

Axial Skeleton

Central part of skeleton

Skull (22 bones)

Cranial (8 bones)

1 Frontal bone (forehead)

2 Parietal bones (top back sides)

2 Temporal bones (temples)

Zygomatic process articulates with zygomatic (cheek) bone
forming the zygomatic arch

Mandibular fossa is a socket for mandible along with articular tubercle (anterior to fossa)
forms the TMJ (temporomandibular joint)

Auditory meatus (ear hole) below it the mastoid process (attaches to neck muscles)

Styloid process projects from bottom of bone attachment point of tongue and neck

Occipital bone (lower back of skull)

2 Occipital Condyle for oval convex surfaces that articulate with atlas (atlanto-occipital joint)

Sphenoid bone (wings just in front of temples below frontal bone)

Forms part of cranium floor

Holds together and articulates with all other cranial bones

Ethmoid bone (back of nasal cavity)

Facial (14 bones)

2 Nasal bones (bridge of nose)

2 Maxillae (upper jaw)

Contains palatine process = 3/4 of bony palate (roof of mouth)

2 Zygomatic bones (cheeks)

Mandible (jaw)

2 Lacrimal bones (small bones teardrops exit from in eye corners)

2 Palatine bones (lateral wall of nasal cavity and remaining part of bony palate)

2 Inferior nasal conchae (below Ethmoid)

Vomer (part of septum)

Hyoid Bone

Suspended from styloid process by ligaments and muscles

Vertebrae

Cervical Curve

7 Cervical Vertebrae (1 = Atlas, 2 = Axis, 3-5 "Regular" Cervical Vertebrae)

Thoracic Curve

12 Thoracic

Lumbar Curve

5 Lumbar

Pelvic Curve

4-5 Fused Sacral

3-5 Fused Coccygeal

Intervertebral Disk between each vertebrae

Secured by interlocking process and ligaments

Structure (back to front):

Spinous Process

Lamina

Transverse Process - Articular Facet - Vertebral Foramen - Articular Facet - Transverse Process

Pedicle - Vertebral Foramen - Pedicle

Body

Key differences between vertebrae type:

Cervical - Transverse Foramen (holes by the transverse process)

Thoracic - Facets for articulation with ribs (vertebrocostal joints)

Lumbar - Broad flat spinous process for muscle attachment

Atlas is effectively fused to skull

2 Facets to articulate against Occipital Condyle

Anterior arch where dens of axis articulates

Axis

posses the Dens - pivot for lateral rotation of skull

Sacrum and Coccyx - Convex Shape

Curve Problems:

Kyphosis - In Thoracic Segment - Hunchback

Lordosis - Lumbar Section - Swayback - Overly pronounced curve

Scoliosis - Sideway/Lateral deviation

Lumbar spine stenosis - spinal canal narrowing

Rib Cage

Posterior Part - Thoracic Vertebral Column (T1 - T12)

Sides - Ribs 12

Sternum - 3 parts (top to bottom)

Manubrium

Top - suprasternal notch

Sides - Clavicular notches for sternoclavicular joint

Articulates with Ribs 1 - 2 - Sternocostal joints

Body

Articulates with Ribs 2 - 10

Xiphoid Process

Ribs - 12

7 - True Ribs - Attached to sternum

3 - False Ribs - Attached at distance through costal cartilage

2 - Floating Ribs

1-10 attached to sternum by costal cartilage

At Intercostal spaces there are Intercostal muscles

Breathing (80% from diaphragm 20% from here)

Internal Intercostal muscles

Expiration - contract making rib cage smaller

External Intercostal muscles

Inspiration - contract making rib cage larger

C4-C5 nerve connects to diaphragm