BOGOMOLETS NATIONAL MEDICAL UNIVERSITY

Department of human anatomy

GUIDELINES

Academic discipline	HUMAN ANATOMY
Module №	1
Content module №	2
The theme of the lesson	**The anatomical nomenclature. Axes and planes of the body. Common features of vertebrae. Cervical, thoracic, lumbar vertebrae.**
Course	I
The number of hours	3

Kyiv 2017

1. Specific objectives.

As a result of the classes a student should know and be able to:

1.1.Determine main anatomical planes and axis of the body, their practical value.

1.2.Demonstrate on the skeleton axes and planes.

1.3.Name and conduct topographical imaginary line on the body of man.

1.4.Name basic anatomical terms that are often used.

1.5. Identify the main functions of the skeleton.

1.6. Classify bones.

1.7. Determine the overall body plan bones.

1.8. Define the term "bone, as a body," disclose the content of this concept.

1.9. Determine the general laws of the structure of the vertebrae.

1.10.Determine and demonstrate vertebrae cervical, thoracic and lumbar departments.

1.11. Demonstrate and call the characteristics of the structure of the neck, thoracic and lumbar vertebrae.

2. Basic training level.

Before classes a student should know and be able to:

2.1. Apply knowledge of basic provisions lecture on "The bones and their connection. "

2.2. Classify bone (in structure, form and development).

2.3. Determine the overall body plan long and short, flat, spongy and tubular, mixed, pneumatic, atypical bone.

2.4.Determine anatomical planes of the human body and anatomical terms to indicate the location of the bones and their parts.

2.5. Demonstrate divisions in preparation spine and vertebrae call the number that form them.

2.6.Determine basic functions of the spine, and their clinical significance.

3. Organization of educational content material.

Teaching material is described in a logical sequence with using of anatomical preparations, involving structural logic, tables, figures that reflect the content of the main topics of practical lessons.

4. The content of the material.

4.1. The planes of the body of their determination; basic anatomical terms used in relation to them:

- Plana frontalia – frontal plane;
- Plana horizontalia – horizontal plane;
- Plana sagittalia – sagital plane;
- Planum medianum – median palne;
- Plana paramediana – paramedian plane;

Verticalis	Vertical
Dexter	Right
Sinister	Left
Intermedius	Intermedium
Medius	Medium
Medialis	Medial
Lateralis	Lateral
Anterior	Anterior
Posterior	Posterior
Ventralis	Ventral
Dorsalis	Dorsal
Superior	Superior
Inferior	Inferior
Cranialis	Cranial
Caudalis	Caudal
Internus	Internal
Externus	External
Superficialis	Superficial
Profundus	Profundus
Proximalis	Proximal
Distalis	Distal
Centralis	Central

4.2. Анатомічні осі та рухи навколо них.

Frontal axe (axis frontalis)	Flexion (flexio), extension (extensio)
Sagittal axe (axis sagittalis)	Adduction (adductio), abduction (abductio)
Vertical axe (axis verticalis)	Rotation (rotatio)

4.3.Основні лінії тіла.

Linea mediana anterior	Anterior midline
Linea parasternalis	Parasternal line
Linea mediaclavicularis	Midclavicular line
Linea mammilaris	Mammilary line
Linea axillaris anterior	Anterior axillary line
Linea axillaris media	Medial axillary line
Linea mediana posterior	Posterior median line
Linea scapularis	Scapular line
Linea paravertebralis	Paravertebral line
Linea mediana posterior	Posterior median line

4.4. Класифікація кісток.

Os longum	Long bone
Os breve	Short bone
Os planum	Flat bone
Os irregulare	Atypical bone
Os pneumaticum	Pneumatic bone
Os sesamoideum	Sesame-like bone
Primarium	Primary
Secundarium	Secondary

4.5. Vertebral column (spine) (columna vertebralis) as the most important part of the axial skeleton of man, is divided into sections:

- Cervical (consists of 7 cervical vertebrae)

- Chest (consists of 12 thoracic vertebrae)

- Lumbar (consists of 5 lumbar vertebrae)

- Sacral (consisting of 5 irrigated in the adult sacral vertebrae)

- Coccygeal (consisting of 3-5 irrigated in the adult rudimentary coccygeal vertebrae)

During the study of individual vertebrae stick to this plan:

1. Name of the bone (Ukrainian and Latin).

2. The ratio vertebra to a department of the spinal column.

3. Targeting vertebra in the spine with the definition of right or left parts (for the pair).

4. Name and show the main parts of the vertebral column. Show anatomical structures that differentiate them.

5. Describe the structure of each part (anatomical contour elements on surfaces, holes, grooves, channels.

6. Classification of the vertebral bones (the development, structure).

7. Describe the possible defects of development.

General features of vertebrae:

Corpus vertebrae	The body of the vertebra
Arcus vertebrae	Arch of the vertebra
Pediculus arcus vertebrae	Leg of vertebral arch
Foramen intervertebrale	intervertebral hole
Incisura vertebralis superior	The upper vertebral notch
Incisura vertebralis inferior	The lower vertebral notch
Foramen vertebrale	Vertebral hole
Processus spinosus	Spinous process
Processus transversus	The transverse process
Processus articularis superior; Zygapophysis superior	Superior articular process; Upper duhoapofiz
Facies articularis superior	The upper articular surface
Processus articularis inferior; Zygapophysis inferior	Lower articular process; Lower duhoapofiz

Facies articularis inferior	The lower articular surface

Atlas [C I]	Atlas [C I], the first cervical vertebra
Massa lateralis atlantis	Lateral mass of Atlas
Facies articularis superior	The upper articular surface
Facies articularis inferior	The lower articular surface
Arcus anterior atlantis	The forward curve of Atlas
Fovea dentis	Pit of the tooth
Tuberculum anterius	Front mound
Arcus posterior atlantis	The back arch of Atlas
Sulcus arteriae vertebralis	Furrow vertebral artery
Tuberculum posterius	Rear bump

Axis [C II]	Axial vertebra [C II], the second cervical vertebra
Dens axis	Tooth axial vertebra
Apex dentis	The top of the tooth
Facies articularis anterior	Anterior articular surface
Facies articularis posterior	Rear articular surface

Vertebra prominens [C VII]	**Projecting vertebra [C VII]**

- The longest and thickened bearded process.
- Not forked spinous process.
- There is no front and back bumps on the transverse processes.
- Can be missing transverse hole in the transverse processes.

The thoracic vertebrae are connected to the ribs that causes the features of their structure:

Vertebrae thoracicae [T I - T	**The thoracic vertebrae [T I - T XII]**

XII]	
Fovea costalis superior	The top rib hole
Fovea costalis inferior	The lower rib hole
Fovea costalis processus transversi	Rib hole cross process

- - Articular processes are located in the frontal plane.
- - Neural processes tilted down
- Atypical thoracic vertebra And, X, XI, XII.
- - The body of the first thoracic vertebra is a hole for the entire first rib and head to head semi-hole for the second rib.
- - The body X thoracic vertebra is only for the upper semi-hole for the X head edge.
- - The bodies XI, XII thoracic vertebrae is a hole for whole heads XI, XII, on the edge of the transverse processes are no holes.

Vertebrae lumbales [L I-L V]	**Lumbar vertebrae [L I-L V]**
Processus accessorius	Additional process
Processus mamillaris	mastoid process

- The bodies of the lumbar vertebrae are the most massive.

- Vertebral hole is large triangular shape.

- Transverse processes are located in the frontal plane at their base an additional process.

- Neural processes are short, flat, them end stovsheni directed back.

- Articular surface for articular processes located in the plane of the boom, with papillary process.

5. Methods of educational process on a practical lesson.

5.1. Preparatory stage.

5.1.1. In order to motivate students' educational activity highlights the role of the bones and joints in the locomotor apparatus that performs movement in space and provides a change in body position as one of the main functions. Since bone is formed skeleton that performs multiple functions. The bones of the spine provide resistance to body movement (there are levers that lead to muscle movement), limiting the cavity (spinal canal), protecting the spinal cord; involved in mineral metabolism, deposited calcium, phosphorus, etc.,

vitamins A, D, C; contains red marrow.
Determining the structural features of the vertebrae enables future doctors characterize normal position of each vertebra in a single functioning system spinal column, characterized by structural features and functions of the intervertebral joints and other connections, to explain the place of connection and fixing the place of attachment of muscles, providing a normal movements in the spine. Through holes and channels that form the vertebrae undergo spinal nerves and blood vessels and forming connections with neighboring cavities (conditions for the spread of inflammation, the appearance of paralysis and others. Fibers in compression of spinal nerves).
The study of the structural features of individual vertebrae, understanding the functions of these bodies is important for physicians of different specialties, but especially surgeons, neurosurgeons, trauma, neurologists, neonatologists, physicians. Students meet specific goals and plan of occupation. A control entry-level training of students.
5.1.2. Students are introduced to specific objectives and lesson plan materials on "Methodological guidelines (p.1, p.3)"
5.1.3. Implementation of standardized control entry-level training of students using tests and questions.

5.2. The main stage

5.2.1. Practical work of students. We discuss the basic laws of the vertebrae and their position in the spine against major planes defines the basic anatomical terms. Classified bone. In preparation, the diffraction patterns determined location in the spine individual vertebrae. Describe the details of the structure (the main part surfaces, edges, angles, certain anatomical lesions -borozny, holes, pits, promotion, channels, ridges, cutting, processes, etc.). Vertebrae cervical, thoracic, lumbar. Determine the functional and clinical significance of the spinal canal, where they exit the spinal nerves, passing vessels. We analyze which parts of vertebrae involved in the formation of the spinal canal, intervertebral holes. Identify holes and grooves that contain blood vessels and nerves. The features of the structure of typical and atypical vertebrae. Analyzes the place of attachment of muscles. Are explained which parts of the vertebrae form the intervertebral joints. Analyzed the possible movements against major axes based on the spatial arrangement of joint poverhen on articular processes of the vertebrae. Skosteninnya described. The reason mobile communication spine to the skull. In order to form new knowledge and skills, practical skills according to specific objectives classes students have to show their own teacher all anatomical formations each vertebra. Oral examination accompanied by a demonstration of anatomical structures in the skeleton, the body, and solving situational problems and tests that best approximates studendiv to the

clinical situation. The answers are discussed and students and teachers.

5.3. The final stage

A standardized final control of knowledge. We estimate the current success of each student during classes, score is assigned to the log of visits and success. Estimates are announced and elder groups simultaneously puts them in the roll of the success of attendance of students and their teacher certifying his signature.

Students are informed about the topic of the next classes and instructional techniques to prepare for it.

6. Attachments. Means of control:

- Questions to control the entry level of students' knowledge.

- Questions to control the final level of training.

- Tests of format (STEP 1).

- Practical tasks on illustrations in the manual "Human Anatomy"

Informational resourses

- **http://nmu.ua/zagalni-vidomosti/kafedri/kafedra-anatomyy-cheloveka/informatsiya-dlya-studentiv-6/**
- **www.anatom.ua**