

Lab Hand Out 3 - Bone and Axial Skeleton

Bones of the Skull

1. Cranial Bones (8)

- A. Parietal Bone
 - 1. Temporal line of parietal bone
- A. Frontal Bone
 - 1. Superciliary Arch
 - 2. Supraorbital notch (supraorbital foramen)
 - 3. Supraorbital margin
 - 4. Squamous part of frontal bone
 - i. Glabella
- A. Ethmoid Bone
 - 1. Crista Galli
 - 2. Cribriform Plate
 - 3. Superior Nasal Concha
 - 4. Middle Nasal Concha
 - 5. Perpendicular plate
- A. Occipital Bone
 - 1. Occipital Condyle
 - 2. External Occipital Crest
 - 3. External Occipital Protuberance
 - 4. Superior Nuchal line
 - 5. Inferior Nuchal Line
 - 6. Groove for transverse dural sinus
- A. Sphenoid Bone
 - 1. Sella Turcica
 - a. Hypophyseal fossa
 - b. Dorsum sellae
 - 1. Greater Wings
 - 2. Lesser Wings
 - 3. Pterygoid Processes
- A. Temporal Bone
 - 1. External Acoustic Meatus
 - 2. Internal Acoustic Meatus
 - 3. Mandibular Fossa of temporal bone
 - 4. Mastoid Process
 - 5. Styloid Process
 - 6. Mastoid incisures
 - 7. Zygomatic Process of temporal bone
 - 8. Petrous Part
 - 9. Groove for sigmoid sinus

Foramen/openings in skull

- A. Olfactory/Cribriform Foramina
- B. Optic foramen & optic Canal
- C. Foramen ovale
- D. Foramen spinosum
- E. Foramen rotundum
- F. Foramen Lacerum
- G. Carotid Canal
- H. Foramen Magnum
- I. Hypoglossal canal
- J. Jugular Foramen
- K. Mandibular Foramen
- L. Mental Foramen
- M. Stylomastoid Foramen
- N. Superior orbital fissure
- O. Inferior Orbital Fissure
- P. Infraorbital Foramen
- Q. Incisive fossa (foramen)
- R. Greater palatine foramen

2. Facial Bones of Skull (14)

- 2. Inferior nasal Concha
- 3. Nasal Bone
- 4. Vomer Bone
- 5. Palatine
 - 1. Horizontal Plate (lamina) of palatine bone
 - i. Posterior nasal spine
- 6. Lacrimal Bone
 - 1. Lacrimal Fossa
- 7. Maxilla
 - 1. Alveolar Margins of the Maxilla
 - 2. Alveolar Sockets
 - 3. Palatine process of maxilla
- 8. Mandible
 - 1. Alveolar Margins of the Mandible
 - 2. Mandibular symphysis
 - 3. Mandibular Body
 - 4. Mandibular Angle
 - 5. Mandibular Ramus
 - 6. Mandibular Condyle
 - 7. Coronoid Process
 - 8. Mandibular Notch
 - 9. Mental protuberance
 - 10. Mental tubercle
- 9. Zygomatic Bone
 - 1. Temporal Process of zygomatic bone
- 10. Orbital surfaces
- 11. Orbital surface of the frontal bone
- 12. Orbital surface of the sphenoid bone
- 13. Orbital surface of the ethmoid bone
- 14. Orbital surface of the maxilla bone
- 15. Orbital surface of the zygomatic bone

Sinuses: mucous-lined air cavities

- 2. Frontal sinus
- 3. Ethmoid sinus
- 4. Sphenoid sinus
- 5. Maxillary sinus

Cranial fossae

- 7. Anterior Cranial Fossa
- 8. Posterior Cranial Fossa
- 9. Middle Cranial Fossa

Processes of the Skull

- 11. Zygomatic process of the maxilla bone
- 12. Zygomatic process of the frontal bone
- 13. Zygomatic process of the temporal bone
- 14. Temporal process of the zygomatic bone
- 15. Frontal process of the maxilla bone
- 16. Frontal process of the zygomatic bone

3. Fetal Skull

- A. Anterior Fontanel
- B. Posterior Fontanel
- C. Sphenoid Fontanel
- D. Mastoid Fontanel

Sutures

- A. Coronal Suture
- B. Lambdoid Suture
- C. Sagittal Suture
- D. Squamous Suture

5. Axial Skeleton Bones

- 4. Hyoid Bone
 - A. Body
 - B. Greater Horn
 - C. Lesser Horn
- 5. Ribs
- 6. Classification: True Ribs & false ribs
- 7. Intercostal Space
 - A. Shaft
 - B. Costal Angle
 - C. Neck of rib
 - D. Head of rib
 - E. Costal Groove
 - F. Tubercle
 - G. Costal Cartilage
- 8. Sternum
 - A. Manubrium
 - 1. Jugular Notch
 - 2. Clavicular Notch
 - A. Body
 - B. Xiphoid Process
 - C. Sternal Angle
 - D. Xiphisternal Joint (Angle)

6. Osteon Model (Haversian System)

- 1. periosteum
- 2. Endosteum
- 3. Sharpev's fibers
- 4. Canaliculi
- 5. Lamellae rings
- 6. Lacuna with osteocyte
- 7. Central (Haversian) Canal
- 8. perforating (Volkmann's) canal

4. Vertebrae

- Intervertebral Foramina
- Intervertebral Disc

General Landmarks (found in the vertebrae)

- 1. Body (Centrum)
- 2. Vertebral arch
 - i. Pedicle
 - ii. Lamina
- 1. Spinous Process
- 2. Superior articulating process & facet
- 3. Inferior articulating process & facet
- 4. Transverse Process
- 5. Vertebral Foramen/canal
- 6. Intervertebral foramen (foramina)

Cervical Vertebrae

- 1. Bifid Spinous Process
- 2. Vertebral Prominence
- 3. Transverse Process
- 4. Transverse Foramina

Atlas

- a. Anterior Arch
- b. Anterior Tubercle
- c. Lateral Masses
 - Superior Articular Facet
 - Inferior Articular Facet
- a. Posterior Arch
- b. Posterior Tubercle

Axis

- a. Body
- b. Dens (Odontoid Process)

Thoracic Vertebrae (T1 - T12)

- i. Transverse costal facet
- ii. Superior costal demifacet
- iii. Inferior costal demifacet

Lumbar Vertebrae (L1 - L5)

Sacrum

- A. Sacral Promontory
- B. Transverse ridges (Lines)
- C. Sacral Foramina
- D. Apex
- E. Ala of sacrum
- F. Auricular Surface
- G. Sacral Canal
- H. Sacral hiatus
- I. Superior Articular Process (of sacrum)
- J. Medial Sacral Crest
- K. Lateral Sacral Crest

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