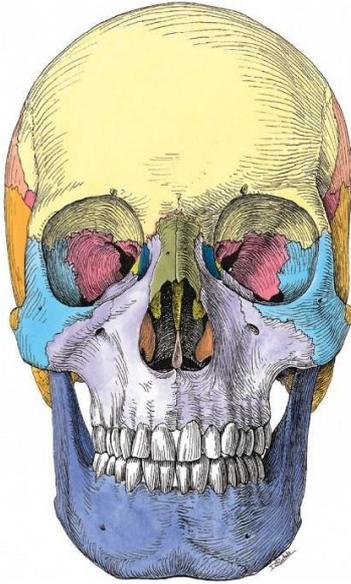


Skull Osteology Checklist



objective

Identify on the skull/cervical vertebrae all the **bones** and begin to identify their features

Identify all the bony features in this checklist

Frontal bone (1)

Supra-orbital foraminae or notches

Frontal sinus (es)

Orbital plates (form the roof of the orbits/floor of anterior cranial fossa)

Coronal suture

The pterion

Ethmoid bone (1)

Crista galli

Cribiform plate (with multiple foraminae)

Superior concha

Middle concha

Ethmoid air cells

Perpendicular plate (along with the vomer forms the bony part of nasal septum)

Sphenoid bone (1)

Greater wing (with foraminae rotundum, ovale & spinosum)

Lesser wing (with optic canals)

Body of sphenoid bone (with pituitary, or hypophysial, fossa & sphenoid sinus)

Superior orbital fissure

Inferior orbital fissure

Right and left medial & lateral pterygoid plates (right & left pterygoid processes)

Pterygoid hamulus (hook) of medial plate

Sphenoid sinus (within the body of the sphenoid)

Spine of the sphenoid bone (bilaterally on inferior aspect of base of skull)

Parietal bones (2)

Coronal & sagittal sutures

The pterion

The temporal lines (for the superior attachment of temporalis muscle & its deep fascia)

Occipital bone (1)

Foramen magnum

Jugular foramen (for internal jugular vein - between this bone and the temporal bone)

Hypoglossal canal

Occipital condyles

External and internal occipital protuberances

Grooves for dural venous sinuses

Nuchal lines

Temporal bones (2)

Internal & external acoustic meatuses

Squamous and petrous parts

Styloid & mastoid processes

Stylomastoid foramen

Glenoid (mandibular) fossa (for TMJ)

Carotid canal (for internal carotid artery – external and internal openings)

Zygomatic process (forms zygomatic arch with the temporal process of the zygomatic bone)

Grooves for middle meningeal arteries

Groove for superior petrosal sinus

Pterion (2)

Thinnest part of the cranium

Frontal, parietal, temporal & sphenoid bones

Groove for middle meningeal artery (internally)

Mandible (1)

Condylar head (head of condylar process)

Condylar neck (neck of condylar process)

Coronoid process

Coronoid (mandibular) notch

Ramus, angle, body & mental process (protuberance)

Alveolar process (includes the sockets for the lower tooth roots)

Mental and mandibular foraminae

Mandibular canal (internal connection between the mental and mandibular foraminae)

Lingula

Mental spines (genial tubercles)

Maxillae (2: *singular = the maxilla*)

Palatine process (forms anterior part of hard palate: roof of mouth/floor of nasal cavity)

Incisive foramen (midline anteriorly)

Alveolar process (includes the sockets for the upper tooth roots)

Maxillary tuberosity (most distal part of alveolar process - distal to last tooth)

Floor of the orbit (orbital surface)

Infraorbital canal (or groove) and foramen

Opening for nasolacrimal duct on medial wall of orbit

Maxillary sinus (clinically called the “antrum”)

Zygomatic buttress (process that articulates with the zygoma)

Zygomatic bones (2) **[each clinically called the “zygoma”]**

Lateral wall of the orbit
Floor of the orbit
Zygomatic arch
Zygomatico-facial foraminae
Zygomatico-temporal foraminae (on posterior aspect of zygoma)

Zygomatic arch (2)

Zygomatic process of temporal bone
Temporal process of zygoma
Articular tubercle (prevents dislocation of TMJ)

Nasal septum (1: 2 bones & cartilage)

Perpendicular plate of ethmoid + the vomer

Nasal bones (2)

Articulations with each other, frontal bone and maxillae

Palatine bones (2)

Posterior part of the hard palate (roof of mouth/floor of nasal cavity)
Horizontal plate
Perpendicular plate
Pyramidal process
Greater palatine foramina
Lesser palatine foramina

Inferior conchae (2)

Articulate with maxillae in lateral walls of nasal cavities

Auditory ossicles (3)

Malleus, incus, stapes

Bones of the Orbits

Roof - orbital plates of the frontal bone
Floor – orbital surface of the maxilla; palatine bone
Medial wall - lacrimal bone; orbital plate of the ethmoid bone
Lateral wall – zygoma; lesser wing of sphenoid bone
Orbital rim – bony margin of the orbit

Hyoid bone (1)

Unusual in that it does not articulate with any other bones (attachment for skeletal muscle & ligament and helps maintain the patency of the airway)

Cervical Vertebrae (7)

Body (except C1 vertebra)
Spinous process (except C1 vertebra)
Transverse processes
Transverse foraminae (foraminae for vertebral vessels)
Vertebral foramen (canal)
Superior and inferior articular facets on superior and inferior articular processes
Intervertebral discs (except between C1-C2)

The atlas (C1 vertebra)

- Attachment points (approximate) for the transverse ligament of the atlas (holds odontoid process in place)
- superior articular facets for the occipital condyles (atlanto-occipital joints)
- inferior articular facets for the superior articular facets of the atlas (atlanto-axial joints)
- anterior arch (no body) for articulation with the odontoid process of the axis
- posterior arch (no spinous process)

The axis (C2 vertebra)

- The odontoid process (dens, peg)

- superior articular facets for the inferior articular facets of the atlas (atlanto-axial joints)

The Vertebra Prominens (C7 vertebra)

- long, palpable spinous process

Joins (multiple)

Craniovertebral (atlanto-occipital & atlanto-axial)

Temporomandibular (right & left TMJs)

Coronal, lambdoid & sagittal sutures

Zygomatico-frontal suture

Zygomatico-maxillary suture

Zygomatico-temporal suture

Fronto-maxillary suture

Median palatine suture

Fossae

Anterior, middle & posterior cranial fossae

Temporal fossa

Infratemporal fossa

Pterygopalatine fossa

Foraminae

Foramen Magnum

Ovale

Rotundum

Spinosum

Lacerum

Jugular foramen

Stylomastoid...

Incisive ...

Mandibular...

Mental...

Anterior and posterior ethmoidal...

Sphenopalatine...

Greater palatine...

Lesser palatine...

Infraorbital ...

Supraorbital ...

Canals

Carotid

Hypoglossal

Nasolacrimal

Pterygoid

Palatine canal

Meatuses

External & internal acoustic meatuses

Sphenoethmoidal meatus

Superior, middle and inferior meatuses of the lateral wall of the nasal cavity