

BOGOMOLETS NATIONAL MEDICAL UNIVERSITY

Department of human anatomy

**GUIDELINES**

|                            |                       |
|----------------------------|-----------------------|
| <i>Academic discipline</i> | HUMAN ANATOMY         |
| Module №                   | 1                     |
| Content module №           | 2                     |
| The theme of the lesson    | Bones of facial skull |
| Course                     | 1                     |
| The number of hours        | 3                     |

Kyiv 2017

**Specific goals:**

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

- 1.1. To classify the facial bones of the skull.
  - 1.2. To determine the drug and the location in the skull radiograph of the upper and lower jaw, cheekbones, nose, palate, sublingual, lacrimal bone, the inferior turbinate, Blades.
  - 1.3. Describe the details of the structure (parts, surfaces, edges, angles, certain anatomical lesions) of the upper and lower jaws, cheekbones, nose, palate, sublingual, lacrimal bone, the inferior turbinate, Blades.
  - 1.4. To analyze the place of attachment on the bones of facial skull facial and masticatory muscles.
  - 1.5. Identify the structural features of the collar of the mandible and maxilla alveolar bone.
  - 1.6. Explain that bones and parts form a bony palate.
  - 1.7. To analyze which parts of the facial skull bones are involved in the formation of the walls of the eye socket, nasal bone, nasal septum.
  - 1.8. Identify holes and grooves on the bones of facial skull that contains blood vessels and nerves.
2. Basic level of preparation.

Before classes a student should know and be able to:

- 2.1. Identify the anatomical planes of the human body to indicate the location of the bones of facial skull about these planes.
- 2.2. Classify bone (in structure and form).
- 2.3. To determine the structure of long and short, flat, spongy and tubular, mixed, pneumatic, atypical bone.
- 2.4. To demonstrate the cranial bones, parts and details of the structure.

**C. Organization of educational content material.**

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

**4. The content of the material.****The upper jaw (maxilla)**

Pair bone. Part: Body of maxilla (corpus maxillae) and processes (frontal (processus frontalis), Zygomatic (processus zygomaticus), palatal - processus palatinus, alveolar - processus alveolaris)

The body surface of the upper jaw: front (facies anterior), orbital (facies orbitalis), Infratemporal (facies infratemporalis), nasal surface (facies nasalis)

Anatomical formations of the body:

Infraorbital edge (margo infraorbitalis)

Infraorbital hole (foramen infraorbitale)

Iklova fossa (fossa canina)

Nasal tenderloin (incisura nasalis)

The front nose beard (spina nasalis anterior)

Cell protrusion (juga alveolaria)

Infraorbital channel (canalis infraorbitalis)

Infraorbital sulcus (sulcus infraorbitalis)  
 Hill maxilla (tuber maxillae)  
 Cell openings (foramina alveolaria)  
 Great palatine sulcus (sulcus palatinus major)  
 Lacrimal sulcus (sulcus lacrimalis)  
 Lacrimal edge (margo lacrimalis)  
 Maxillary hiatus (hiatus maxillaris)  
 Maxillary sinus (sinus maxillaris)  
 Anatomical lesions on spikes:  
 Front lacrimal crest (crista lacrimalis anterior)  
 Lacrimal notch (incisura lacrimalis)  
 Lacrimal sulcus (sulcus lacrimalis)  
 Ethmoidal crest (crista ethmoidalis)  
 Nasal crest (crista nasalis)  
 Incisive canal (canalis incisivus)  
 Palatine grooves (sulci palatini)  
 Alveolar arch (arcus alveolaris)  
 Dental cells (alveoli dentales)  
 Inter-alveolar partitions (septa interalveolaria)  
 Inter-alveolar partitions (septa interradicularia)  
 Cell protrusion (juga alveolaria)  
 Incisive hole (foramen incisivum)  
 The lower jaw (mandibula)

**Parts:**

1. The body of the mandible (surface: external, internal)
  - The base of the mandible (basis mandibulae)
  - Mental protuberantia (protuberantia mentalis)
  - Mental tubercle (tuberculum mentale)
  - Mental hole (foramen mentale)
  - Digastric fossa (fossa digastrica)
  - Upper mental spine (spina mentalis superior)
  - Oral sublingual line (linea mylohyoidea)
  - Sublingual fossa (fovea sublingualis)
  - Submandibular fossa (fovea submandibularis)
  - Alveolar part (pars alveolaris)
  - Alveolar arch (arcus alveolaris)
  - Dental cells (alveoli dentales)
  - Inter-alveolar partitions (septa interalveolaria)
  - Inter-alveolar partitions (septa interradicularia)
  - Cell protrusion (juga alveolaria)
  - Retromolar fossa (fossa retromolaris)
2. The branch of the mandible (ramus mandibulae)
  - The opening of the mandible (foramen mandibulae)
  - Mandibular canal (canalis mandibulae)

Oral sublingual sulcus (sulcus mylohyoideus)

Vertical appendage (processus coronoideus)

Condylar process (processus condylaris)

The head of the mandible (caput mandibulae)

The neck of the mandible (collum mandibulae)

Pterygoid fossa (fovea pterygoidea)

The angle of the mandible (angulus mandibulae)

Chewing tuberosity (tuberositas masseterica)

Palatine bone (os palatinum)

Parts: - perpendicular to the plate (lamina perpendicularis)

- Horizontal plate (lamina horizontalis)

Perpendicular plate (lamina perpendicularis):

Surface:

- Nasal surface (facies nasalis) - involved in the formation of bone nasal cavity

- Maxillary surface (facies maxillaris) - participates in the wing-palatine fossa

Processes:

- Pyramidal appendage (processus pyramidalis) - participates in the pterygoid fossa

- Orbital process (processus orbitalis) - participates in the bottom wall of the eye socket, partially covering the lattice cell bone.

- Wedge-shaped appendage (processus sphenoidalis) - attached to the lower surface of the sphenoid bone

Anatomical formations and connections:

- Wedge-palatine tenderloin (incisura sphenopalatina) - together with the body of sphenoid bone forms the foramen sphenopalatinum

- Great palatine sulcus (sulcus palatinus major)

- Great palatine sulcus (sulcus palatinus major) - together with similar grooves maxilla and pterygoid bone sphenoid bone forming large palatal canal, ending a great palate opening on the top side of the mouth

- Minor palate channels (canales palatine minores)

Horizontal plate (lamina horizontalis):

Surfaces: - nasal surface (facies nasalis) - participates in the bottom wall of the nasal cavity

- Palatine surface (facies palatina) - participates in the upper wall of the mouth

**Zygomatic bone** (os zygomaticum)

Surface: - Side surface (facies lateralis) - forms the outline of the face has cheekbones, facial hole (foramen zygomatico-faciale) for the same nerve.

- Temporal surface (facies temporalis) - participates in the front wall of the infratemporal fossa, and there is zygomatic-temporal hole (foramen zygomaticotemporale) for the same nerve.

- Orbital surface (facies orbitalis) - forms a bottom and lateral eye socket

walls, forming infraorbital edge,

Processes: - temporal process (processus temporalis)

- Frontal appendage (processus frontalis) - connects to the shoot of zygomatic frontal bone and a large wing of sphenoid bone

Inferior turbinate (concha nasalis inferior)

Pair bone, bone forms a side wall of the nasal cavity, middle and bottom separates the nasal passages.

Part 1. Body.

Surfaces: - side

- Medial (convex)

Edges: - upper

- Lower (free)

2. Processes: - Lacrimal (processus lacrimalis) - reaches the lacrimal bone

- Ethmoidal (processus ethmoidalis)

- Maxillary (processus maxillaris) - covers the maxillary hiatus

Lacrimal bone (os lacrimale)

Surfaces: - side, behind the borders of the orbital plate of the ethmoidal bone is back Lacrimal crest (crista lacrimalis posterior), Lacrimal hook (hamulus lacrimalis), lacrimal sulcus (sulcus lacrimalis) - with the same groove windshield appendix maxilla forms a hole lacrimal sac which begins from nasal-Lacrimal canal (opening in the lower nasal passage)

- Medial (front covers labyrinth lattice cell bone)

Surfaces lacrimal bone behind the border of the orbital bone plate lattice, in front of the frontal offshoot of the upper jaw, top borders on the orbital surface of the frontal bone.

Vomer

Azygos bone plate, which is located in the nasal cavity boom in plane forms a bony septum (with perpendicular plate lattice bone), fixes the horizontal plate of palatine bone and maxilla to the nasal crest

Nasal bone (os nasale)

Even. The upper edge is connected to the frontal bone and the lower edge above limits pear-shaped hole.

Hyoid bone (os hyoideum)

Odd. It has a body (corpus ossis hyoidei), doubles great horn (cornu majus) and doubles the little horn (cornu minus).

## **5. The method of educational process on a practical level.**

### **5.1. Preparatory stage.**

In order to form the motivation for targeted training activities emphasizes the importance of lesson topics for further study at our department and other departments of the university and for professional activities of physicians of any specialty, but first of all trauma surgeons in various fields, anesthesiologists, neurologists.

Students meet specific goals and plan of occupation. A standardized control the entry level of students' knowledge.

### **5.2. The main stage**

The main phase involves study at a poster (as preparations, models, drawings, photographs) using textbooks and under the supervision of the structural features of the facial bones of the skull.

During the study of individual bones viscerocranium stick to this plan:

- Name of the bone (Ukrainian and Latin).
- Location of the bones in the skull.
- The orientation of the bones in the skull to the definition of the right or left (for the pair).
- Name and show the main part of the bone. Show anatomical structures that differentiate them (edges, corners).
- Describe the structure of each part (anatomical contour elements on surfaces, holes, grooves, channels, cavities (in the pneumatic bones)).

### **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 the signature and records in an electronic journal.

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

## **6. Applications:**

Questions to control the entry level of students' knowledge.

- Questions to control the final level of training.
- Formatted tests (STEP 1).
- Practical tasks and illustrations in the manual "Human Anatomy"

**Issues to monitor students' knowledge base**

1. Identify the anatomical planes of the body.
2. Classify the bone (in structure and form).
3. Name and demonstrate the cranial bones and their parts.

**Questions to control the final level of training**

1. Name and show separately even and odd facial bones of the skull.
2. Name and show part of the upper jaw.
3. Name and show the body surface of the upper jaw.
4. Describe and demonstrate orbital lesions of the body surface of the upper jaw.
5. Describe and show lesions on the anterior surface of the body of the upper jaw.
7. Name and show the processes of the upper jaw. Describe and show creations of alveolar bone in the upper jaw.
8. Describe and show palatine process of maxilla. Which department of palate bone does it form?
9. Name and show parts of the mandible. Describe the internal surface of the body of the mandible.
10. Please describe and show the outer surface of the body of mandible and its collar part.
11. Describe and demonstrate branch of the mandible, and the surface processes.
12. Describe and demonstrate palatal bone and details of its structure. Demonstrate its position in the skull.
13. Describe and demonstrate the zygomatic bone, the surface of the body spines holes. Show it to the skull.
14. Describe and demonstrate the structure of the inferior turbinate. Show it on the skull.
15. Describe and demonstrate lacrimal bone structure and show it on the skull.
16. Describe and demonstrate the structure of blades. Show it on the skull.
17. Describe the structure and show the hyoid bone. Show it on the skull.