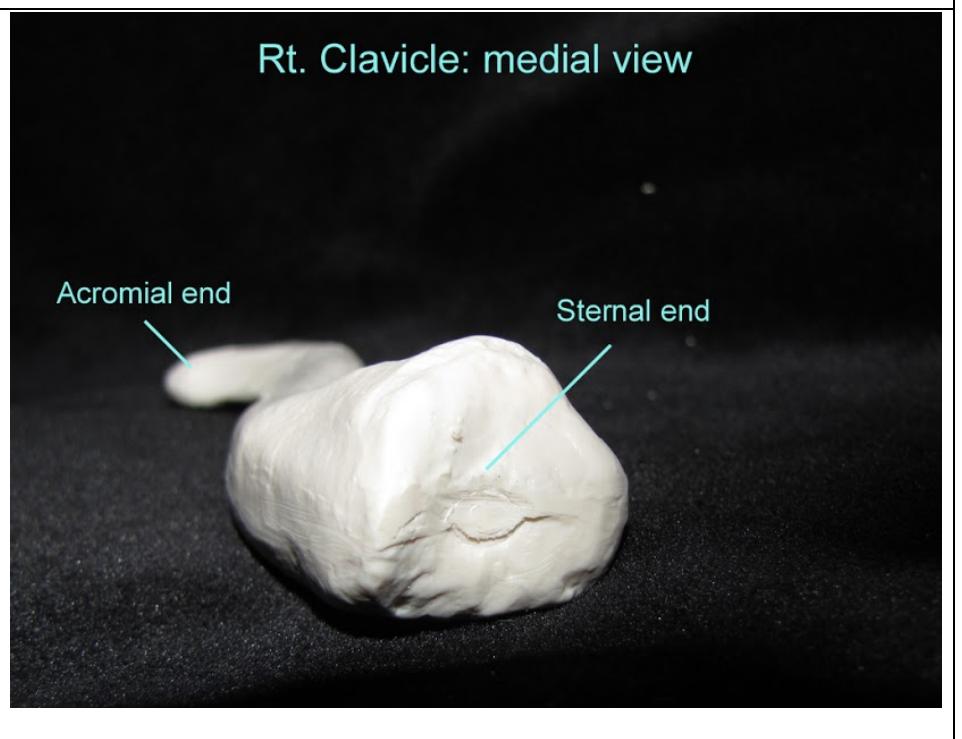
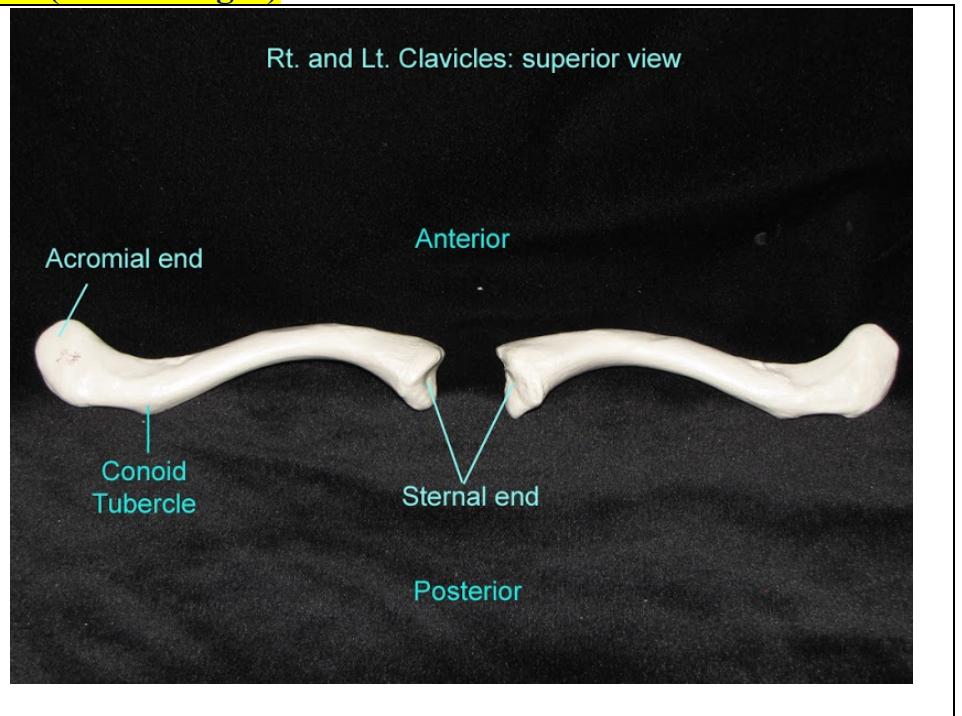


BIO 201 – Skeletal System Anatomy Lab
Appendicular Skeleton

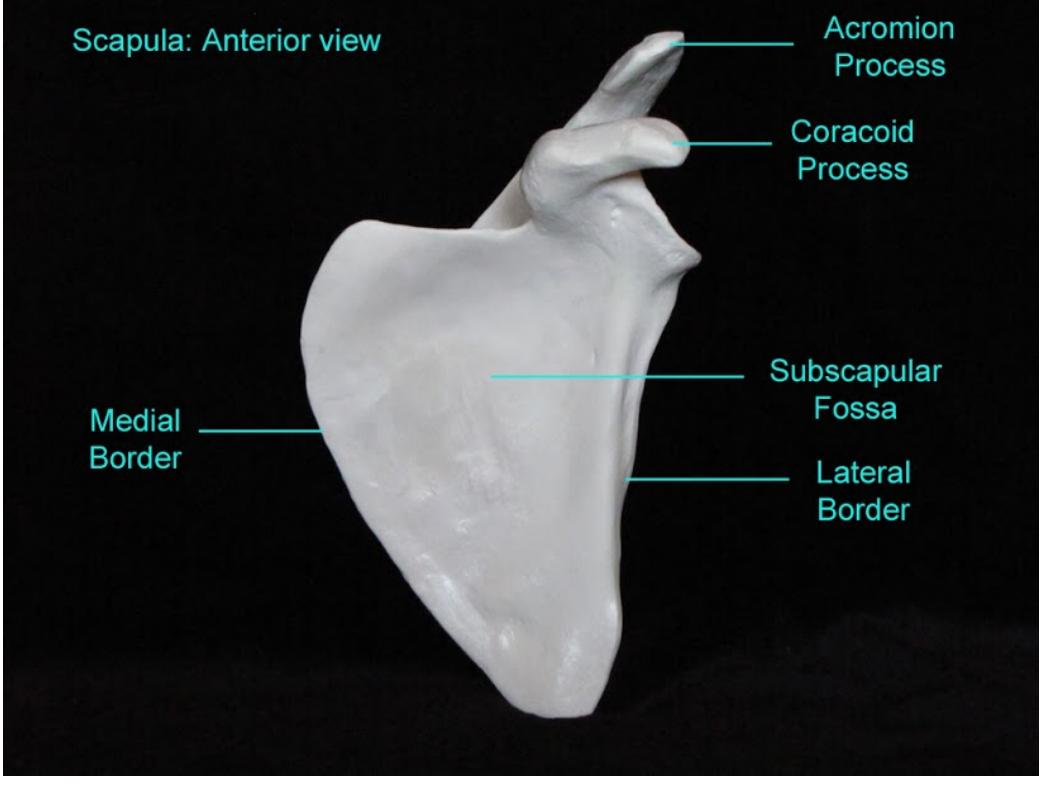
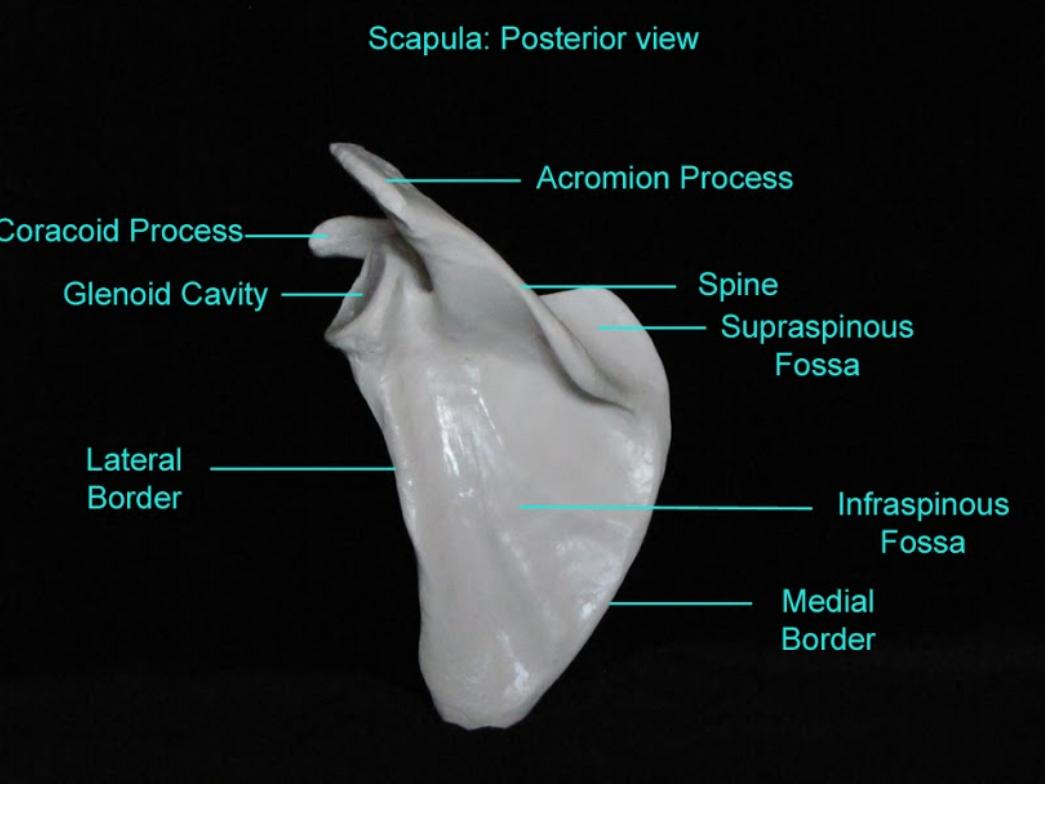
A. PECTORAL GIRDLE: CLAVICLE & SCAPULA

1. CLAVICLE (left and right)

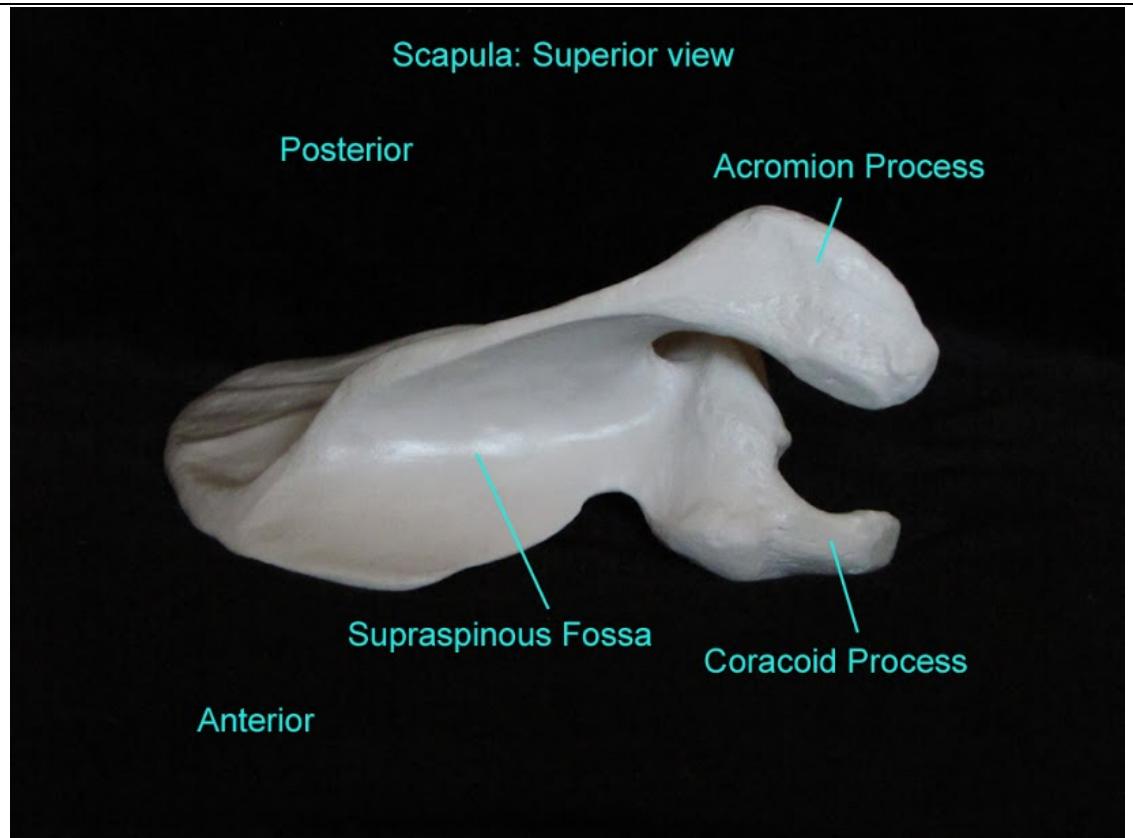
1. Sternal end – articulates with manubrium
2. Acromial end – articulates with the acromion process of scapula
3. Conoid tubercle – landmark on posterior, inferior surface



2. SCAPULA (left and right):

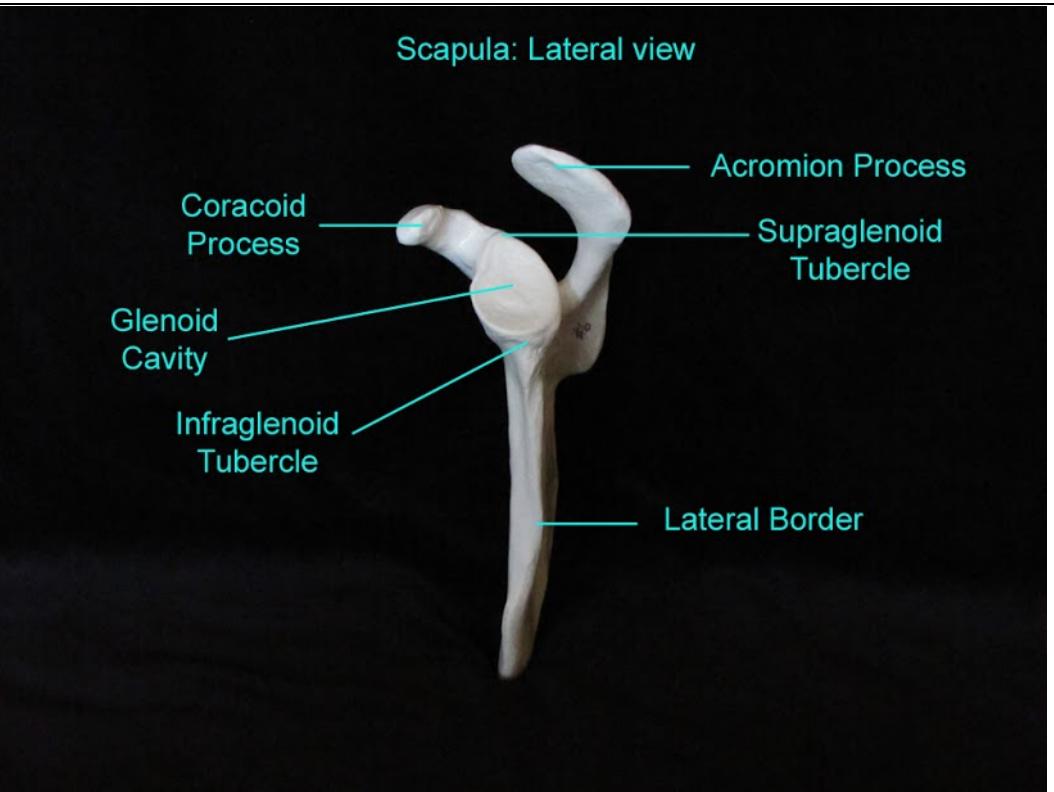
<p>1. Acromion process (<i>acro</i> = topmost) 2. Coracoid process (<i>coracoid</i> = beak) 3. Subscapular fossa 4. Medial (vertebral) border 5. Lateral (axillary) border *left scapula</p>	<p>Scapula: Anterior view</p>  <p>Acromion Process Coracoid Process Subscapular Fossa Lateral Border Medial Border</p>
<p>6. Spine 7. Supraspinous fossa 8. Infraspinous fossa 9. Glenoid cavity (<i>glen-</i> pit, socket) *left scapula ** Acromion process, coracoid process, medial and lateral border may also be seen here.</p>	<p>Scapula: Posterior view</p>  <p>Acromion Process Coracoid Process Glenoid Cavity Spine Supraspinous Fossa Infraspinous Fossa Lateral Border Medial Border</p>

*Top down (Superior) view – showing left scapula
**Acromion process, supraspinous fossa, and coracoid process are labeled here.



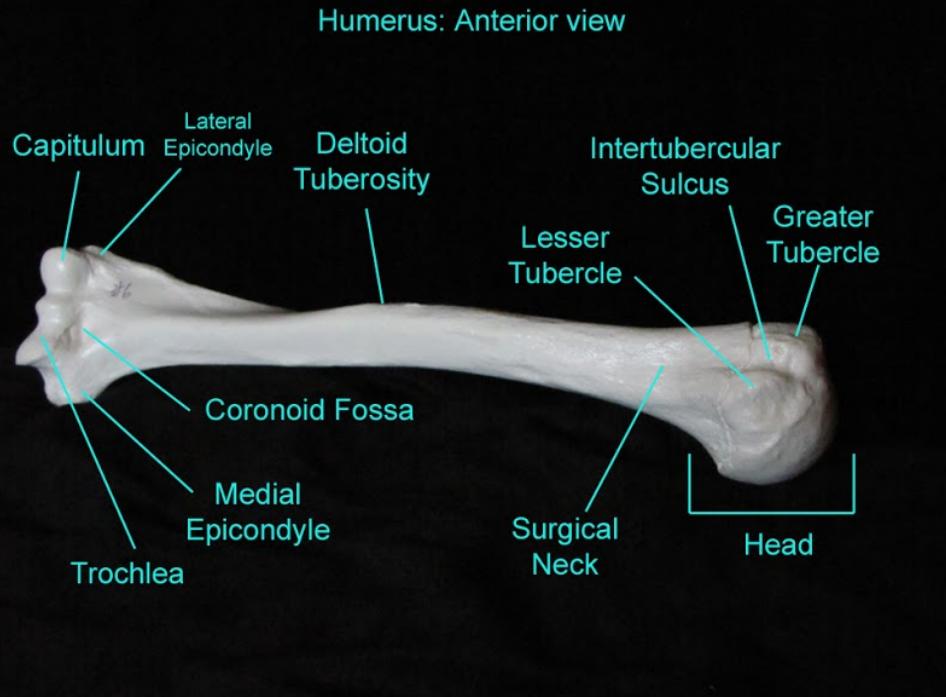
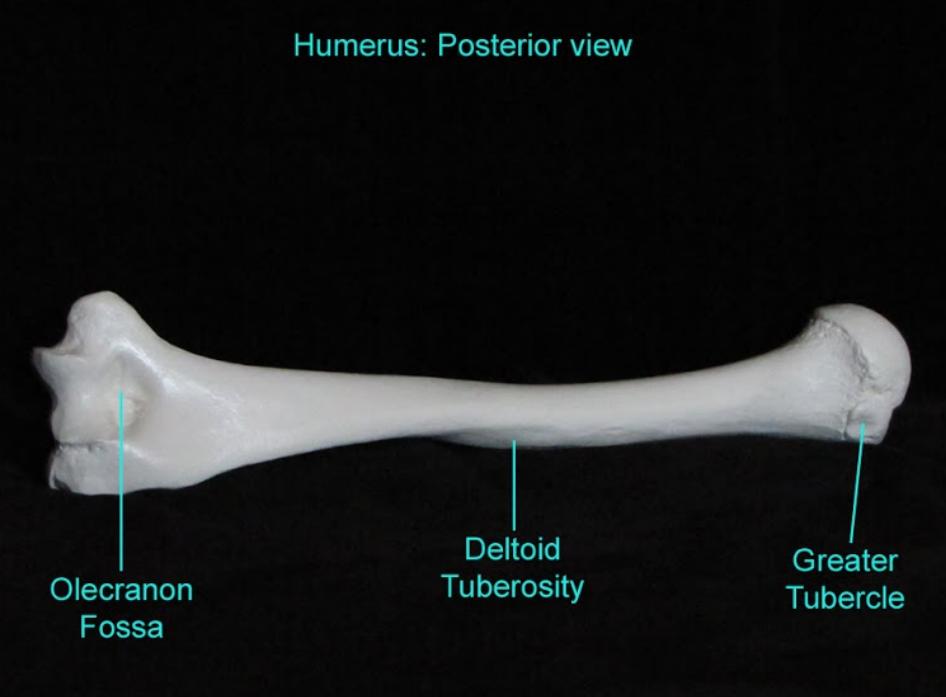
10. Supraglenoid tubercle
11. Infraglenoid tubercle

*lateral view of left scapula
**Acromion process, coracoid process, glenoid cavity and the lateral border are all seen here.



B. UPPER EXTREMITY - HUMERUS, RADIUS, ULNA, CARPALS, METACARPALS, PHALANGES

1. HUMERUS (left and right):

<p>1. Head – articulates with glenoid cavity</p> <p>2. Greater tubercle</p> <p>3. Lesser tubercle</p> <p>4. Intertubercular sulcus (or groove)</p> <p>5. Surgical neck</p> <p>6. Deltoid tuberosity</p> <p>7. Coronoid fossa</p> <p>*Right humerus</p>	<p>Humerus: Anterior view</p> 
<p>8. Olecranon fossa</p> <p>*Deltoid tuberosity and the Greater tubercle may be seen here.</p> <p>**Right humerus</p>	<p>Humerus: Posterior view</p> 

9. Trochlea –
articulates with
the trochlear
notch of the
ulna (*troch* –
wheel)

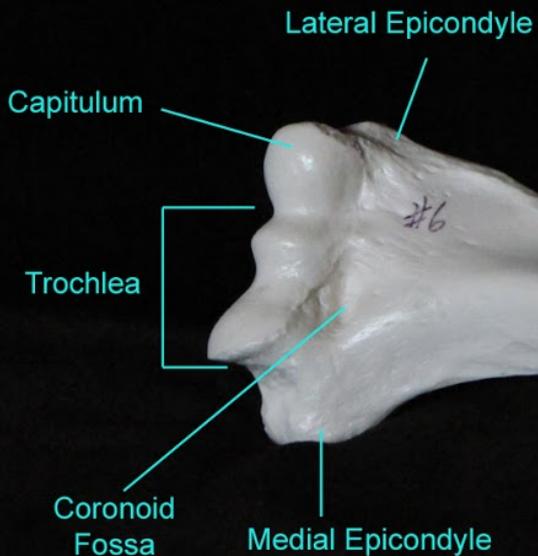
10. Capitulum –
articulates with
the head of the
radius

**11. Medial
epicondyle**
**12. Lateral
epicondyle**

***Coronoid fossa**
can be seen

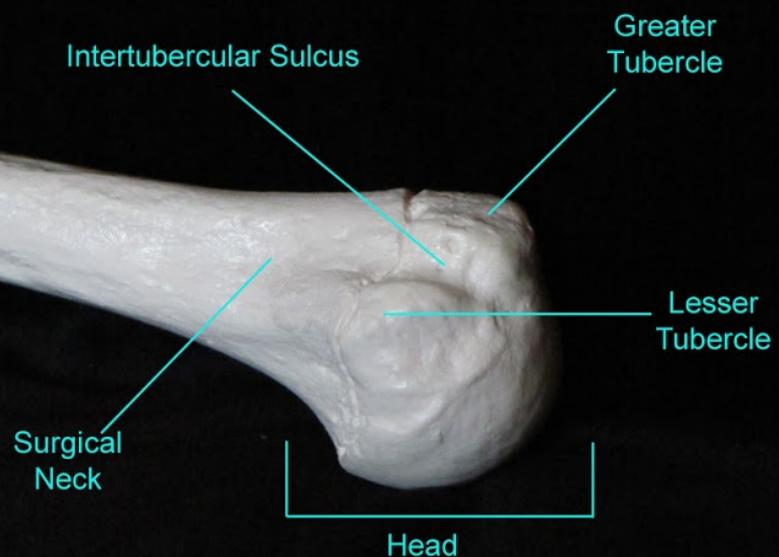
***Right humerus**

Distal Portion of Humerus: Anterior view



**Anterior view
of proximal
portion of the
right humerus:
Nice view of the
Greater
tuber, Lesser
tuber, Intertuberular
Sulcus, head
and surgical
neck of the
humerus.**

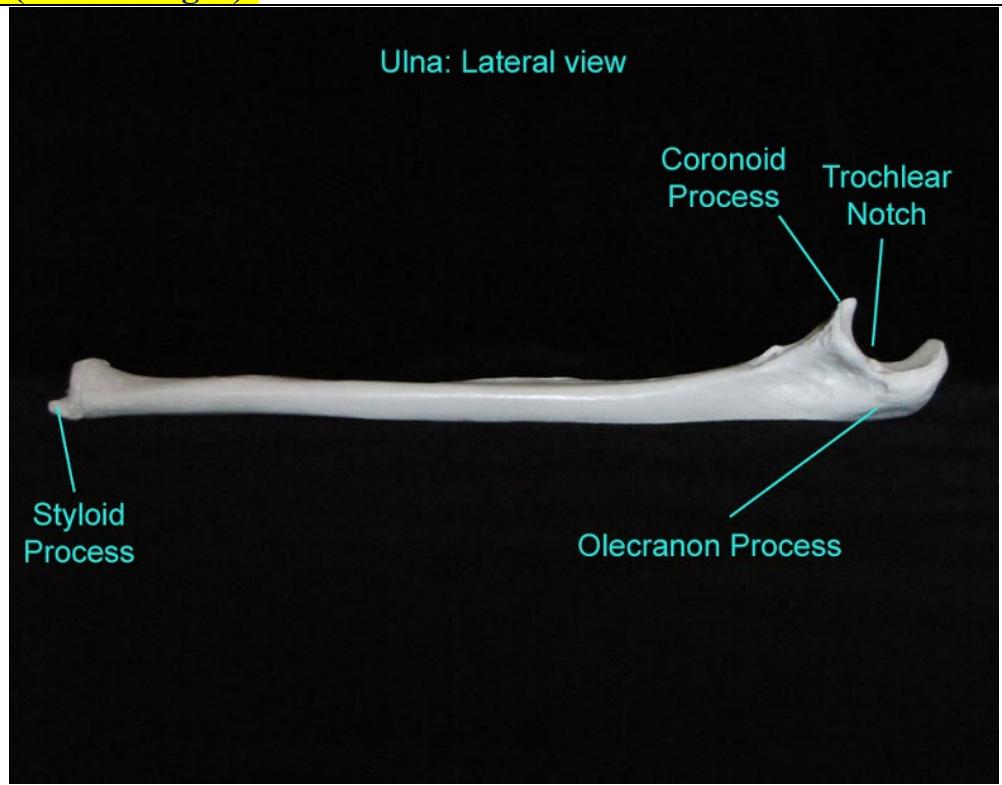
Proximal Portion of Humerus: Anterior view



2. ULNA (left and right):

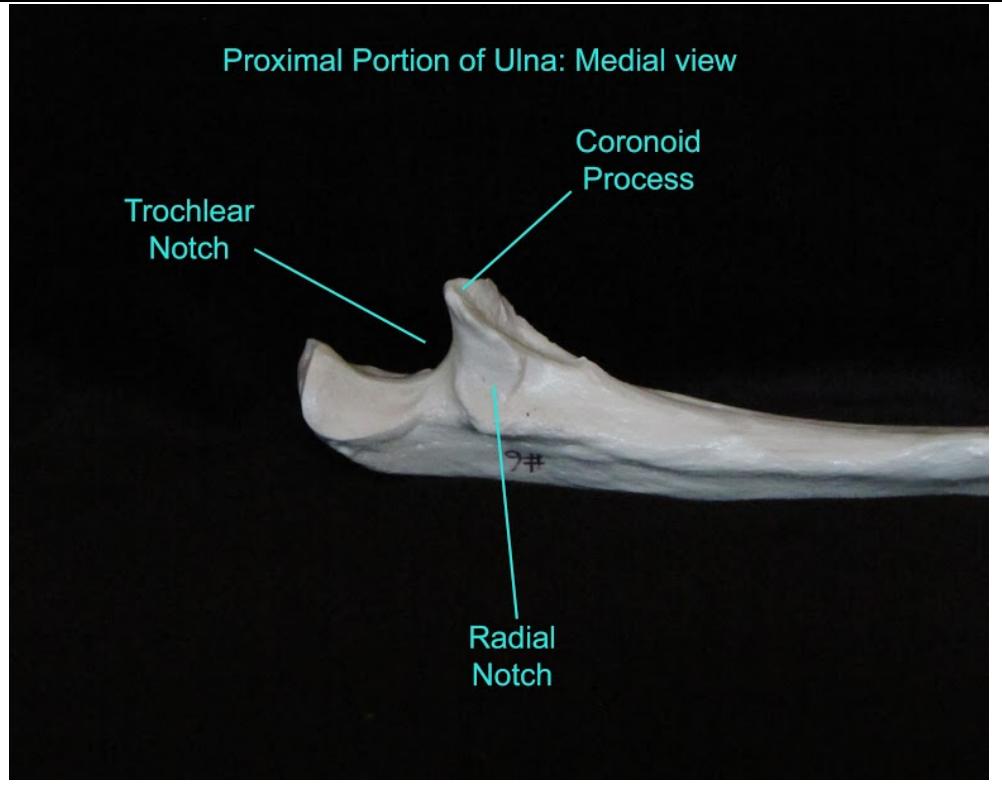
1. Trochlear (or semilunar) notch
2. Olecranon process (*olecran* – the elbow)
3. Coronoid process
4. Styloid process

*Right ulna



5. Radial notch

*Right ulna
**Trochlear notch and coronoid process



3. RADIUS (left and right):

1. Head – articulates with capitulum and radial notch
2. Neck
3. Radial tuberosity
4. Styloid process

*Right radius bone

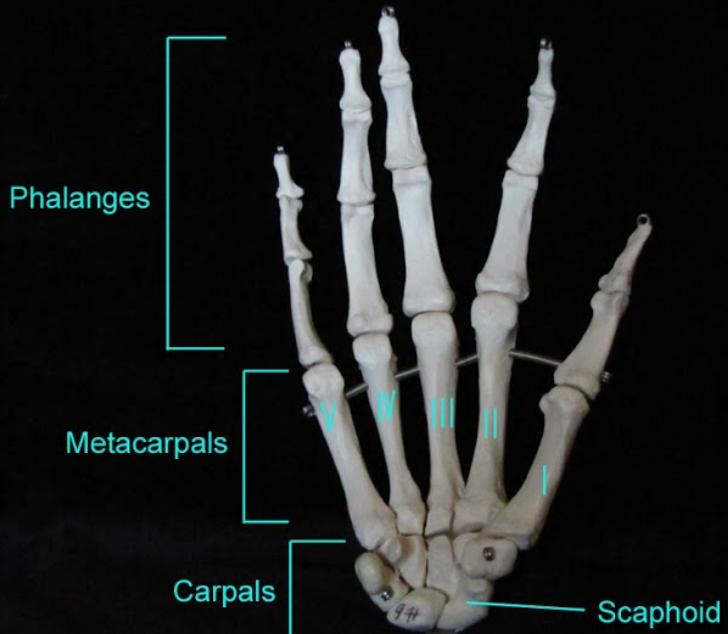
Radius: Anterior view



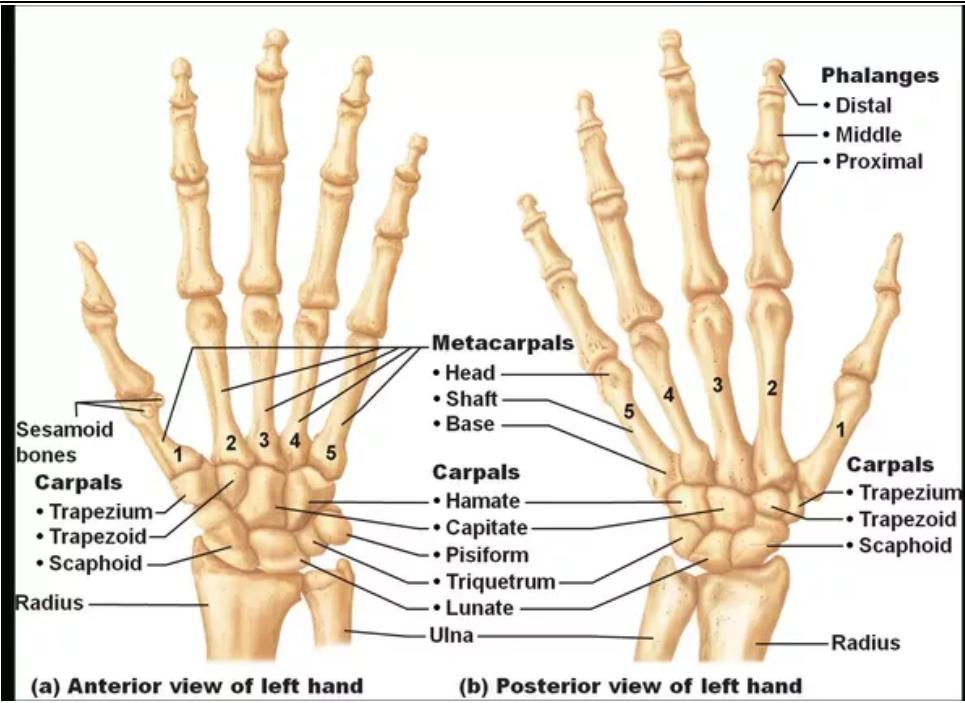
4. CARPALS (8 bones arranged in 2 rows of 4, *carp*=wrist)

*Carpals of the right hand.

Hand: Anterior view

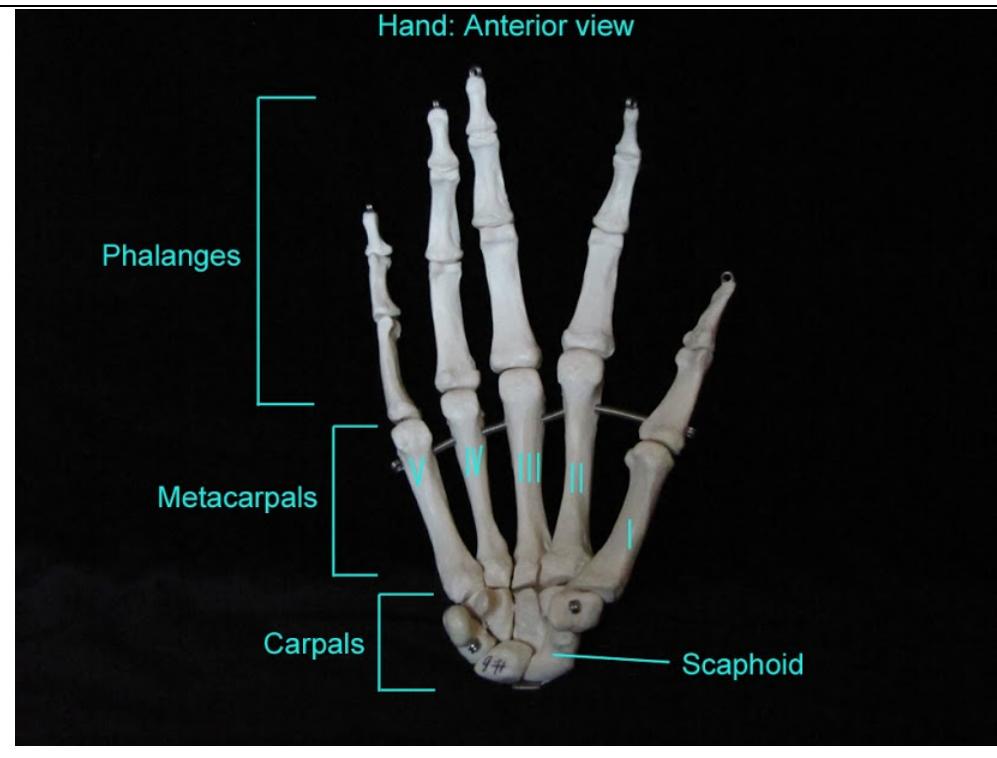


1. Scaphoid
2. Lunate
3. Triquetrum
4. Pisiform
5. Trapezium
6. Trapezoid
7. Capitate
8. Hamate



5. METACARPALS (5 bones of the hand – known as I-V beginning on the lateral side)

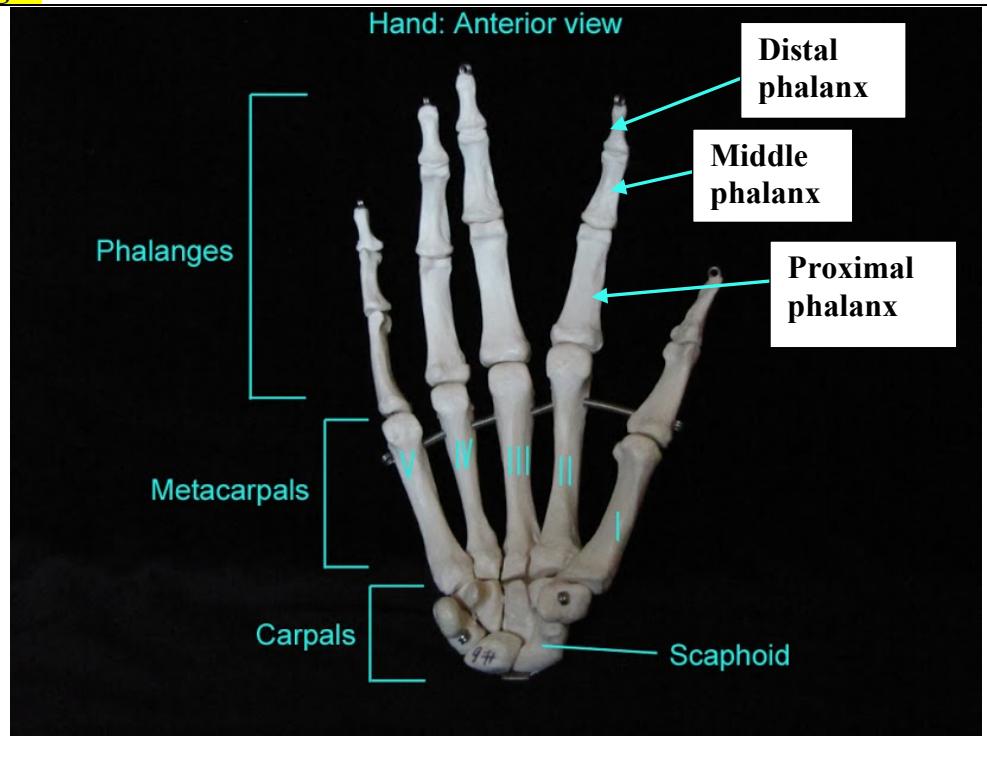
- *Metacarpals of the right hand.
- *Numbering starts with the thumb as I



6. Phalanges

1. Proximal phalanges (I-V)
2. Middle phalanges (II-V, not in thumb)
3. Distal phalanges (I-V)

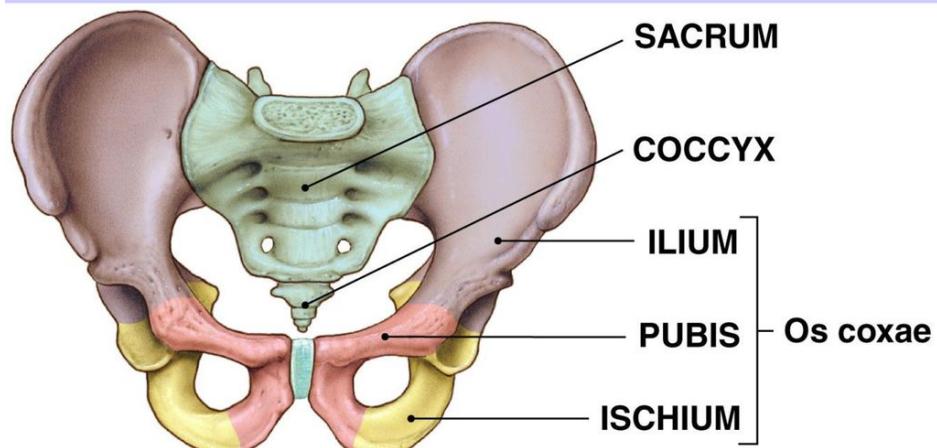
*phalanx = singular
**phalanges = plural
***All phalanges have a proximal, middle and distal phalanx, with the exception of the thumb.



The thumb only has a proximal phalanx and a distal phalanx (no middle phalanx).

C. PELVIC GIRDLE: consists of 2 pelvic bones, also called the os coxae. Each os coxa consists of 3 bones - Ilium, Ischium, Pubis.

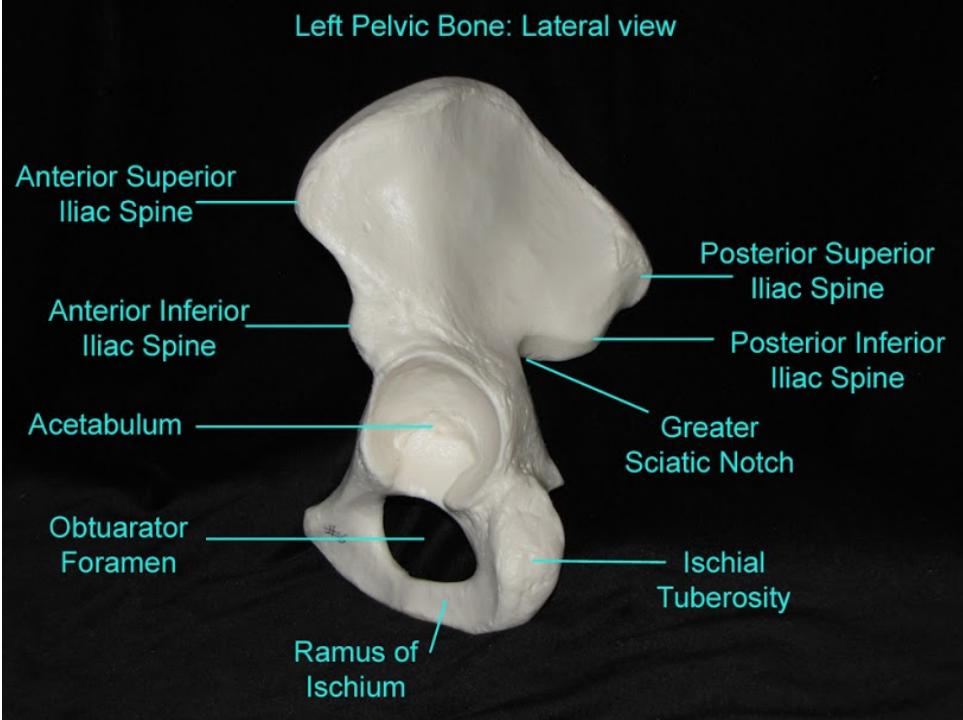
Pelvis (pelvic girdle):



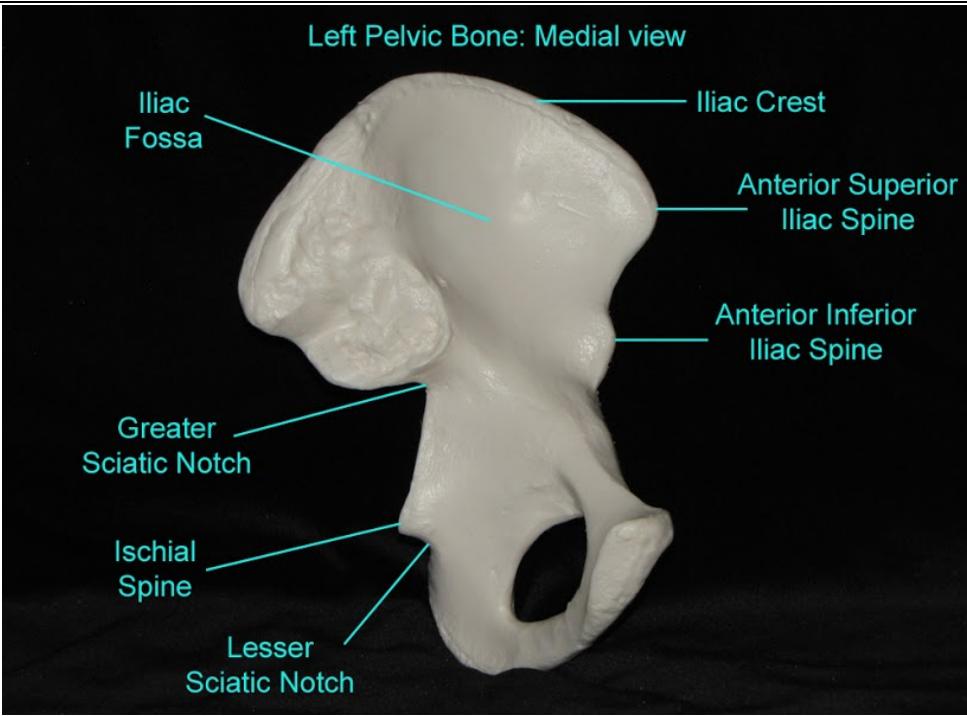
Copyright © 2006 Pearson Education, Inc., Publishing as Benjamin Cummings

1. ILIUM

1. Anterior superior iliac spine
2. Anterior inferior iliac spine
3. Posterior superior iliac spine
4. Greater sciatic notch
(route of major nerves to lower limb)

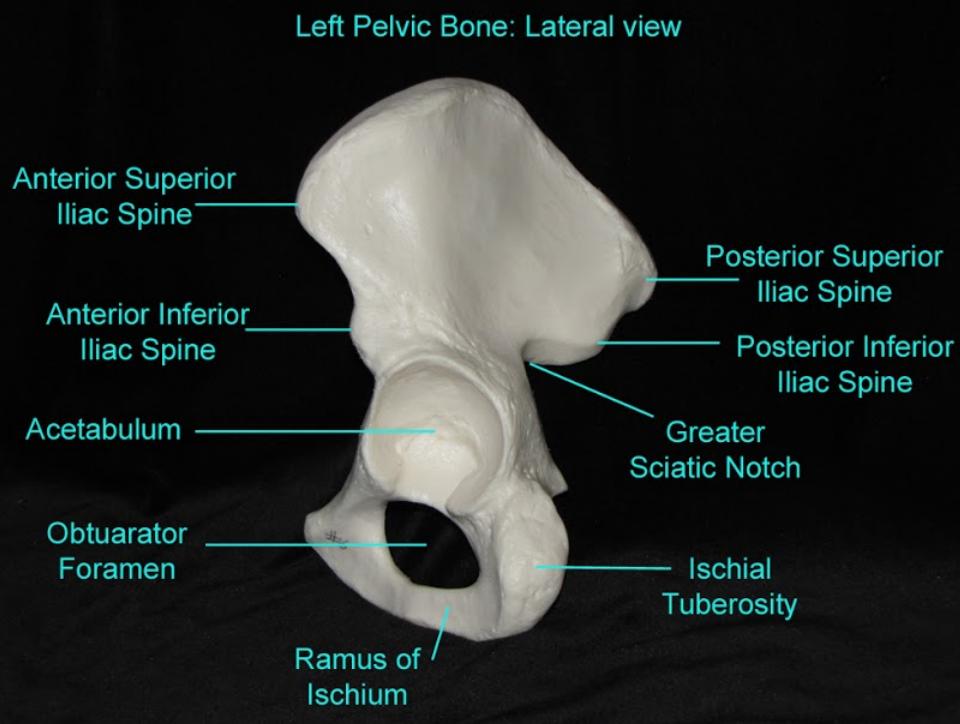


5. Iliac crest
6. Iliac fossa

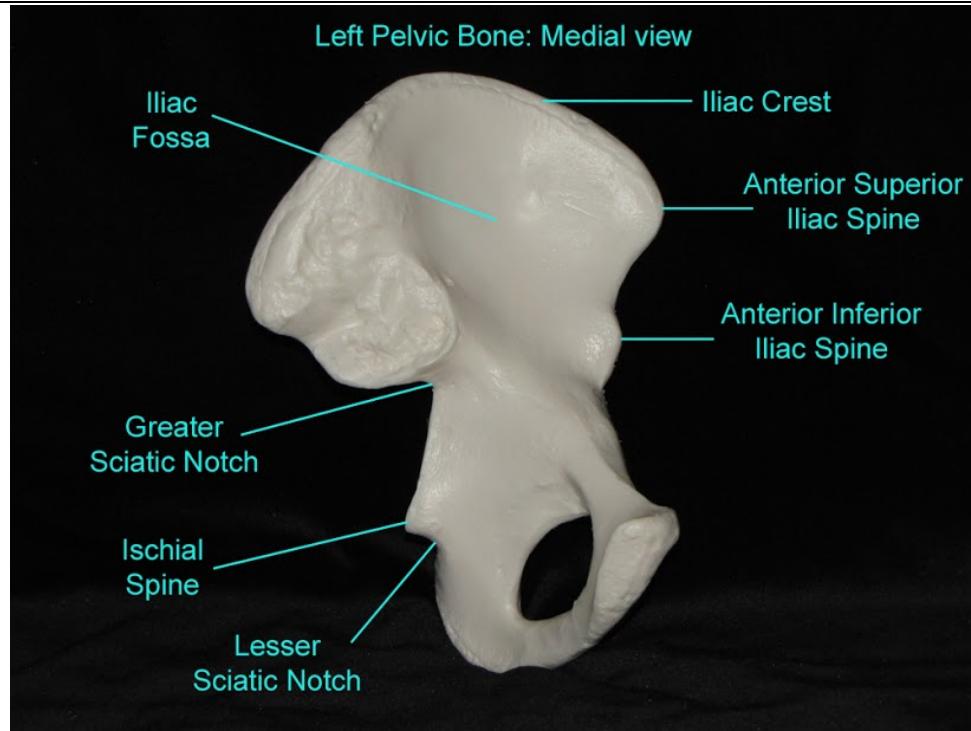


2. ISCHIUM

- 1. Ischial tuberosity ("sit" bones)
- 2. Ramus of ischium (*ramus*- a branch)



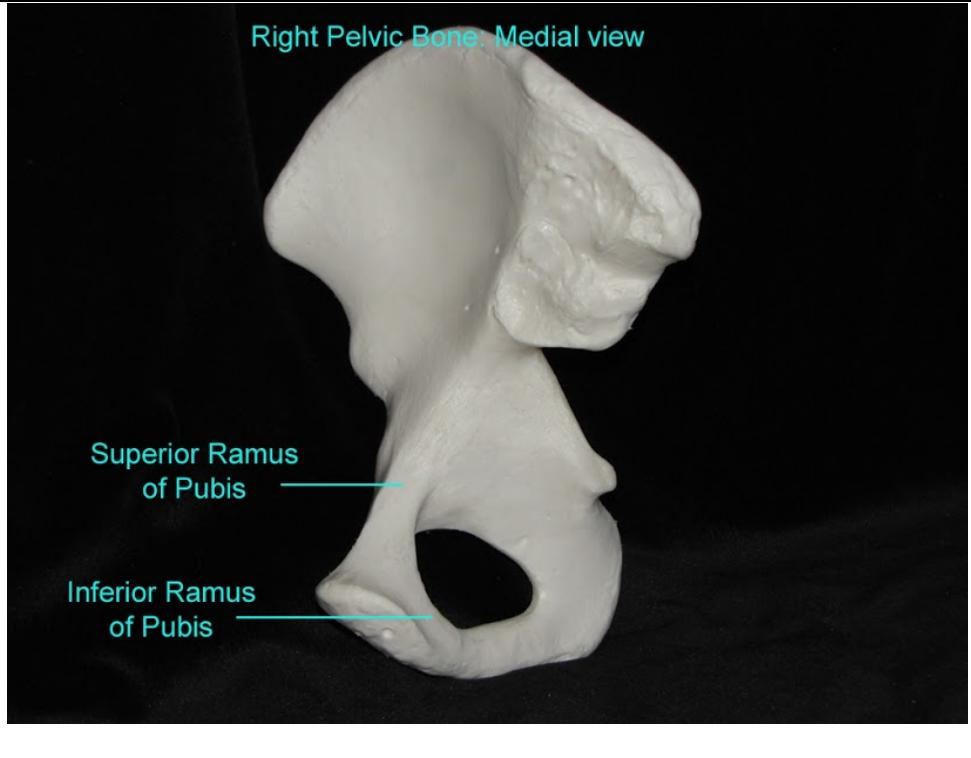
- 3. Ischial spine
- 4. Lesser sciatic notch (route of pudendal nerve to genitals)



3. PUBIS

1. Superior ramus of Pubis
2. Inferior ramus of Pubis

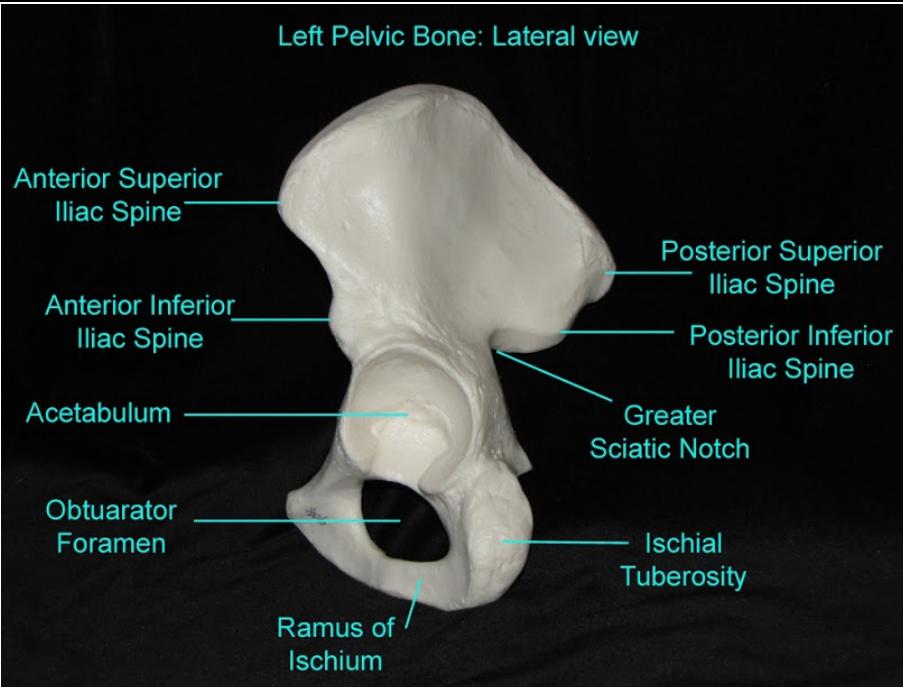
Right Pelvic Bone: Medial view



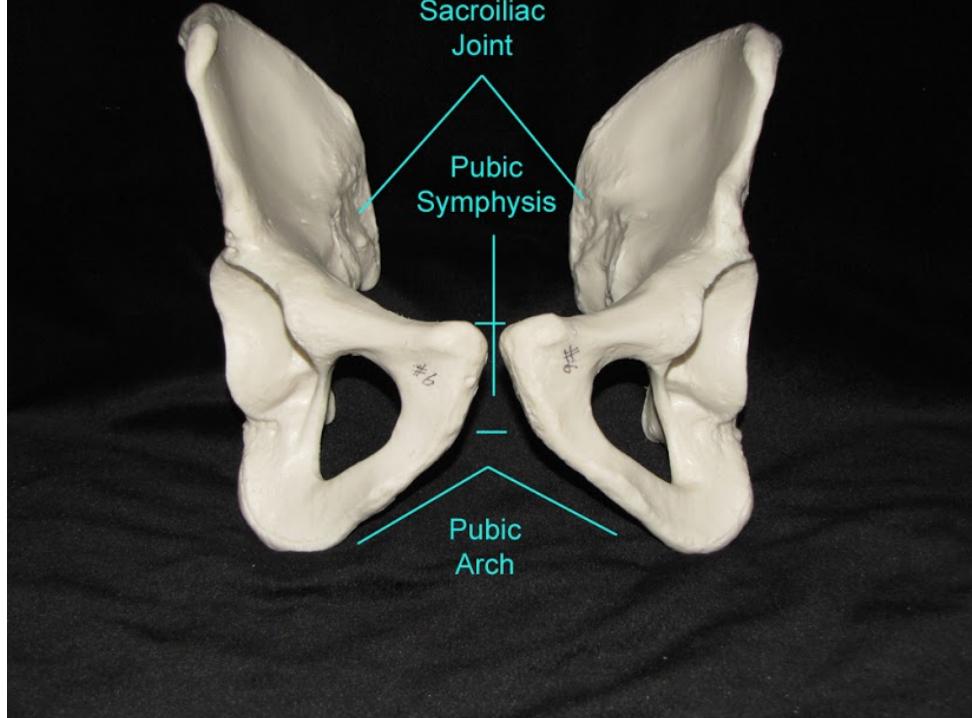
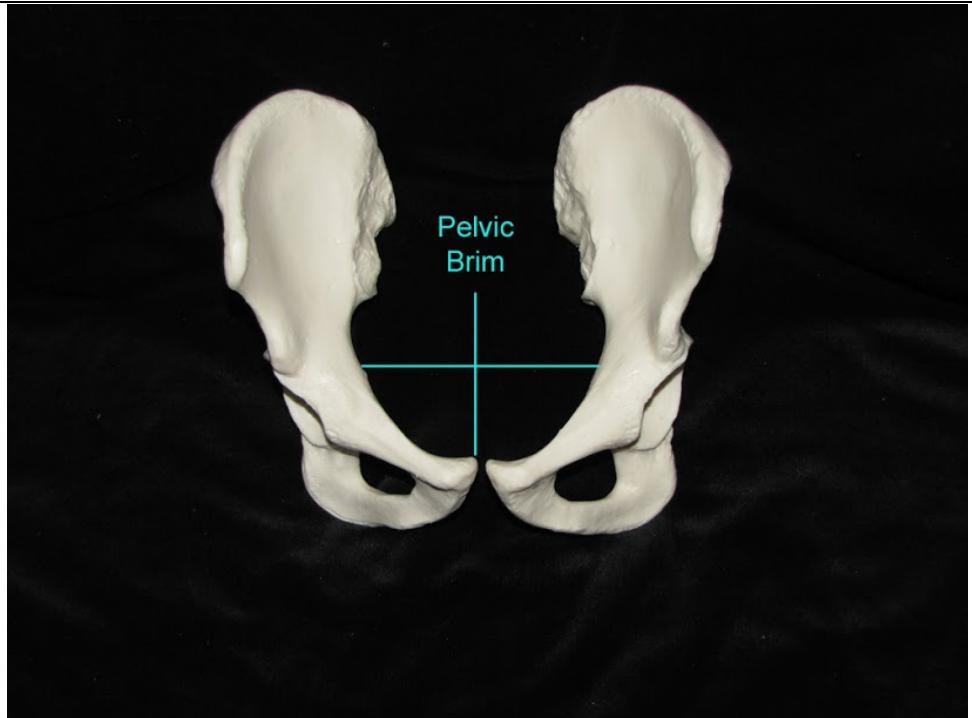
4. OS COXA (hip bone)

1. Acetabulum (articulates with head of the femur and formed by parts of the ilium, ischium, and pubis)
2. Obturator foramen (the largest foramen in the skeleton, yet nothing large passes through it)

Left Pelvic Bone: Lateral view

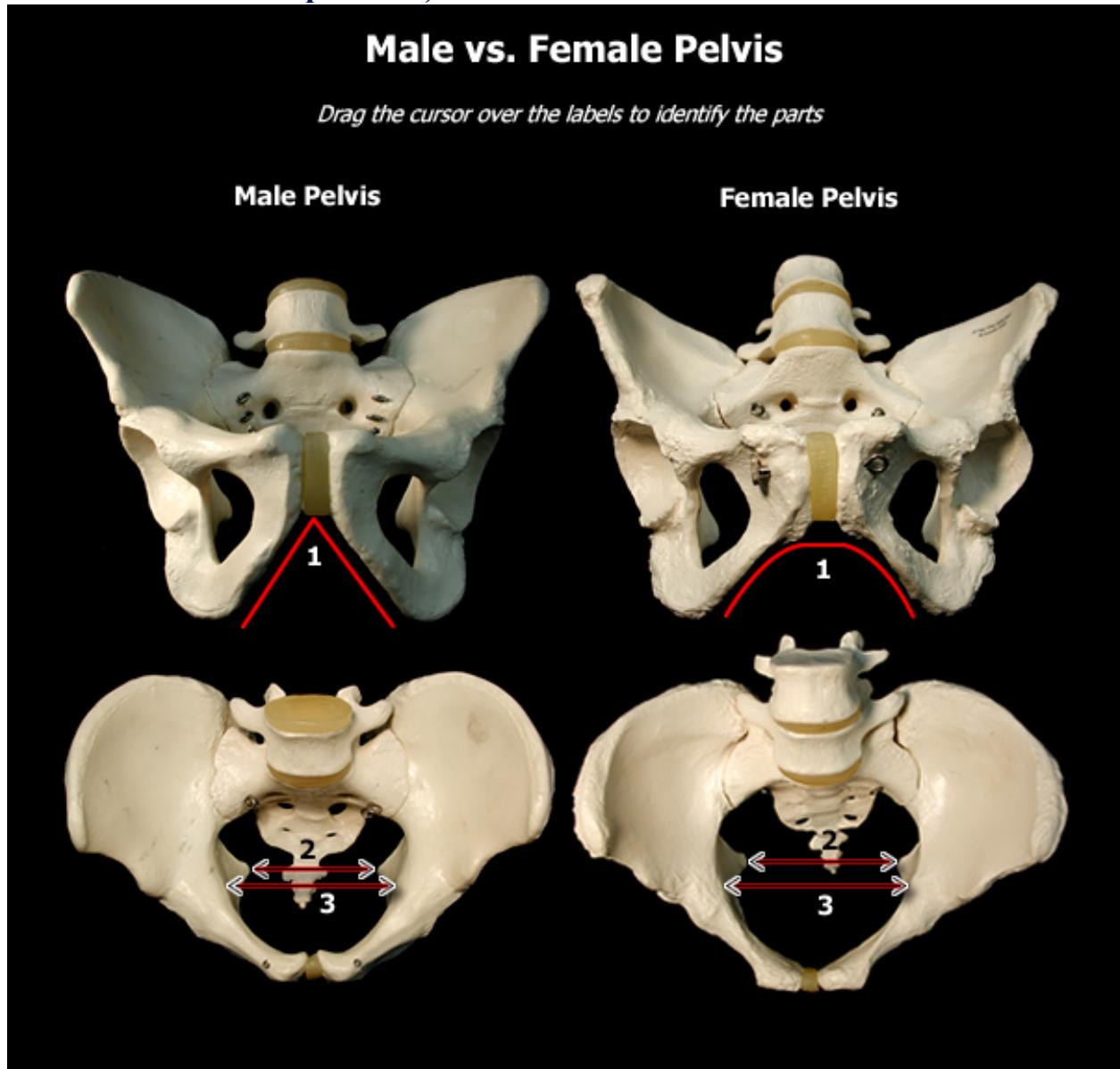


5. ARTICULATED PELVIC GIRDLE (pelvis)

- | | |
|---|---|
| <p>1. Pubic
symphysis
(symphysis
pubis)
2. Pubic arch</p> |  <p>This image shows the anterior (ventral) view of a human pelvis. The sacroiliac joint is at the top, where the sacrum meets the ilium. Below it is the pubic symphysis, the joint between the two pubic bones. A horizontal line, the pubic arch, is formed by the pubic rami of the two pubic bones. The image is annotated with cyan lines and text: 'Sacroiliac Joint' points to the top joint, 'Pubic Symphysis' points to the joint between the pubic bones, and 'Pubic Arch' points to the horizontal line formed by the pubic rami.</p> |
| <p>3. Pelvic brim
4. When
standing, the
anterior
superior iliac
spines and the
upper end of
the symphysis
pubis lie in the
same vertical
plane.</p> |  <p>This image shows the posterior (dorsal) view of a human pelvis. The pelvic brim is the upper border of the true pelvis, formed by the iliac crests and the sacroiliac joints. The image is annotated with a cyan line and text: 'Pelvic Brim' points to the upper border of the pelvis.</p> |

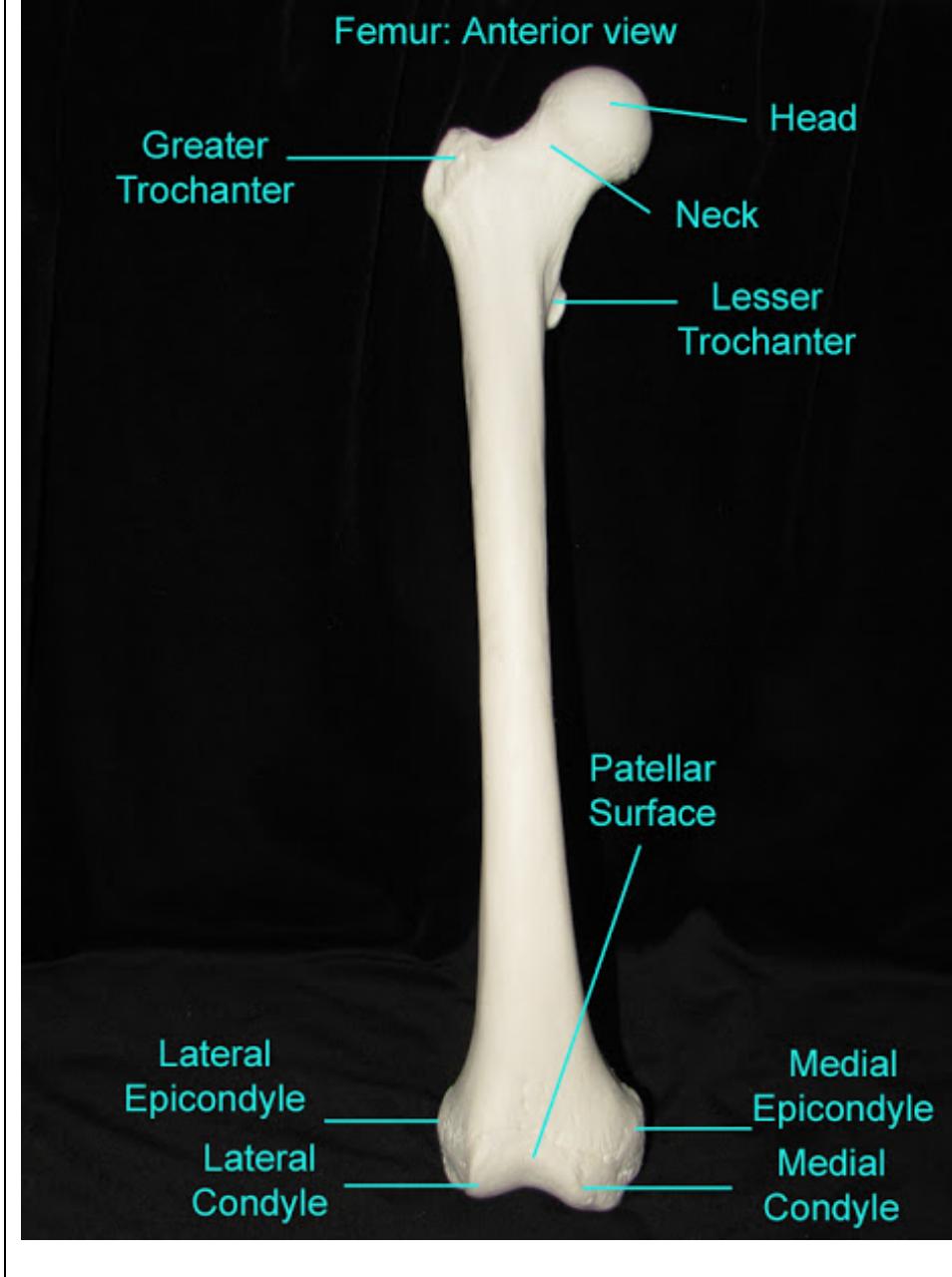
3. Pelvic brim
4. When
standing, the
anterior
superior iliac
spines and the
upper end of
the symphysis
pubis lie in the
same vertical
plane.

Be able to distinguish a male pelvis from a female (see your textbook for illustrations and comparisons)



D. LOWER EXTREMITY: FEMUR, PATELLA, TIBIA, FIBULA, TARSALS, METATARSALS, PHALANGES

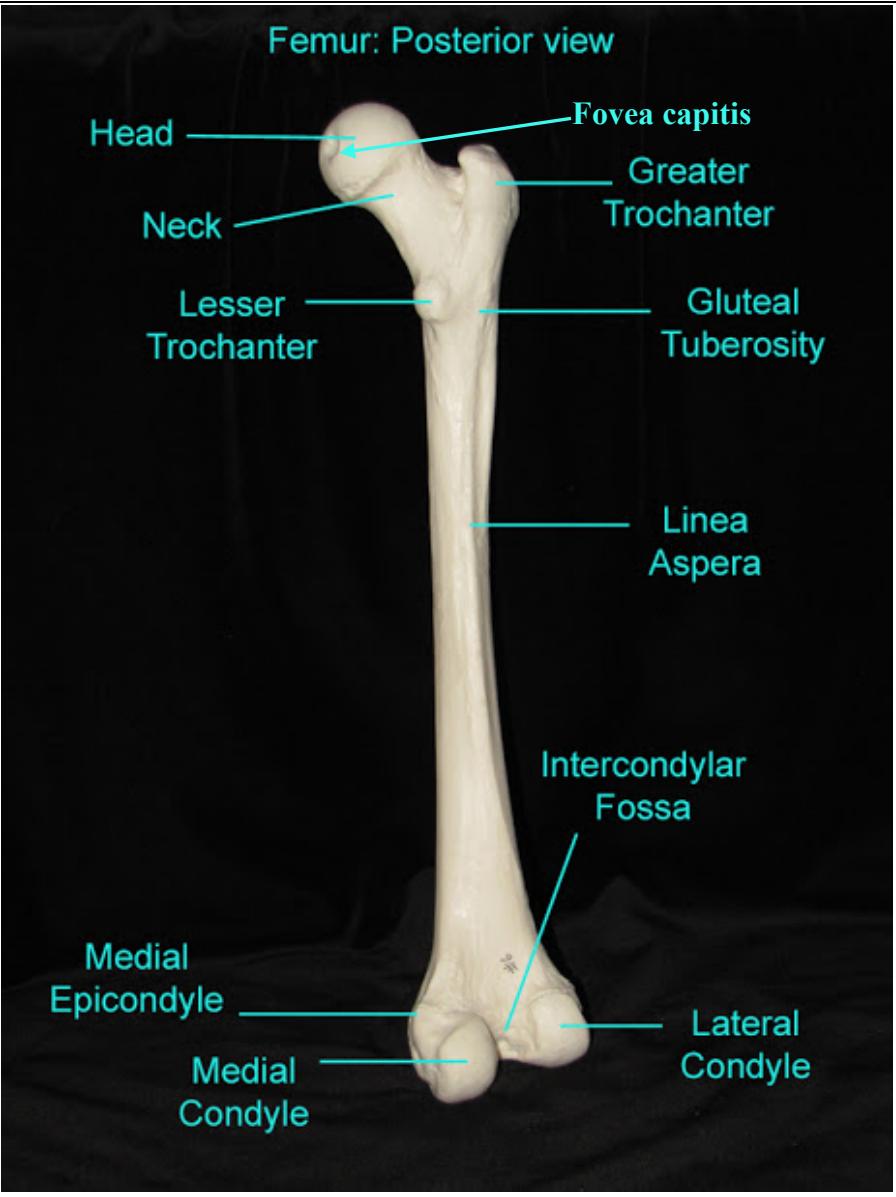
1. FEMUR (left and right)

<p>1. Head (the depression of the fovea capitis, where the ligamentum teres attaches the femur to the acetabulum. When hip joints are replaced, the prostheses are held together by the surrounding muscles)</p> <p>2. Neck</p> <p>3. Greater trochanter</p> <p>4. Lesser trochanter</p> <p>5. Medial epicondyle</p> <p>6. Lateral epicondyle</p> <p>7. Medial condyle</p> <p>8. Lateral condyle</p> <p>9. Patellar surface</p> <p>*RIGHT FEMUR</p>	<p>Femur: Anterior view</p>  <p>This diagram shows the anterior (front) view of a human femur. The bone is white and set against a black background. The head of the femur is at the top left, with the neck extending downwards. The greater trochanter is a prominent bump on the lateral side of the neck. The lesser trochanter is a smaller bump on the medial side. The shaft of the femur continues downwards. At the bottom, the lateral epicondyle is on the right and the medial epicondyle is on the left. The lateral condyle is on the right and the medial condyle is on the left, located at the distal end of the femur. The patellar surface is a long, narrow area on the anterior side of the distal femur shaft, just above the knee joint.</p> <ul style="list-style-type: none">HeadNeckLesser TrochanterPatellar SurfaceMedial EpicondyleMedial CondyleLateral CondyleLateral EpicondyleGreater Trochanter
--	---

- 10. Gluteal tuberosity
- 11. Linea aspera
- 12. Intercondylar fossa

*Review other features of the femur labeled here. The fovea capitis on the head may be seen here - the depression of the fovea capitis is where the ligamentum teres attaches the femur to the acetabulum. When hip joints are replaced, the prostheses are held together by the surrounding muscles)

***RIGHT FEMUR**



2. PATELLA (left and right)

Patellas: Anterior view

Right



Left



Medial

Patellas: Posterior view

Left



Right

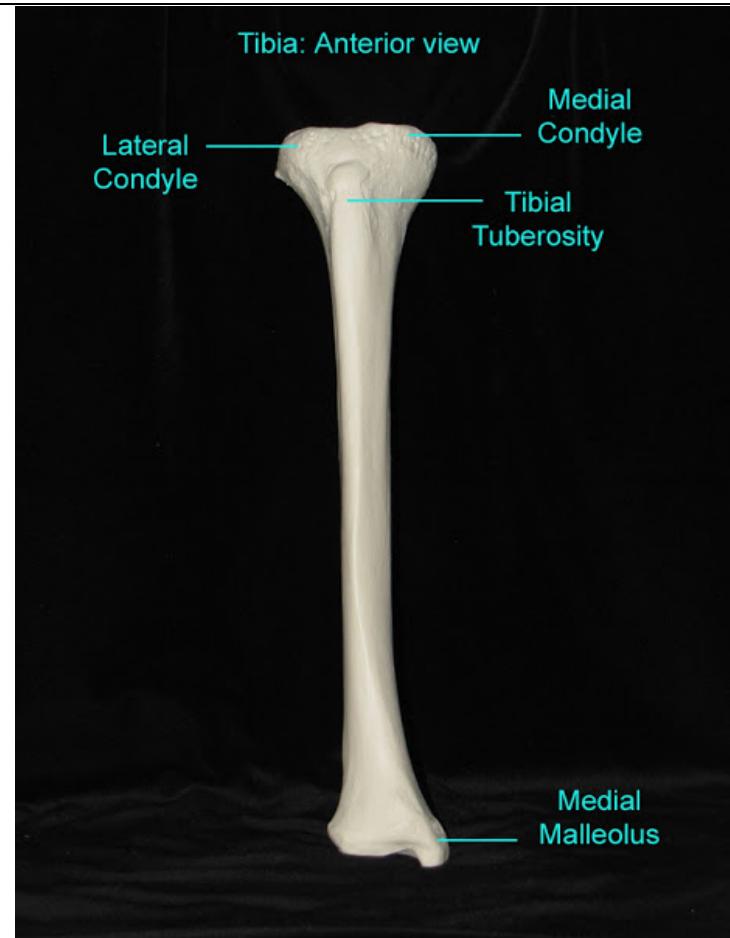


Medial

3. TIBIA (left and right)

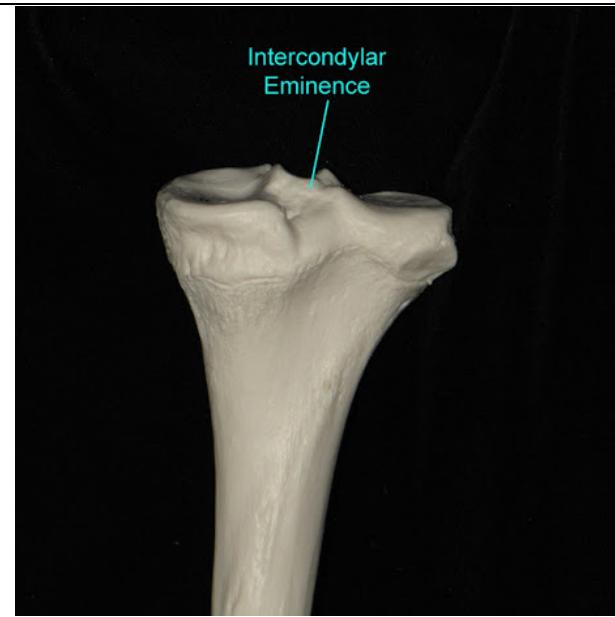
1. Lateral condyle
2. Medial condyle
3. Tibial tuberosity
4. Medial malleolus

*RIGHT TIBIA



Proximal portion of the tibia,
posterior view

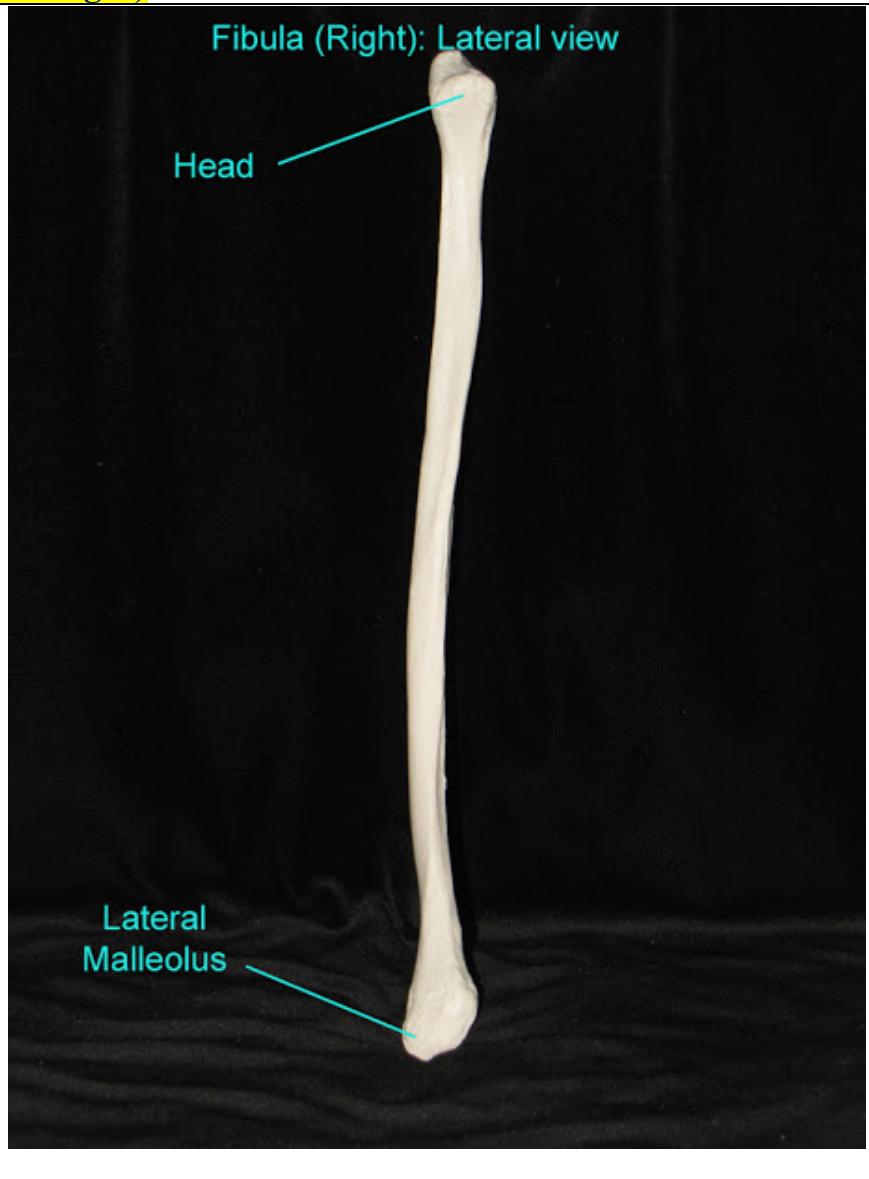
1. Intercondylar eminence



4. FIBULA (left and right)

1. Head
2. Lateral malleolus
3. Malleolar fossa – is NOT depicted here but would be seen on the medial side of the fibula. It would be seen on the other side of the lateral malleolus

*RIGHT FIBULA



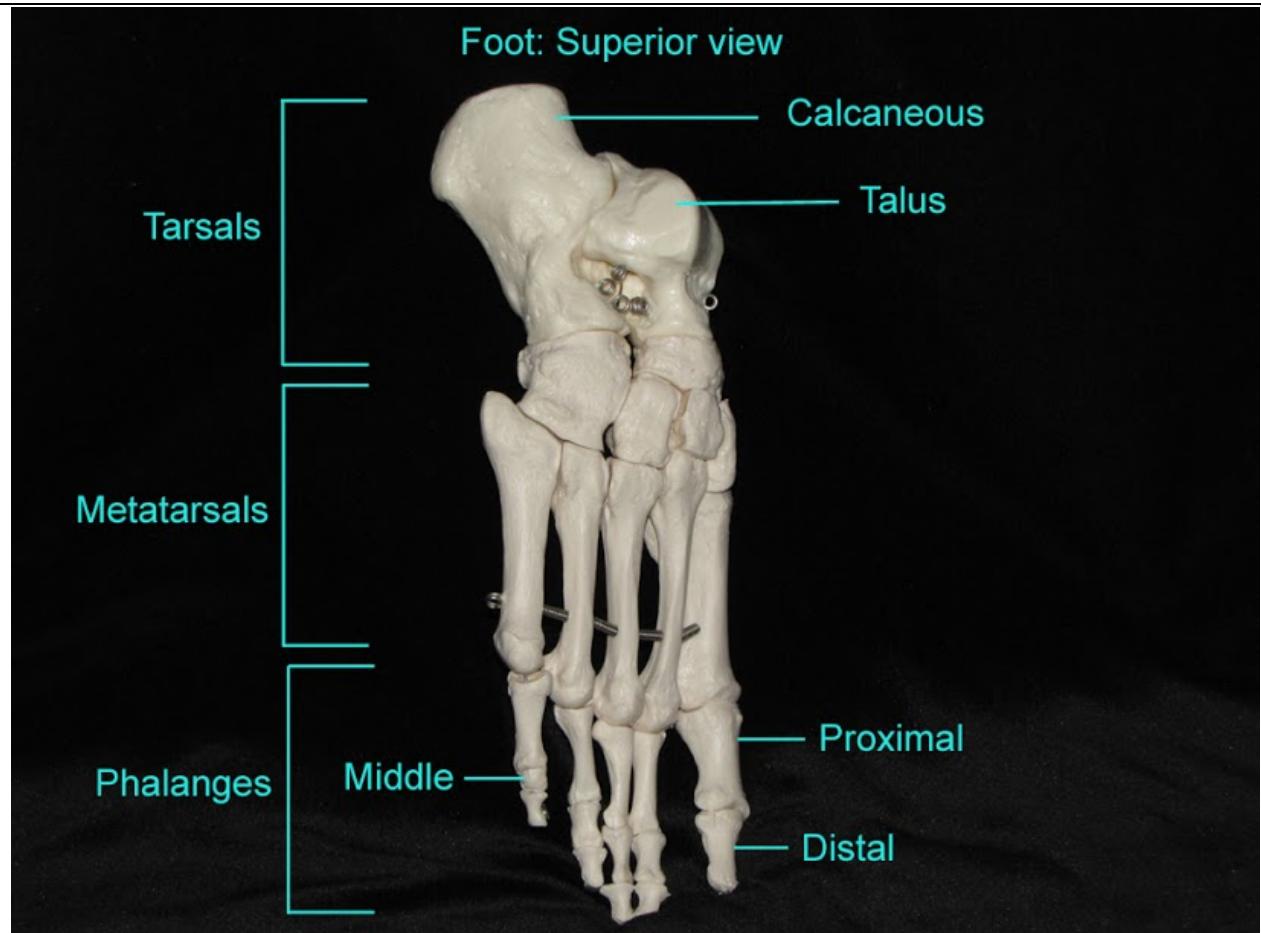
5. TARSALS (7 ankle bones)

	<p>Foot: Superior view</p> <p>Calcaneous</p> <p>Talus</p> <p>Tarsals</p> <p>Metatarsals</p> <p>Phalanges</p> <p>Middle</p> <p>Proximal</p> <p>Distal</p>
<p>1. Talus</p> <p>2. Calcaneus</p> <p>3. Navicular</p> <p>4. Medial cuneiform</p> <p>5. Intermediate cuneiform</p> <p>6. Lateral cuneiform</p> <p>7. Cuboid</p>	<p>Distal</p> <p>Middle</p> <p>Proximal</p> <p>Phalanges</p> <p>Metatarsals</p> <p>Tarsals</p> <p>Medial cuneiform</p> <p>Intermediate cuneiform</p> <p>Navicular</p> <p>Talus</p> <p>Trochlea of talus</p> <p>Lateral cuneiform</p> <p>Cuboid</p> <p>Calcaneus</p> <p>(a) Superior view</p>

6. METATARSALS and PHALANGES

-Metatarsals (5 foot bones) known as 1-V, starting medially

-Phalanges – Proximal (I-V), Middle (II-V, absent in the big toe), & Distal (I-V):



All phalanges have a proximal, middle and distal phalanx, with the exception of the big toes. The “big toe” will only have a proximal and a distal phalanx.