuclei: anatomy and their functions in the movement regulation.	1st practical assessment Macroscopic anatomy of the CNS.	Recapitulation.

7 th Oct 23-27	Development of the nervous system.	Muscles of neck. Regions of neck: the cervical triangles. Fascial system of the neck. Surface anatomy of the neck. Facial and masticatory muscles. Related cross-sectional anatomy. No practice for the Grs 13-15 due to the day off on Oct 23.*	1st practical assessment The nervous and endocrine systems. No practice for the Grs 8, 10-12 due to the day off on Oct 23.*
8 th Oct 30 - Nov 03	The cranial nerves V, VII, VIII, IX, X, XI and XII: ganglia and peripheral branches.	Skull, part 1: The temporal and sphenoid bones. The maxilla and mandible. The facial (frontal) and lateral aspects of the skull. The cranial base: external and internal surfaces. No practice for the Grs 4-7 due to the national holiday on Nov 01. *	87. Eye (HE) 89. Lacrimal gland (HE) No practice for the Grs 1 and 2, and Grs 13-15 due to the day off on Nov 01.*
9 th Nov 06-10 Written test on Nov 10**	Anatomy and histology of the eye. Parts, layers and blood supply of the retina. Accessory visual structures: eyelids, lacrimal apparatus and extraocular muscles.	Skull, part 2: Calvaria. Bony nasal and oral cavities. Infratemporal and pterygopalatine fossae.	78. Finger pad (HE) 90. Hairy skin (HE) 88. Eyelid (HE) 96. Cochlea (HE)
10 th Nov 13-17	Neuroanatomy of the visual pathway. Light reflex of the pupil. Accomodation reflex. Horizontal and vertical gaze control.	Regions of head. Arterial supply, venous and lymphatic drainage of the head and cervical regions.	 91. Resting mammary gland (HE) 92. Lactating mammary gland (HE) 93. Umbilical cord (HE) 94. Placenta (HE) 95. Chicken embryo (HE)
11 th Nov 20-24	Anatomy and histology of the external and middle ears. Anatomy of the inner ear: osseous and membranous labyrinths.	Topography of the orbit. Anatomy of the eye. Anatomy of the middle and internal ears. Related cross-sectional anatomy.	2nd practical assessment Skin, mammary gland, sensory organs, embryology.
12 th Nov 27 - Dec 01	Organ of Corti. Fine structures of the cristae and maculae. Auditory and vestibular pathways.	Cervical plexus. Cervical part of the sympathetic trunk. Organization of the peripheral parasympathetic system in the head. Pterygopalatine fossa. Thyroid gland. Cross-sectional anatomy of neck.	Recapitulation 1: Histological preparations of the comprehensive exam.
13 th Dec 04-08	Development of the eye and ear.	<u>2nd practical assessment</u> Skull. Regions of the head and neck.	Recapitulation 2: Histological preparations of the comprehensive exam.
14th Dec 11-15	The branchial apparatus: formation, development and derivatives of the pharyngeal arches, pouches and grooves.	General recapitulation before the comprehensive exam.	Recapitulation 3: Histological preparations of the comprehensive exam.

All lectures will be held by Prof. Antal Nógrádi, except for the lecture on the 8th week, which will be delivered by Dr. Endre Dobó.

* The date and time of the make-up practices will be announced in due time.

** The accurate time (between 4 and 6 PM) and venue of the written test will be announced on the websites of Neptun and CooSpace in due time.

Sep 06, 2023



University of Szeged Albert Szent-Györgyi Medical School Department of Anatomy, Histology and Embryology Head of Institute: Prof. Dr. Antal Nógrádi 6724 Szeged, Kossuth Lajos sgt. 38. Tel: +36-62-545665

STUDY AND EXAM INFORMATION FOR **SECOND-YEAR** MEDICAL STUDENTS OF THE "ANATOMY, HISTOLOGY AND EMBRYOLOGY III." SUBJECT Academic Year 2023/2024, Autumn Semester

1 CONDITIONS OF THE SUCCESSFUL COMPLETION OF THE SEMESTER

The Study and Examination Regulations of the Faculty of Medicine of the University of Szeged demand day-to-day attendance of the practices. The attendance of the practices is checked by attendance sheets, which are attested by signature. Sick, and possibly contagious Students are not permitted to take part in the practices. According to the Study and Examination Regulations of the Faculty of Medicine, the permissible number of absences including the ones due to illness must not exceed 25% of the teaching hours of the courses in the semester. In case the number of absences is greater than the aforementioned permissible number, the completion of the appropriate course in the semester will not be accepted, and the course has to be repeated. The Students are allowed to attend <u>only</u> the practices of the groups which they are enrolled in (see the group numbers on Neptun). The missed practices cannot be made up in any way. An authentic written medical certificate (sick note) or medical report has to be sent to the educational supervisor of the Anatomy Department (Dr. Endre Dobó) by email (<u>dobo.endre@med.u-szeged.hu</u>) at latest in the last day of sick leave. The sick note presented later than the last day of sick leave will not be accepted by the Department of Anatomy.

COURSE	ANATOMY LECTURE III. (AOK-OAK027)	DISSECTION PRACTICE III. (AOK-OAK028)	HISTOLOGY PRACTICE II (AOK-OAK029)
	Compulsory	Compulsory	Compulsory
Course requirements	(i) Completion ofDissection Practice II(ii) Completion ofHistology Practice I	(i) Completion of Dissection Practice II (ii) Completion of Histology Practice I	(i) Completion of Dissection Practice II (ii) Completion of Histology Practice I
Course type	Comprehensive examination (<i>1-5</i>)	Term mark (<i>1-5</i>)	Term mark (<i>1-5</i>)
Exam / Subject Requirements	(i) Completion ofDissection Practice III(ii) Completion ofHistology Practice II	Absences <25%	Absences <25%

Subject and exam requirements for completion of the courses:

2 ORDER OF THE MID-TERM ASSESSMENTS AT ANATOMY PRACTICE III

During the semester, the Students have to sit a **written** test on the 9th week of the semester. The themes of the test cover the fine/microscopic structure of the CNS, including nuclei and pathways. The test will be composed of single choice questions concerning the theoretical issues of the relevant topics. The exact time of the written test will be announced on the websites of CooSpace and Neptun at the beginning of the semester.

The Students will take two practical assessments of gross anatomy in the dissection room during the ordinary practices on the 6th and 13th weeks of the semester. The topics of the assessments are determined in the "Schedule for Anatomy III". Each mid-term exam will assess the Student's actual knowledge by (1) assignments of some anatomical items to be recognized and precisely named and (2) relevant theoretical questions. If the Student does not recognize any crucial anatomical item that is listed on the "The most essential anatomical structures (Anatomy III)", available from CooSpace, will receive "fail" mark (1) even if the other questioned items are correctly identified. If an important relevant, so called "Essential theoretical question" remains unanswered correctly, the Student will receive "Fail" mark (1) as well.

All practical assessments and the written test are obligatory.

Lateness in the assessments is not accepted: the Student who is not present at due time of the written test or practical assessments will receive an "Absent" mark with zero value (0). The failed (unsuccessful) or missing (due to unauthorized absence) written test or practical assessments cannot be re-taken.

The Student's absence can be authorized by presenting/sending a medical certificate (sick note) to the educational supervisor (dr. Endre Dobó, email: dobo.endre@med.u-szeged.hu) of the Anatomy Department at latest in the last day of sick leave. The sick note presented later than the last day of sick leave will not be accepted by the Department of Anatomy.

In case the Student had authorized absence from the practical assessment, the Student has to make up the missed assessment at the first subsequent practice after the last missed practice. If making up the missed assessment is not possible until the end of the regular semester, the Student has to make up the assessment in the first week of the exam period.

In case the Student had authorized absence from the written test, the Student has to make up the test on an occasion which is set in due time.

Calculation of the result:

The mark of the dissection practice will be calculated from the results of the written test and the 2 practical assessments. The result of the written test will be doubly counted. The result for the term mark is calculated according to the formula as shown below:

R = (2*W + P1+P2)/4

where **R** means the result for the term mark **W** means the written test **P1**, **P2** mean the 1st, 2nd practical assessments, respectively

Calculation of the term mark from the result:

Excellent (5): 4.50 – 5.00 Good (4): 3.50 – 4.49 Satisfactory (3): 2.50 – 3.49 Pass (2): 2.00 – 2.49 Fail (1): <2.00

The student whose average for the term mark is below 2.00, will be provided chance ("1st <u>practical</u> <u>repeat exam</u>") to change the mark from "Fail" to "Pass" in the examination period. If the student does not pass at this first attempt, s/he will be granted another chance ("2nd <u>practical repeat exam</u>") to pass. The <u>practical repeat exam</u>s evaluate exclusively the student's practical knowledge of the topics from the entire semester of the anatomy practices. The student will be asked 3 "essential" anatomical items listed on the "The most essential anatomical structures (Anatomy III)" from the 2 blocks of topics, respectively, thus a total of 6 items, to be recognized and precisely named. Each questioned item from every topic block must be named correctly in order to pass the exam, and the student will earn "Pass" mark as a term mark of Dissection practice III. In case of an unsuccessful practical repeat exam, the term mark will be the "Fail" mark.

Please note: Only those students can sit the end-course (comprehensive) exam who earned at least "Pass" mark in Dissection practice III.

3 ORDER OF THE MID-TERM ASSESSMENTS AT THE HISTOLOGY PRACTICE II

During the semester, the Students have to sit 2 mid-term oral assessments. The topics of the assessments are determined in the "Schedule for Anatomy III". At these MTOs the Students are given unlabelled histological preparations, in which they are expected to recognize the tissue components and answer relevant theoretical questions.

Both assessments are obligatory.

The failed (unsuccessful) or missing (due to unauthorized absence) assessments cannot be re-taken.

The Student's absence can be authorized by presenting/sending a medical certificate (sick note) to the educational supervisor (dr. Endre Dobó, email: dobo.endre@med.u-szeged.hu) of the Anatomy Department at latest in the last day of sick leave. The sick note presented later than the last day of sick leave will not be accepted by the Department of Anatomy.

In case the Student had authorized absence from the assessment, the Student has to make up the missed assessment at the first subsequent practice after the last missed practice. If making up the missed assessment is not possible until the end of the regular semester, the Student has to make up the assessment in the first week of the exam period.

Term mark of the histology practice:

The mark of the histology practice will be formed from the average of the results of the assessments as follows:

Excellent (5): 4.50 – 5.00 Good (4): 3.50 – 4.49 Satisfactory (3): 2.50 – 3.49 Pass (2): 2.00 – 2.49 Fail (1): <2.00

The student whose average for the term mark is below 2.00, will be provided chance ("1st <u>practical</u> <u>repeat exam</u>") to change the mark from "Fail" to "Pass" in the examination period. If the student does not pass at this first attempt, s/he will be granted another chance ("2nd <u>practical repeat exam</u>") to pass. The <u>practical repeat exam</u>s evaluate exclusively the student's skill to identify essential histological items. Of course, the identification of the organs is a prerequisite for the exam. The examinee will be asked 3 + 3 histological items from the 2 topic blocks, respectively, thus a total of 6 items is to be recognized and precisely named. Each item from each topic block must be named correctly in order to complete the Histology Practice II, and s/he will earn pass mark (2) as a term mark. In case of an unsuccessful re-assessment, the term mark will be the "Fail" mark (1).

Please note: Only those students can sit the end-course exam who earned at least "Pass" mark for Histology practice II.

4 ORDER OF THE COMPREHENSIVE EXAM

The Students are expected to be dressed up for the occasion.

The Students have to present any proof of identification.

The venues, dates and the time of the comprehensive exam will be announced on the website of Neptun. The Students have to be present on the venues of the exam at the time appointed on Neptun. In case of being more than 10 min late for the exam, the Student loses the chance of taking the exam, and the "Absent" remark is entered on the Neptun.

The exam takes place in a dissection room, in front of an examination board, designated to the role by the head of the Anatomy Department.

The 1st and 2nd attempts in the same exam period

The comprehensive exam begins with a <u>cadaveric entry test</u>, during which the examinee is asked to identify 10 anatomical items, listed in the series of "The most essential anatomical items ...". The marks for this test are as follows:

9-10 correct identifications: "5"; 8 correct identifications: "4"; 7 correct identifications: "3"; 6 correct identifications: "2"; 0-5 correct identifications: "1". "1" entails the "Fail" mark in the actual exam.

In case of marks better than "1", the exam continues: The examinee receives one random topic from each group of topics, and two randomly selected histological preparation to give an account of his/her knowledge in these topics.

The 3rd attempt in the same exam period

The examinee is exempted from the entry test. S/he receives one random topic from each group of topics, and one randomly selected unlabelled histological preparation to give an account of his/her knowledge in these topics.

5 ADDITIONAL STUDY-RELATED INFORMATION

The topic lists are available on the official website of the Anatomy Department and on the CooSpace from the beginning of the semester.

Various pieces of information are available on the homepage of the Department of Anatomy, Histology and Embryology, (Faculty of Medicine, University of Szeged): <u>http://anatomy.szote.u-szeged.hu/Anatomy/</u> and on CooSpace.

For all the study-related issues not detailed in this document, the rules of the Study and Examination Regulations of the Faculty of Medicine or of the University of Szeged should be consulted. The questions concerning study and exam issues should be addressed to the educational supervisor of the Anatomy Department (Dr. Endre Dobó). Any student queries without giving the full name as it appears in Neptun and group number per year, the educational supervisor is not obliged to respond to.

Szeged, 8 September 2023

Prof. Antal Nógrádi, MD, PhD, DSc Chairman, Department of Anatomy, Histology and Embryology

INJURY PREVENTIVE RULES AND DISSECTING ROOM REGULATIONS

The anatomical Dissecting Room, due to the fact that the dissection and preparation of human bodies and organs involves many students, should be considered as a place with increased risks of injury and infection. Therefore, keeping to the basic injury preventive and preparation rules is compulsory to every student and tutor in the dissecting room. In order to avoid accidents and injuries, besides keeping to the **injury preventive rules**, **preventive devices** have to be used in an adequate way.

On entering the building, the students have to use the hand sanitizer found at the front desk receptionist.

- 1. The students will wait in the court yard (in case of the "downstairs" dissection room) or in the corridor (in case of the "upstairs" dissection room) before the beginning of the practice.
- The students may enter and study specimens in the Dissecting Room only in the presence of their tutor, only during the class hours officially stated by the class schedule or by the Anatomy Department. <u>The anatomy practices must begin and end strictly and accurately on the times</u> <u>announced in the website of Neptun.</u>
- 3. No visitors are allowed in the premises of the Dissecting Room.
- 4. The anatomy practices (3x45 min) are held without any break within.
- 5. The outside door is locked during the entire period of practices.
- 6. The cloakroom is locked during the entire period of practices.
- 7. The students are individually provided with lockers.
- 8. For the injury and infection prevention, students have to attend the dissection practices with shortly cut nails, wearing non-skidding shoes and long trousers even in summer (shorts and minis are not allowed).
- 9. Before the dissection practice begins, all the objects worn on fingers, hands and wrists (e.g. watch, ring, and bracelet) must be removed, according to the above mentioned viewpoints.
- 10. The students are obliged to wear **lab coat**, provided by the Department, when attending the anatomy practices.
- During the dissection and preparation, disposable plastic gloves, provided by the Department, have to be used to prevent injuries and infections. The students need to bring **forceps** and **scalpels** in properly closed cases for the practices.
- 12. At the end of the practices, the used gloves and paper towels must be thrown into the appointed trash containers.
- 13. The used metal devices (e.g. scalpel blades) must be collected in a separate metal container. They mustn't be thrown into the communal trash bins.
- 14. Any accidents, injuries and other emergencies within the Dissecting Room must be immediately reported to the practice leader (tutor). The students are informed about the labour safety rules in the first practice of the semester. These regulations of accident prevention must be strictly observed by every student.

- 15. The Dissecting Room must be left after careful hand wash in running water using soap and disinfectant material, followed by hand drying.
- 16. Taking any organ, tissue, body part or studied model out of the Dissecting Room is strictly prohibited.
- 17. Eating, drinking and smoking are not permitted in the Dissecting Room.
- 18. Any form of visual and voice recording (by conventional or digital cameras, video recorders, mobile phones) in the premises of the Anatomy Department including the Dissecting Rooms as well as the Anatomy Museum is explicitly forbidden.
- 19. The use of any kind of communication equipment (mobile phone, smartphone, tablet, laptop, netbook) is not permitted in the Dissecting Room.
- 20. The anatomy practice is a compulsory course; the attendance is checked by means of a written attendance sheet. In case of being late for the practice, the student is NOT allowed to participate in the practice.
- 21. Safekeeping is not provided by the Anatomy Department. No responsibility is taken for any lost personal belongings or assets.
- 22. The students may leave the Dissecting Room only with the tutor's permission even temporarily.

It must be kept in mind that the human bodies and body parts which are studied in the anatomy practices derived from people who generously donated their bodies for the benefit of medical science. The dead body and its body parts can be subjects for Dissecting Room studies exclusively; any improper form of behaviour is the violation of human shrine and dignity. Besides, the professional caring for the bodies and specimens is essential for all students studying anatomy. The students are required to show utmost respect for the specimens all the time and keep themselves to the rules of medical profession about privacy and respect. The strict observance of the above-described Dissecting Room Regulations is the disciplinary responsibility of every student.

Szeged, 8 September 2023

Prof. Antal Nógrádi, MD, PhD, DSc Chairman, Department of Anatomy, Histology and Embryology Albert Szent-Györgyi Medical School, University of Szeged

THE RULES OF THE HISTOLOGY PRACTICES

On entering the building, the students have to use the hand sanitizer found at the front desk receptionist.

- 1. The histology practice consists of 2 teaching hours (45 min each); this 90-min practice is held without any break within.
- There are microscopes and slide boxes of high financial and goodwill value in the Histology Room. Every student must take care of the devices and property in the Histology Room. Taking a microscope away from its original place, disassembling it, taking any slide or slide box out of the Histology Room is strictly forbidden.
- 3. The microscopes and slide boxes are numbered. At the beginning of the semester every student chooses a place by sitting down by any of the microscopes. By his or her signature the student shoulders the financial responsibility for the microscope and slide box belonging to his or her chosen place that should be kept without changing for another place during the entire semester. The students are obliged to carefully check their slide boxes for any missing or broken slide at the beginning of the practice. If the lack of or damage to a slide is not reported to the practice leader any damage or loss in the slide box noticed at the end of the practice is considered to be the disciplinary responsibility of the student. The student who breaks or damages histological slide(s) or neglects to report missing slide(s) is to be charged extra histological slide question(s) at the end-semester exam, the number of the extra question(s) will be equivalent to the number of the slides in question.
- 4. In the first histology practice, every student receives detailed information on: (a) the proper handling of the microscopes, (b) the proper handling of the slides and slide boxes, and (c) the order and requirements of the practices.
- 5. After being informed, by his or her signature, the student acknowledges that the mentioned information is understood; the class rules are accepted and are to be kept to during the semester.
- The histology practice is a compulsory practical class; the attendance of the classes is checked by written attendance sheet. In case of being late for the practice, the student is NOT allowed to participate in the practice.
- 7. In the histology practices, the students must follow the norms of the teaching hours; bringing food or drink into the Histology Room is prohibited. (Smoking is prohibited in the whole area of the Anatomy Department, including the courtyard, the main entrances and the bordering streets.)
- 8. The use of mobile phones or any kind of communication equipment is not permitted in the Histology Room.
- 9. The jackets, coats and school bags must be placed and stored on the clothes-hooks and/or the benches along wall.
- 10. The students may leave the Histology Room only with the tutor's permission even temporarily.

Szeged, 8 September 2023

Prof. Antal Nógrádi, MD, PhD, DSc Chairman, Department of Anatomy, Histology and Embryology



University of Szeged Albert Szent-Györgyi Medical School Department of Anatomy, Histology and Embryology Head of Institute: Prof. Dr. Antal Nógrádi 6724 Szeged, Kossuth Lajos sgt. 38. Tel: +36-62-545665

Topic list for the end-semester exam of Anatomy, Histology and Embryology II. (Anat II) Academic year 2022/2023, the spring semester

I. BLOOD- AND LYMPHATIC CIRCULATORY ORGAN SYSTEMS. THORACIC CAVITY. ENDOCRINE SYSTEM.

- 1. Histology of the red bone marrow. Embryonic/foetal haematopoiesis. Haematopoietic stem cells and their regulation. The structure and development of erythrocytes and thrombocytes.
- 2. White blood cells: types, and their morphological properties and development. The mononuclear phagocytic system.
- 3. The thymus: development, age-related changes, functional anatomy and histology.
- 4. Histology of the lymphatic follicles and lymph nodes.
- 5. The functional anatomy and histology of the tonsils.
- 6. The spleen: anatomy, blood supply and histology.
- 7. Topography of the thoracic cavity, the divisions of the mediastinum, the surface projections of thoracic organs.
- 8. The definition and structures of the posterior mediastinum.
- 9. The surfaces, form and topography of the heart. The anatomy, blood supply and innervation of the pericardium.
- 10. The anatomy of the atria and ventricles of the heart.
- 11. The anatomy of the valves and the septa of the heart.
- 12. The private vessels of the heart. The innervation of the heart. The cardiac ganglia.
- 13. The impulse-generating and -conducting systems of the heart. The histology of the heart.
- 14. The development of the heart. Formation of the aorta and pulmonary trunk.
- 15. The parts, topography and branches of the aorta.
- 16. Topography and branches of the subclavian artery and of the thoracic aorta. Anastomoses between the subclavian and external iliac arteries.
- 17. The anatomy and fine structure of the peripheral sympathetic system.

- 18. The anatomy, histology of the pituitary gland. The hypothalamo-hypophyseal axis, the hypothalamic parvo- and magnocellular systems.
- 19. The anatomy, histology and physiology of the pineal gland.
- 20. The anatomy, histology of the thyroid and parathyroid glands. Diffuse endocrine system.
- 21. The anatomy, histology of the adrenal gland. The endocrine pancreas.
- 22. The endocrine cells of the gonadal organs and their functions.

II. DIGESTIVE SYSTEM, ABDOMINAL CAVITY.

- 1. The anatomy and histology of the lips and oral cavity.
- 2. The anatomy, blood supply, innervation and histology of the submandibular and sublingual glands.
- 3. The anatomy, blood supply, innervation and histology of the parotid gland.
- 4. The anatomy, blood supply and innervation of the teeth. The histology of the teeth. The dentition.
- 5. The anatomy, muscles, blood supply and innervation of the tongue. The histology of the tongue.
- 6. Hard and soft palates: anatomy (muscles, blood supply and innervation) and histology.
- 7. The pharynx: anatomy, muscles, blood supply and innervation.
- 8. The abdominal wall: its layers and muscles. The rectus sheath.
- 9. The topographic division of the abdominal cavity and the surface projections of the abdominal organs.
- 10. The oesophagus: anatomy, topography, blood supply, innervation and histology.
- 11. The stomach: anatomy, blood supply, innervation and histology.
- 12. The small intestine: anatomy, blood supply, innervation and histology.
- 13. The large intestine: anatomy, blood supply, innervation and histology.
- 14. The pancreas: anatomy, blood supply, innervation and histology.
- 15. The liver: anatomy, blood supply and system of the hepatic portal vein.
- 16. The liver: histology; the classical and functional hepatic lobules.
- 17. The extrahepatic bile system: anatomy, blood supply and histology.
- 18. The peritoneum: anatomy, blood supply, innervation and histology.
- 19. The anatomy of the greater and lesser omenta, omental bursa (lesser sac) and mesentery.
- 20. The paired visceral and parietal branches of the abdominal aorta. The tributaries of the inferior vena cava.
- 21. The unpaired visceral branches of the abdominal aorta and their branches.
- 22. The anatomy and functional significance of the portacaval anastomoses.

- 23. The sympathetic and parasympathetic (vagal) innervations of the abdominal organs. The sensory innervation of the visceral organs. Referred pain.
- 24. The general histological structure of the digestive system: layers in the different parts of the gastrointestinal tract. Glands and sphincters in the wall of the digestive tract. Epithelial transitions.
- 25. The development of the oesophagus and the stomach.
- 26. The development of the midgut and hindgut, and their derivatives.
- 27. The development of the liver, extrahepatic duct system and pancreas.

III. URINARY SYSTEM. GENITAL ORGANS. PELVIC CAVITY. PERINEUM.

- 1. The kidney: anatomy, topography, supporting structures and histology.
- The kidney: blood supply and its microcirculation. The fine structure of the renal glomerulus. The juxtaglomerular apparatus.
- 3. The renal pelvis and ureter: anatomy, blood supply and histology.
- 4. The urinary bladder: anatomy, supporting structures, blood supply, innervation and histology.
- 5. The scrotum: anatomy, layers, blood supply and innervation. The spermatic cord and the inguinal canal.
- 6. The testis and epididymis: anatomy, blood supply and histology.
- 7. Spermatogenesis. The electron microscopic structure of the spermatozoon.
- 8. The deferent duct, seminal vesicle and prostate: anatomy, blood supply and histology.
- 9. The parts, anatomy, blood supply and histology of the male urethra.
- 10. The penis: anatomy, blood supply, innervation and histology. The mechanism of the erection.
- 11. The ovary: anatomy, ligaments, blood supply and histology.
- 12. Oogenesis and histology of the ovarian folliculi.
- 13. The uterus and uterine tube: anatomy, peritoneal relations, ligaments and blood supply.
- 14. The uterus and uterine tube: histology. The menstrual and ovarian cycles.
- 15. The structures of the urogenital (pelvic) peritoneum in the male and in the female. The supporting structures and anatomical compartments in the male and female lesser pelvis.
- 16. The vagina and the external female genitalia: anatomy, blood supply, innervation and histology.
- 17. The branch system of the internal iliac artery.
- 18. The veins of the pelvis and the lymphatic drainage of the pelvic organs.
- 19. The autonomic nervous system in the pelvis. Plexuses and ganglia in the lesser pelvis.
- 20. The branches of the sacral plexus in the pelvis, innervation of the pelvic organs. Sphincters in the walls of the pelvic viscera: functions, reflexes, innervation.
- 21. The pelvic floor: functional anatomy, blood supply and innervation.

- 22. The anatomy of the male perineum: muscles, layers, fasciae and compartments.
- 23. The anatomy of the female perineum: muscles, layers, fasciae and compartments.
- 24. The development of the kidney and the urinary tract.
- 25. The development of the genital organs

IV. CROSS-SECTIONAL ANATOMY

- 1. Heart: at the level of the pulmonary valve (one cross-section).
- 2. Heart: at the level of the left atrium (one cross-section).
- 3. Heart: at the level of the atrioventricular orifice (one cross-section).
- 4. Heart: at the level of the ventricles (one cross-section).
- 5. Heart: at the level of the apex of heart (one cross-section).
- 6. Abdominal cavity: at the level of the body of stomach (one cross-section).
- 7. Abdominal cavity: at the level of the pancreas (one cross-section).
- 8. Abdominal cavity: at the level of the hilum of kidney (one cross-section).
- 9. Pelvis: at the level of the sacral promontory (one cross-section).
- 10. Male pelvis: at the level of the urinary bladder (one cross-section).
- 11. Male pelvis: at the level of the prostate (one cross-section).
- 12. Male pelvis: at the level of the pubic symphysis (one cross-section).
- 13. Male perineum (two cross-sections).
- 14. Male external genitalia (one cross-section).
- 15. Female pelvis: at the level of the ovary (one cross-section).
- 16. Female pelvis: at the level of the fundus of uterus (one cross-section).
- 17. Female pelvis: at the level of the cervix of uterus (one cross-section).
- 18. Female pelvis: at the level of the levator ani (one cross-section).
- 19. Female perineum (two cross-sections).

V. HISTOLOGICAL SLIDES

- 1. Aorta (HE)
- 2. Aorta (resorcin-fuchsin)
- 3. Bone tissue (cross ground)
- 4. Artery and vein (HE)
- 5. Blood smear (MGG)
- 6. Red bone marrow (HE)
- 7. Thymus (HE)
- 8. Spleen (HE)
- 9. Lymph node (HE)
- 10. Palatine tonsil (HE)
- 11. Lip (HE)
- 12. Dorsum of the tongue (HE)
- 13. Circumvallate papilla (HE)
- 14. Root of the tongue (HE)
- 15. Parotid gland (HE)
- 16. Submandibular gland (HE)
- 17. Sublingual gland (HE)
- 18. Oesophagus (HE)
- 19. Stomach: cardia (HE)
- 20. Stomach: fundus, corpus (HE)
- 21. Stomach: pylorus (HE)
- 22. Duodenum (HE)
- 23. Jejunum (HE)
- 24. Jejunum (PAS + H)

- 25. Ileum (HE)
- 26. Large intestine (HE)
- 27. Vermiform appendix (HE)
- 28. Anal canal (HE)
- 29. Liver (HE)
- 30. Liver (Ag)
- 31. Liver (Kupffer-cells)
- 32. Gallbladder (HE)
- 33. Pancreas (HE)
- 34. Kidney (HE)
- 35. Ureter (HE)
- 36. Urinary bladder (HE)
- 37. Penis-urethra (HE)
- 38. Testis-epididymis (HE)
- 39. Spermatic cord (HE)
- 40. Prostate (HE)
- 41. Seminal vesicle (HE)
- 42. Ovary (HE)
- 43. Uterine tube (HE)
- 44. Uterus (HE)
- 45. Cervix of uterus (HE)
- 46. Trachea (HE)
- 47. Lung (HE)
- 48. Lung (orcein + H)

Szeged, February 17, 2023

Recommended literature





Sobotta ANATOMY TEXTBOOK

Edited by Jens Waschke Tobias M. Böckers Friedrich Paulsen English Edition with Latin Nomenclature

ELSEVIER





HUMAN HISTOLOGY A Text and Atlas for Physicians and Scientists



BERTALAN DUDÁS, M.D., PH.D. Habil.

