

Chapter 7: Skeletal System: Gross Anatomy

I. General Considerations

- A. How many bones in an average adult skeleton? _____
- B. Anatomic features of bones are based on _____

II. Axial Skeleton

A. Skull

1. Functionally the skull or cranium:
 - a. Protects the _____
 - b. Supports the organs of _____, _____, _____, & _____
 - c. Foundation for structures that take in _____, _____, & _____
2. Superior View of the Skull
 - a. List the bones visible from this view:
 1. _____
 2. _____
 3. _____
 - b. Where is the sagittal suture? _____
 - c. Where is the coronal suture? _____
3. Posterior View of the Skull
 - a. The major structures seen from the posterior view are:
 1. _____
 2. _____
 - b. Where is the lambdoid suture? _____
 - c. What are sutural bones? _____
 - d. The external occipital protuberance is the site _____

 1. Where can this be felt? _____
4. Lateral View of the Skull
 - a. A large part of the side of the head is formed by _____
& _____

- b. Where is the squamous suture? _____
- c. The external auditory meatus is a _____
- d. Describe the mastoid process _____
 - 1. This can be felt _____
 - 2. It contains cavities called _____
 - 3. What attaches to the mastoid process? _____
- e. What part of the sphenoid bone is visible in this view? _____
- f. Anterior to the sphenoid is the _____
- g. The bridge across the side of the skull is properly called _____
- h. Anterior and inferior to the zygomatic bone is the _____
- i. The lower jaw is properly called the _____
 - 1. It articulates posteriorly with _____
 - 2. Describe the body of the mandible _____
 - 3. Describe the ramus of the mandible _____
 - a. The condyle articulates with _____
 - b. What attaches to the coronoid process? _____
- j. An alveolar process contains _____

5. Frontal View of the Skull

- a. The major structures seen from the frontal view are:
 - 1. _____
 - 2. _____
 - 3. _____
 - 4. _____
- b. What are the orbits? _____
 - 1. The optic nerve passes through the _____
- c. The nasal septum divides _____
- d. In addition to hyaline cartilage the nasal septum is composed of:
 - 1. The _____ &
 - 2. Perpendicular _____
- e. What are the nasal conchae? _____
 - 1. The superior & middle nasal conchae are part of what bone? _____

2. Functionally the conchae _____

- f. What are paranasal sinuses? _____
1. Functionally the paranasal sinuses:
- Decrease _____ &
 - Act as _____
2. List the four bones containing paranasal sinuses:
- _____
 - _____
 - _____
 - _____
6. Interior View of the Skull
- What is removed to expose the cranial cavity? _____
 - Describe the crista galli & its location: _____
 - What attaches to the crista galli? _____
 - Where is the cribriform plate? _____
 - What passes through the cribriform plate? _____
 - What is the sella turcica? _____
 - What sits in the sella turcica? _____
 - The large hole in the bottom of the skull is called _____
7. Inferior View of the Skull
- What are the occipital condyles? _____
 - Where are they located? _____
 - Blood vessels going to the brain pass through the _____
 - Blood vessels leaving the brain pass through the _____
 - What are the styloid processes? _____
 - They are part of which bone? _____
 - What attaches to the styloid processes? _____
 - What is the function of the mandibular fossa? _____
 - The medial & lateral pterygoid plates are part of which bone? _____
 - What attaches to these plates? _____

- g. The vomer forms what? _____
- h. The floor of the nasal cavity is called _____
1. The anterior two-thirds is formed by _____
 2. The posterior one-third is formed by _____
8. Bones of the Skull
- a. What is the function of the auditory ossicles? _____
 1. They are found inside which bone? _____
 - b. The eight bones that surround and protect the brain form _____
 - c. The 14 bones of facial structures form _____
- B. Hyoid Bone
1. The hyoid bone is attached to the skull by _____
 2. The hyoid bone provides attachment for:
 - a. Some _____ &
 - b. Neck muscles that _____
- C. Vertebral Column
1. List the five regions of the vertebral column and the number of bones in each:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 2. Curves that are concave anteriorly appeared during _____
 3. The convex curve of the cervical region forms _____
 4. The convex curve of the lumbar region forms _____
 5. Intervertebral Disks
 - a. They are composed of _____ & located _____
 - b. Functionally intervertebral disks:
 1. Provide _____ &
 2. Prevent _____

6. General Plan of the Vertebrae

a. List the five major functions of the vertebral column:

1. _____
2. _____
3. _____
4. _____
5. _____

b. What is the body of a vertebra? _____

c. What projects posteriorly from the body? _____

1. Which portion is the pedicle? _____

2. Which portion is the lamina? _____

d. What is the vertebral foramen? _____

e. What is a transverse process? _____

1. Where does it attach to the vertebral arch? _____

f. What is a spinous process? _____

1. Where does it attach to the vertebral arch? _____

g. Functionally the transverse & spinous processes? _____

h. Spinal nerves exit the vertebral column through _____

1. These are formed by notches in the _____

i. What is the function of the superior and inferior articular processes?

1. What is an articular facet? _____

7. Regional Differences in Vertebrae

a. Cervical vertebrae

1. Have very _____, partly _____, & a _____

2. Atlas - first cervical vertebrae

a. Has no _____ & has no _____ but it
does have _____

b. What part of the skull does the atlas articulate with? _____

3. Axis - second cervical vertebrae

a. What is the dens or odontoid process? _____

- b. Thoracic vertebrae
1. Possess _____ which are directed _____ and they have _____
 2. What is the function of the articular facets on the transverse process?

 3. Where does the head of a rib articulate? _____

- c. Lumbar vertebrae
1. Have _____ and _____
 2. The superior articular process faces _____
 3. The inferior articular process faces _____
 - a. When these two articulate it adds _____ to the inferior portion of the vertebral column and limits _____
- d. Sacral vertebrae
1. The five vertebrae are fused into the _____
 2. What forms the alae? _____
 3. What forms the median sacral crest? _____
 4. Why is there a sacral hiatus? _____
 5. What forms the sacral foramina? _____
 6. The sacral promontory is formed by _____
 - a. It is used as a point of reference _____
- e. Coccyx
1. Is composed of how many bones? _____
 2. What is the basic shape of the coccyx? _____
- D. Thoracic Cage
1. Protects _____ and forms _____ that

 2. Ribs and Costal Cartilages
 - a. What is the difference between a "true rib" and a "false rib"? _____

- b. Ribs that do not attach to the sternum are called _____
 - c. The head of a rib articulates with _____
 - d. The tubercle of a rib articulates with _____
 - e. Where is the neck of a rib? _____
 - f. What is the body of a rib? _____
 - g. What is the angle of a rib? _____
3. Sternum
- a. List the three parts of the sternum:
 - 1. _____
 - 2. _____
 - 3. _____
 - b. What is the jugular notch? _____
 - c. What is the sternal angle? _____

III. Appendicular Skeleton

A. Pectoral Girdle and Upper Limb

1. Pectoral Girdle (Shoulder Girdle)
- a. Consists of two _____ of bones that attach _____
 - b. List the pair of bones forming the pectoral girdle:
 - 1. _____
 - 2. _____
 - c. What shape is the scapula? _____
 - d. What is the acromion process? _____
 - e. List the three functions of the acromion process?
 - 1. _____
 - 2. _____
 - 3. _____
 - f. Describe the scapular spine _____
 - g. Identify the location of the following fossa:
 - 1. Supraspinous fossa _____
 - 2. Infraspinous fossa _____

3. Subscapular fossa _____
 - h. Functionally the coracoid process _____
 - i. The glenoid cavity articulates _____
 - j. What shape is the clavicle? _____
 - k. What does the clavicle articulate with:
 1. At its lateral end _____
 2. At its medial end _____
2. Arm
- a. Structurally the arm runs from _____ to the _____
 - b. It contains a single bone called the _____
 - c. The head of the humerus articulates with _____
 - d. Immediately distal to the head is the _____
 - e. What is the significance of the surgical neck? _____

 - f. The proximal end of the humerus has a:
 1. Greater tubercle that is located _____
 2. Lesser tubercle that is located _____
 - a. Functionally both tubercles are _____
 3. The groove between the tubercles is called _____
 - a. What is found in this groove? _____
 - g. Where is the deltoid tuberosity found? _____
 - h. Functionally the deltoid tuberosity is _____
 - i. The distal end of the humerus has a:
 1. Capitulum that is very _____ & located _____
 - a. The capitulum articulates with _____ of the forearm
 2. Trochlea that is shaped _____ & located _____
 - a. The trochlea articulates with _____ of the forearm
 3. Functionally the medial and lateral epicondyles _____
3. Forearm - from shoulder to wrist
- a. Which bone is on the medial side of the forearm? _____
 - b. Which bone is on the lateral side of the forearm? _____

- c. The proximal end of the ulna has a:
1. Trochlear (semilunar) notch that is shaped like _____
 - a. What does the trochlear notch articulate with? _____
 2. Olecranon process which is commonly referred to _____
 - a. This process is larger and located _____
 - b. Functionally the olecranon process is _____
 3. Coronoid process which is _____, and located _____
 4. Radial notch where the _____ of the radius articulates
- d. The distal end of the ulna has a:
1. Small head which articulates with _____ & _____
 2. Styloid process located on the _____ side of the head
 - a. Functionally the styloid process _____
- e. The proximal end of the radius has a:
1. Head that has a _____ shape & articulates with _____
 2. Radial tuberosity that functionally is _____
- f. The distal end of the radius articulates with _____ & _____
1. The styloid process is on _____ side of the _____ end
 2. Functionally the styloid process _____
4. Wrist
- a. Is composed of how many bones _____ called _____
 - b. The bones are arranged in _____ rows of _____ bones
5. Hand
- a. The palm of the hand is composed of five _____ bones
 - b. The digits are composed of bones called _____
- B. Pelvic Girdle and Lower Limb
1. Pelvic Girdle
 - a. Consists of right and left _____ or _____
 - b. Describe what structures form the pelvis _____

 - c. What is the obturator foramen? _____
 - d. What is the acetabulum? _____

1. Functionally the acetabulum is _____
 - e. List the three bones which fuse together to form the coxa:
 1. _____
 2. _____
 3. _____
 - f. What is the iliac crest? _____
 1. The front end is called _____
 2. The back end is called _____
 - g. Where is the greater ischiadic notch? _____
 - h. What joins to the ilium at the articular surface? _____
 1. This connection is properly called the _____ joint
 - i. What is the iliac fossa? _____
 - j. What structure does a person sit on? _____
 - k. Functionally the ischial tuberosity _____
 - l. Functionally the pubic crest _____
 - m. What is the connection between the 2 coxa called? _____
 - n. What are the iliopectineal lines? _____
 - o. Distinguish between false (greater) pelvis and true (lesser) pelvis: _____

 - p. Where is the pelvic inlet? _____
 - q. Where is the pelvic outlet? _____
2. Comparison of the Male and Female Pelvis
 - a. In which sex is the pelvis more massive? _____
 - b. The pelvis is broader and has more rounded openings in _____
 3. Thigh - hip to knee
 - a. Contains a single bone called _____
 - b. The proximal end of the femur has a:
 1. Prominent _____
 - a. This structure articulates with _____
 2. Well-defined _____

3. Greater trochanter which is _____ to the neck
 4. Lesser trochanter which is _____ & _____ to the neck
 - a. Functionally both trochanters _____
 - c. The distal end of the femur has:
 1. Smooth rounded surfaces called _____ & _____
 - a. These structures articulate with _____
 2. Where are the medial and lateral epicondyles located? _____
 - a. Functionally the epicondyles _____
 - d. What is the patella (kneecap)? _____
 1. The patella is actually located within _____
 2. What does the patella articulate with? _____
4. Leg - knee to ankle
- a. Which bone is on the medial side of the leg? _____
 - b. Which bone is on the lateral side of the leg? _____
 - c. Functionally the tibial tuberosity _____
 - d. The proximal end of the tibia has:
 1. Medial and Lateral condyles that articulate with _____
 2. Intercondylar eminence which is a _____
 - e. The distal end of the tibia has _____
 - f. The proximal head of the fibula articulates with _____
 - g. The distal end of the fibula is enlarged to form _____
5. Foot
- a. The proximal portion of the foot consists of ___ bones called _____
 - b. The talus articulates with _____ & _____ forming _____
 - c. The calcaneus is located _____ to the talus
 1. Functionally the calcaneus _____
 2. The calcaneus is commonly referred to as the _____
 - d. The metatarsals are arranged similarly to _____ of the hand
 - e. The bones of the toes are called _____
 - f. How many major arches does the foot have? _____

g. Describe the sequence of weight transfer as the foot is placed on the ground: _____
