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METHODICAL RECOMMENDATIONS FOR STUDENT'S INDIVIDUAL WORK

Discipline: «The musculoskeletal system and skin are normal»

Discipline code: ODAKN 2211

Name of EP: 6B10117 - «Dentistry»

Number of hours/credits: 60 hours/2 credits

Year and term of the study: Year – II, term– III

Individual work: 12 hours

Shymkent, 2023

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The task №1

1.Theme: Determining whether paired bones belong to the right or left half of the skeleton.

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2.Aim: learn from the anatomical features of the bone structure to determine its belonging to the right or left half of the skeleton.

3.Tasks:

1. Determine the belonging to the right or left half of the bones of the shoulder girdle and upper limb: scapula, collarbone, humerus, radius, ulna.

2. Determine whether the rib bones belong to the right or left half.

3. Determine the belonging to the right or left side of the pelvic bone and bones of the lower extremity: femur, tibia, fibula.

4. Submission / assessment form:

-description of the anatomical preparation on the Pirogov anatomical table / check list -practical skills assessment / check list

-X-ray description / check list

The assessment form is indicated in the syllabus.

5. SIW submission criteria:

The assignments received by students must be completed on time and in full.

When performing tasks it is necessary:

- independently study the topic, if necessary, consult the teacher;

- when completing assignments, students should use the required and additional literature, online resources;

- tasks must be prepared individually.

6. Deadline: 2 week.

7. Bibliography:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks, etc.):

1. How to determine the left (right) collarbone? What are the anatomical signs?

2. By what anatomical signs can the left (right) shoulder blade be identified? Name and show them.

3. Name and show the anatomical signs by which the left (right) humerus can be determined.

4. Name and show the anatomical signs by which you can determine the left (right) ulnar bone.

5. Name and show the anatomical features by which the left (right) radius bone can be determined.

6. Name and show the anatomical signs by which you can determine the left (right) costal bone.

7. Name and show the anatomical signs by which you can determine the left (right) pelvic bone.

8. Name and show the anatomical signs by which to identify the left (right) femur.

9. Name and show the anatomical signs by which you can determine the left (right) tibia.

10. Name and show the anatomical signs by which you can determine the left (right) fibula.

The task №2

1.Theme: Topography of the facial part of the skull.

2.Aim: to study structure of bones of the facial skull.

3.Tasks:

1. General overview of the skull, dividing it into the brain and facial section.

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2. Show the border of the brain and facial skull.

3. List and show the bones of the facial skull.

4. Submission / assessment form:

-description of the anatomical preparation on the Pirogov anatomical table / check list -practical skills assessment / check list

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-X-ray description / check list

The assessment form is indicated in the syllabus.

5. SIW submission criteria:

The assignments received by students must be completed on time and in full.

When performing tasks it is necessary:

- independently study the topic, if necessary, consult the teacher;

- when completing assignments, students should use the required and additional literature, online resources;

- tasks must be prepared individually.

6. Deadline: 3 week.

7. Bibliography:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks, etc.):

- 1. List and show the bones of the facial skull.
- 2. Name and show the surface of the body of the upper jaw.
- 3. List the processes of the body of the upper jaw.
- 4. List the nasal concha, which of them is an independent bone?
- 5. Name the processes of the palatine bone.
- 6. What are the surfaces of the perpendicular plate of the palatine bone, which of them is medial?
- 7. What processes ends perpendicular plate of the palatine bone?
- 8. List and show the processes and openings of the zygomatic bone.
- 9. List and show the parts of the lower jaw.
- 10. Name the processes of the lower jaw.
- 11. List the elevations of the lower jaw.
- 12. What facial bones are pneumatic?

The task №3

1. Theme: Canals of the temporal bone.

2.Aim: To study the structure of the bones of the brain skull, age and gender characteristics. 3.Tasks:

- 1. Determine the position of the temporal bone in the skull
- 2. List the bones that the temporal bone borders
- 3. What are the channels of the temporal bone.

4. Submission / assessment form:

-description of the anatomical preparation on the Pirogov anatomical table / check list -practical skills assessment / check list

-X-ray description / check list

The assessment form is indicated in the syllabus.

5. SIW submission criteria:

The assignments received by students must be completed on time and in full.

When performing tasks it is necessary:

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- independently study the topic, if necessary, consult the teacher;

- when completing assignments, students should use the required and additional literature, online resources;

- tasks must be prepared individually.

6. Deadline: 4 week.

7. Bibliography:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks, etc.):

- 1. General overview of the skull, division into the cerebral and facial sections
- 2. Describe the structure of the scales of the frontal bone
- 3. Determine the position of the temporal bone in the skull
- 4. List the bones that the temporal bone borders
- 5. What are the channels of the temporal bone.
- 6. Carotid channel.
- 7. The muscular-tubal canal.
- 8. The facial channel.
- 9. The tympanic channel.
- 10. The mastoid canal.

The task №4

1. Theme: Simulation of joint movements.

2. Aim: To study the connection of the bones of the trunk, shoulder girdle, free upper limb, pelvic girdle, free lower limb.

3.Tasks:

To teach students to be able to find, name and show bone joints on tablets and dummies, determining the axes and possible movements around them.

4. Submission / assessment form:

-description of the anatomical preparation on the Pirogov anatomical table / check list -practical skills assessment / check list

-X-ray description / check list

The assessment form is indicated in the syllabus.

5. SIW submission criteria:

The assignments received by students must be completed on time and in full.

When performing tasks it is necessary:

- independently study the topic, if necessary, consult the teacher;

- when completing assignments, students should use the required and additional literature, online resources;

- tasks must be prepared individually.
- 6. Deadline: 5 week.

7. Bibliography:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks, etc.):

- 1. Shoulder joint: structure, ligaments, functions.
- 2. Elbow joint: structure, ligaments, functions.
- 3. Wrist joint: structure, ligaments, functions.
- 4. Hip joint: structure, ligaments, functions.
- 5. Knee joint: structure, ligaments, functions.
- 6. Ankle joint: structure, ligaments, functions.

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The task №5

1. Theme: Frontier control -I.

2.Aim: Consolidation of the material covered on the topics of the lecture, practical training, SIWT and SIW.

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3. Assignments: Basic questions on the topics covered

4.Form of execution / evaluation:

Oral survey on the topics covered with the use of anatomical preparations, dummies, tablets, posters. The form of assessment is indicated in the syllabus

5. Execution criteria:

When performing tasks, you must:

- Study the topics on your own, consult with the teacher if necessary;

-When completing assignments, students must use compulsory and additional literature, Internet resources.

6. Terms of delivery: 6-week.

7. Literature:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks):

Ouestions:

1.As a result of the car accident, the victim's side surface of the head was damaged, and the tympanic part of the temporal bone separated from the pyramidal part.

Ouestions:

Anatomy: describe the structure of the temporal bone.

Histology: Describe the histopreparation of flat bone tissue.

Physiology: Physiological properties of muscles.

Biochemistry: The chemical composition of osteoclasts.

Radiation diagnostics: Choose a research method and its projection.

2. As a result of a strong blow to the side of the head, the zygomatic bone is broken. In this case, the act of chewing changes.

Ouestions:

Anatomy: describe the structure of the zygomatic bone.

Histology: describe the histopreparation of reticulofibrous bone tissue.

Physiology: function of the masticatory muscle.

Biochemistry: matrix components.

Radiation diagnostics: choose the main method of examination and projection.

3. Among the injuries of the mandible, the most frequent are fractures of the condylar and coronal processes. Fracture of the coronal process of the lower jaw, leads to speech impairment. **Ouestions:**

Anatomy: describe the structure of the lower jaw

Histology: describe the histopreparation of hyaline cartilage

Physiology: chewing strength and muscle work.

Biochemistry: bone matrix proteins.

Radiation diagnostics: choose the research method and its projection.

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4. One of the ligaments at the junction of the spine with the skull performs the function of the articular surface. What is the name of this bundle?

Questions:

Anatomy: describe the structure of the first cervical vertebra

Histology: Describe the histopreparation of loose fibrous connective tissue

Physiology: muscle function.

Biochemistry: bone tissue glycosaminoglycans.

Radiation diagnostics: choose the research method and its projection.

5. As a result of a sudden fall, the victim received a fracture of the humerus. What is the name of the most common part of a humerus fracture?

Questions:

Anatomy: describe the structure of the proximal epiphysis of the humerus **Histology**: describe the histopreparation of flat bone tissue.

Physiology: Types of muscle contractions.

Biochemistry: Regulation of bone metabolism.

Radiation diagnostics: Choose the main X-ray method and projection.

6.The patient has a ligament of the femoral head damaged as a result of the tuberculosis process. What complications can occur if the patient has not received surgical treatment in time? **Ouestions:**

Anatomy: Describe the structure of the proximal epiphysis of the femur.

Histology: description of the histopreparation of reticulofibrous bone tissue

Physiology: The mechanism of muscle concussion.

Biochemistry: How nucleation takes place.

Radiation diagnostics: specify the projection by selecting the method of radiation examination.

7.In a football match, a player suffered a knee injury. The X-ray clearly shows a fracture of the bone located in the tendon of the quadriceps femoris. Which of the listed groups of bones does this bone belong to?

Questions:

Anatomy: describe the structure of the proximal epiphysis of the tibia

Histology: Describe the Histopreparation of scaly bone tissue

Physiology: the mechanism of muscle contraction.

Biochemistry: the biological significance of osteocytes.

Radiation diagnostics: what method of examination do you use after an X-ray.

<u>The task №6</u>

1. Theme: Practical meaning of neck triangles. Blood supply, venous outflow, innervation of the muscles of the head and neck.

2. Aim: To study practical significance of the triangles of the neck.

3. Tasks: To teach students to know the topography of triangles, their components (structural components).

4. Submission / assessment form:

-description of the anatomical preparation on the Pirogov anatomical table / check list

-practical skills assessment / check list

-X-ray description / check list

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The assessment form is indicated in the syllabus.

5. SIW submission criteria:

The assignments received by students must be completed on time and in full.

When performing tasks it is necessary:

- independently study the topic, if necessary, consult the teacher;

- when completing assignments, students should use the required and additional literature, online resources:

- tasks must be prepared individually.

6. Deadline: 7 week.

7. Bibliography:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks, etc.):

1. Carottid triangle: boundaries, structural components, practical significance.

2. Muscular (scapular-tracheal) triangle: boundaries, structural components, practical significance.

3. The submandibular triangle: boundaries, structural components, practical significance.

4. Lingual triangle (Pirogov): boundaries, structural components, practical significance.

5. The omo-clavicular triangle: boundaries, structural components, practical significance.

6. The omo-trapezoidal triangle: boundaries, structural components, practical significance.

The task № 7

1. Theme: Linea alba. Sheath of the rectus abdominis muscle. Inguinal canal. Blood supply, venous outflow, innervation.

2. Aim: Examine the structure of the white line of the abdomen. To study the structure of the tendon sheath of the rectus abdominis muscle. To study the structure of the inguinal canal.

3. Tasks:

To teach students to know the structure, topography of the white line of the abdomen. To teach students to know the topography of the tendon sheath of the rectus muscle above and below the navel. To teach students knowledge of the structure, topography and components of the inguinal canal.

4. Submission / assessment form:

-description of the anatomical preparation on the Pirogov anatomical table / check list -practical skills assessment / check list

-X-ray description / check list

The assessment form is indicated in the syllabus.

5. SIW submission criteria:

The assignments received by students must be completed on time and in full.

When performing tasks it is necessary:

- independently study the topic, if necessary, consult the teacher;

- when completing assignments, students should use the required and additional literature, online resources;

- tasks must be prepared individually.
- 6. Deadline: 8 week.

7. Bibliography:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks, etc.):

1. What are the weaknesses in the front wall of the abdomen.

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2. How are the front and back walls of the tendon sheath of the rectus abdominis muscle constructed?

- 3. What are the walls of the inguinal canal.
- 4. The structure of the deep inguinal ring.
- 5. The structure of the superficial inguinal ring.
- 6. Gender differences in the contents of the inguinal canal.

<u>The task №8</u>

1.Theme: Frontier control -II.

2.Aim: Consolidation of the material covered on the topics of the lecture, practical training, SIWT and SIW.

3. Assignments: Basic questions on the topics covered

4.Form of execution / evaluation:

Oral survey on the topics covered with the use of anatomical preparations, dummies, tablets, posters. The form of assessment is indicated in the syllabus

5. Execution criteria:

When performing tasks, you must:

- Study the topics on your own, consult with the teacher if necessary;

-When completing assignments, students must use compulsory and additional literature, Internet resources.

6. Terms of delivery: 9- week.

7. Literature:

Indicated in syllabus point 11. Learning resources

8. Control (questions, tests, tasks):

Questions:

Ticket 1

The patient went to the trauma center with complaints of pain when moving in the elbow joint.

Questions:

Anatomy: describe the structure and biomechanics of the elbow joint.

Histology: describe dense fibrous connective tissue

Physiology: about the maximum frequency and intensity of irritation

Biochemistry: bone grafts.

Radiation diagnostics: the optimal method of radiation examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)

Ticket 2

The patient went to the doctor with a complaint of pain when moving in the left wrist joint. **Questions:**

Anatomy: describe the structure, biomechanics of the wrist joint

Histology: describe the skeletal muscle fiber

Physiology: mmaximum frequency and intensity of irritation

Biochemistry: on the prevalence of metabolism in bone tissue.

Radiation diagnostics: the optimal method of radiation examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)

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Ticket 3

As a result of a car accident, the patient's hip joint was damaged.

Questions:

Anatomy: describe the structure and biomechanics of the hiporo jointa.

Physiology: muscle hypertrophy

Histology: describe the structure of the cartilage tissue.

Biochemistry: bonefragments.

Radiation diagnostics: the optimal method of radiation examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)

Ticket 4

The patient went to the trauma center with complaints of pain when moving in the knee joint.

Questions:

Anatomy: describe the structure and biomechanics of the knee joint.

Histology: describe the structure of the cartilage tissue.

Physiology: berty, stages

Biochemistry: Mmineral substances of bone tissue.

Radiation diagnostics: the optimal method of radiation examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)

Ticket 5

Examination of the patient revealed pain and limited range of motion in the ankle joint. **Ouestions:**

Anatomy: describe the structure and biomechanics of the ankle joint.

Histology: Describe the striated muscles.

Physiology: contractions of striated muscles.

Biochemistry: collagen, elastin.

Radiation diagnostics: the optimal method of radiation examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)

Ticket 6

A patient was admitted to the clinic with complaints of pain when chewing. **Questions:**

Anatomy:describe the structure, and biomechanics of the temporomandibular joint.

Histology: describe the structure of the skin layers

Physiology: work and fatigue of the muscles of the basement membranes

Biochemistry: cstructural organization of the intercellular matrix and basement membranes.

Radiation diagnostics: choose the poptimal method of radiation examination and patient placement for this study (X-ray, ultrasound, CT, MRI)

Ticket 7

During the examination of the victim, as a result of the injury to the anterior neck area, it was noted that the carotid triangle zone was affected.

Questions:

Anatomy: describe the structure of the neck triangles.

Histology: describe the structure of "thick" skin

Physiology: the mechanism of muscle contractions

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Biochemistry: Characterize the chemical composition of muscle tissue.

Radiation diagnostics: The optimal method of radiological examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI) is provided in the laboratory

Ticket 8

The patient complains of pain in the temporal region when opening the mouth and chewing. **Ouestions:**

Anatomy: Name the chewing muscles and their functions.

Histology: describe the histopreparation section of the tongue.

Physiology: atrophy of muscles

Biochemistry: 6muscle breakdown. Sarcoplasmic and myofibrillary proteins.

Radiation diagnostics: The optimal method of radiological examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)is provided in the laboratory

Ticket 9

The patient has a sprain of the superficial muscles of the back.

Ouestions:

Anatomy: Name the superficial muscles of the back and their functions.

Histology: principles of classification of connective tissues.

Physiology: the mechanism of muscle contraction

Biochemistry: calculate regulatory proteins of striated muscle tissue and their function.

Radiation diagnostics: the optimal method of radiation examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)

Ticket 10

The external and internal intercostal muscles were damaged in a rib fracture with displacement of their fragments.

Questions:

Anatomy: describe the chest muscles and their functions

Histology: describe the structure of the "thin" skin

Physiology: theides of muscle contraction

Biochemistry: varieties of muscle tissue (striated,

cardiac, smooth), composition features.

Radiation diagnostics: The optimal method of radiological examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)is provided in the laboratory

Ticket 11

The patient was diagnosed with an inguinal hernia.

Questions:

Anatomy: describe the walls of the inguinal canal and its contents

Histology: Describe loose fibrous connective tissue.

Physiology: skin receptors

Biochemistry: explain the biochemical reactions of ATP resynthesis in muscle tissue.

Radiation diagnostics: The optimal method of radiological examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI) is provided in the laboratory

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Ticket 12

The patient has a sprain of the superficial muscles of the back.

Questions:

Anatomy: describe the superficial group of back muscles.

Histology: Describe dense fibrous connective tissue.

Physiology: types of muscle contractions

Biochemistry: relaxation of muscle tissue.

Radiation diagnostics: The optimal method of radiological examination and patient placement for performing this study (X-ray, ultrasound, CT, MRI)is provided in the laboratory

Ticket 13

As a result of a car accident, the patient's hip joint was damaged.

Questions:

Anatomy: describe the structure and biomechanics of the hip joint.

Histology: describe the structure of the cartilage tissue.

Physiology: muscle hypertrophy

Biochemistry: bone tissue enzymes.

X-ray diagnostics: the optimal method of X-ray examination and patient placement for this study (X-ray, ultrasound, CT, MRI) properties of striated muscles