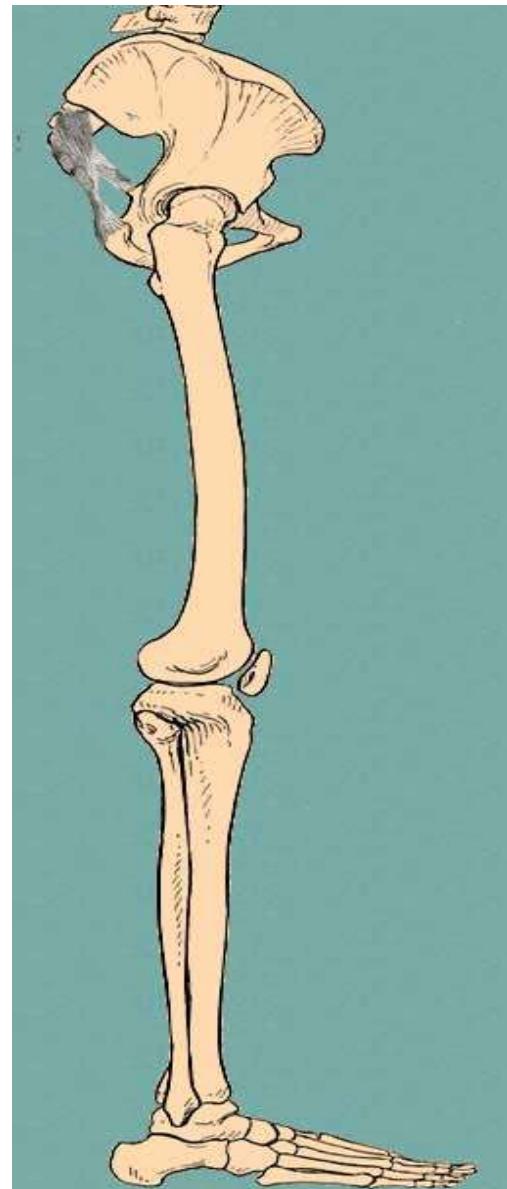
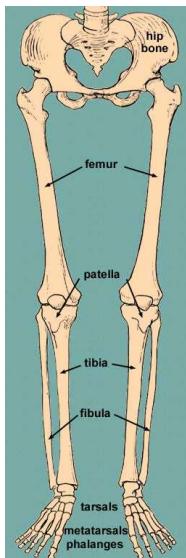


## THE PELVIC GIRDLE AND INFERIOR APPENDAGES



DANIL HAMMOUDI.MD

There are 32 bones found in the lower limb:

- hip bone (1)    hip bones= os coxae
- femur (1)
- patella (1)
- tibia (1)
- fibula (1)
- tarsals (8)
- metatarsals (5)
- proximal phalanges (5)
- intermediate phalanges (5)
- distal phalanges (4)

The big toe (hallux) only has 2 phalanges

There are also 2 extra bones in the foot, called sesamoid bones.

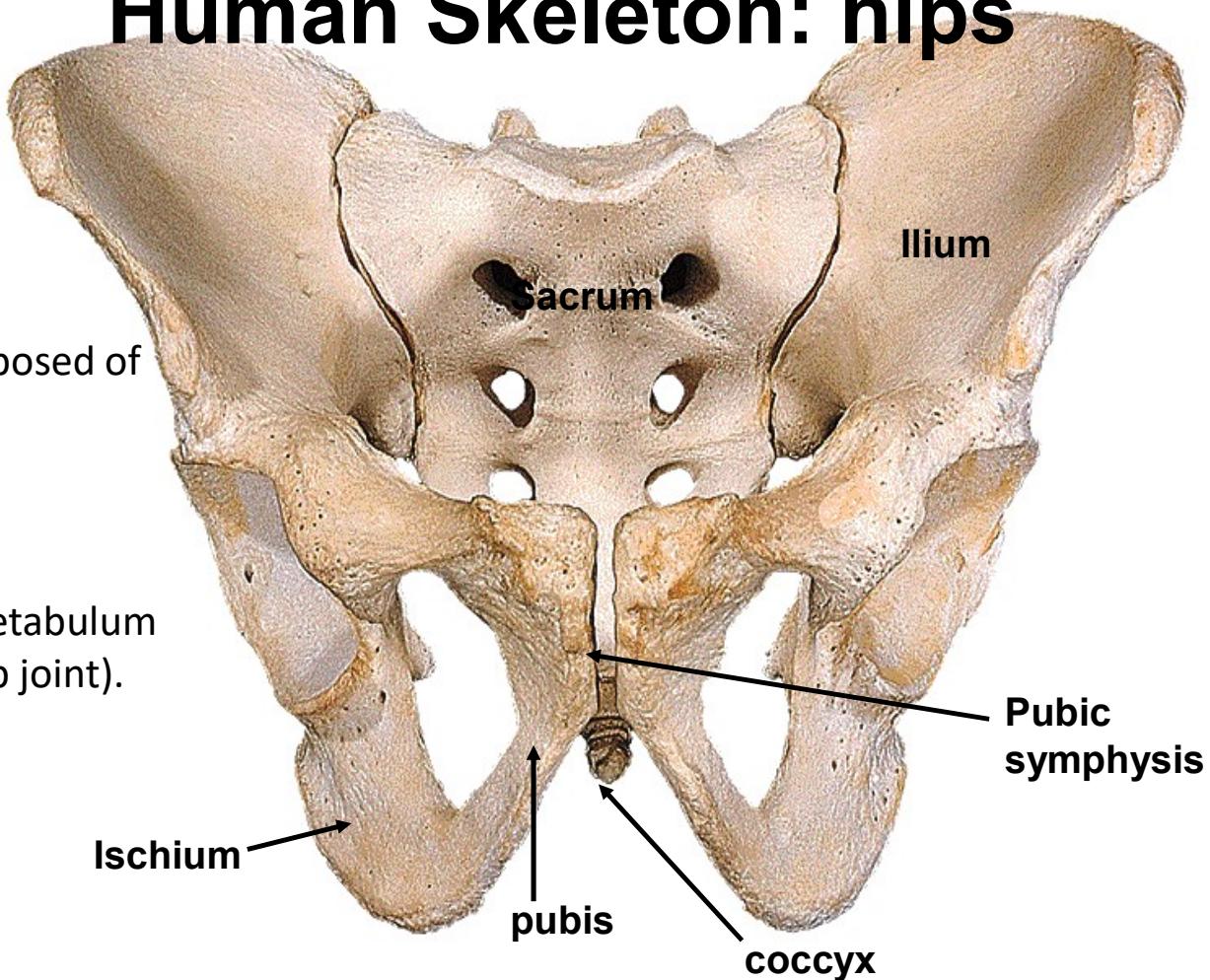
These small bones develop within the tendon of the flexor hallucis longus muscle to the big toe

# Human Skeleton: hips

The hip bone is composed of three elements:

- the ilium
- ischium
- and pubis

which fuse at the acetabulum (the socket of the hip joint).



# Pelvic Girdle (Hip)

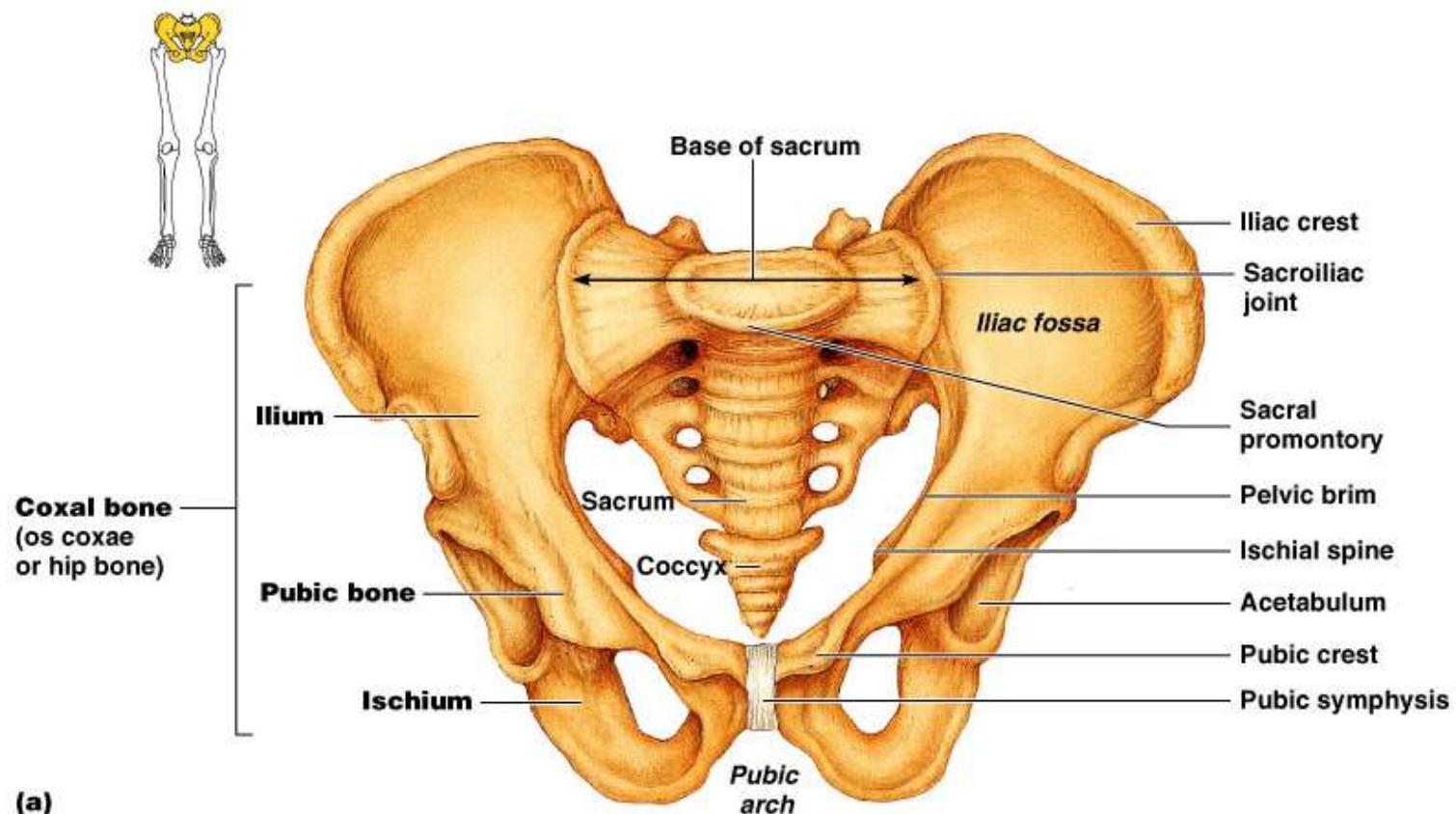
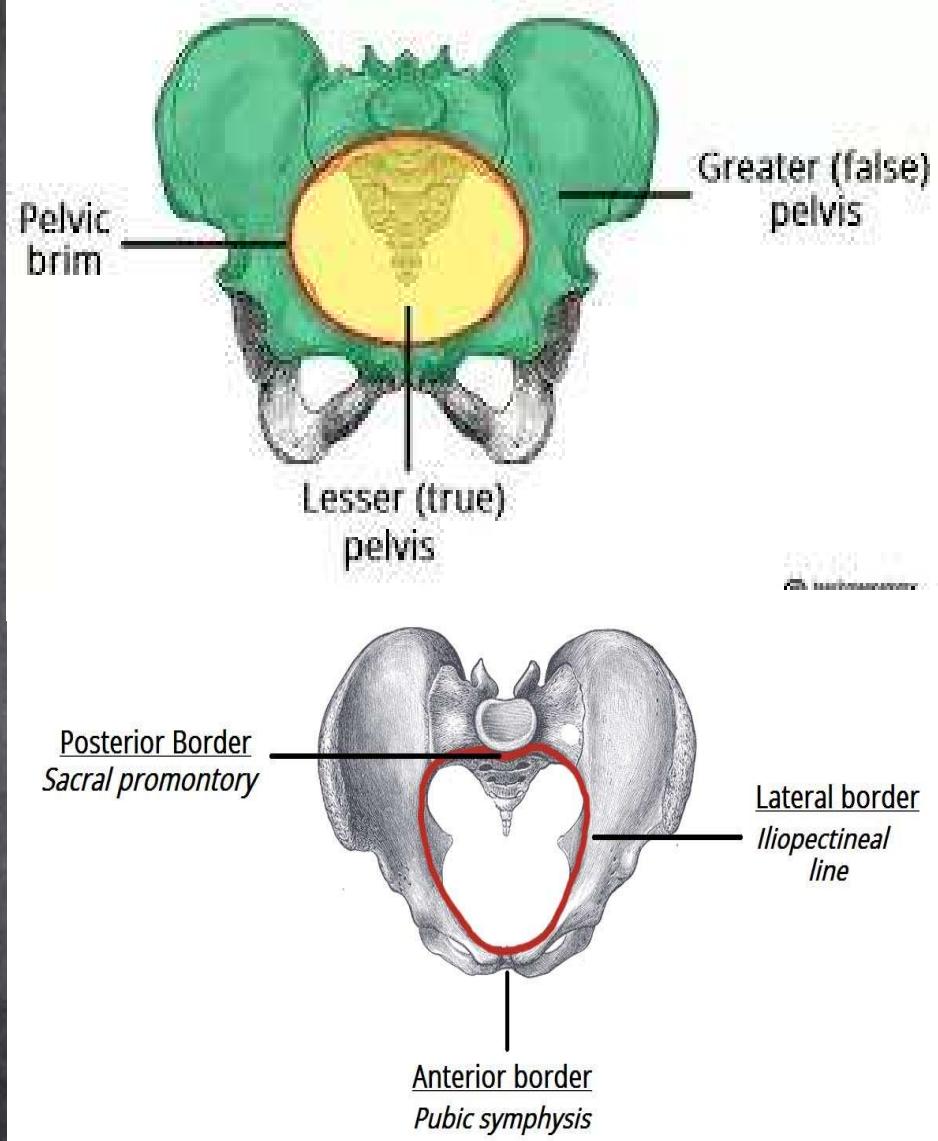


Figure 7.27a



# Comparison of Male and Female Pelvis

## Comparison of the Male and Female Pelves

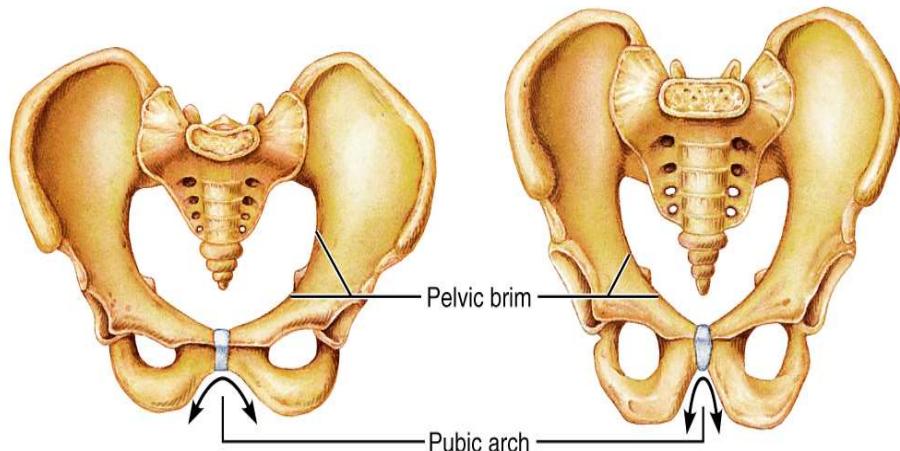
| CHARACTERISTIC       | FEMALE   | MALE   |
|----------------------|--|--|
| Sacrum               | Wider; shorter; sacral curvature is accentuated  | Narrow; longer; sacral promontory more ventrally   |
| Coccyx               | More movable; straighter   | Less movable; curves ventrally   |
| Left lateral view    |  A photograph of a female pelvis in left lateral view, showing the sacrum, ilium, and ischium bones.      |  A photograph of a male pelvis in left lateral view, showing the sacrum, ilium, and ischium bones.      |
| Pelvic inlet (brim)  | Wider; oval from side to side  | Narrow; basically heart shaped   |
| Pelvic outlet        | Wider; ischial tuberosities shorter, farther apart and everted   | Narrower; ischial tuberosities longer, sharper and point more medially   |
| Posteroinferior view |  A photograph of a female pelvis in posteroinferior view, showing the sacrum, ilium, and ischium bones. |  A photograph of a male pelvis in posteroinferior view, showing the sacrum, ilium, and ischium bones. |

# Comparison of Male and Female Pelvis

## Comparison of the Male and Female Pelves

| CHARACTERISTIC                                 | FEMALE   | MALE  |
|--|--|---|
| General structure and functional modifications | Tilted forward; adapted for childbearing; true pelvis defines the birth canal; cavity of the true pelvis is broad, shallow, and has a greater capacity | Tilted less far forward; adapted for support of a male's heavier build and stronger muscles; cavity of the true pelvis is narrow and deep |
| Bone thickness                                 | Less; bones lighter, thinner, and smoother   | Greater; bones heavier and thicker, and markings are more prominent   |
| Acetabula                                      | Smaller; farther apart   | Larger; closer  |
| Pubic arch/angle                               | Broader (80–90°); more rounded   | More acute (50–60°)   |

Anterior view

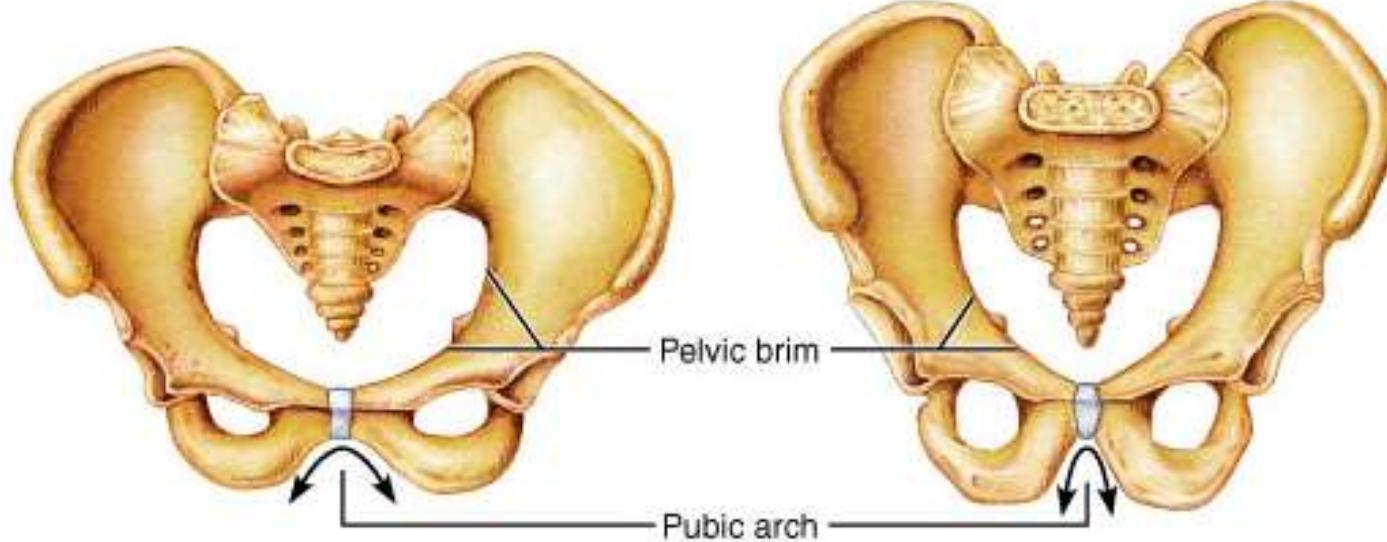


## PREGNANCY CHANGES THE PELVIS FOREVER.

During pregnancy the body secretes a hormone known as relaxin to help the body accommodate the growing baby and soften the cervix. However, the pubic symphysis, loosen and slightly separate during pregnancy and childbirth."

relaxin can make the joints too loose, causing a painful syndrome known as symphysis pubis dysfunction (SPD), causing the pelvic joint to become unstable, causing pain and weakness in the pelvis, perineum and even upper thighs during walking and other activities. Many women with the condition have to wear a pelvic belt. It usually resolves after pregnancy is over, though physical therapy may be necessary

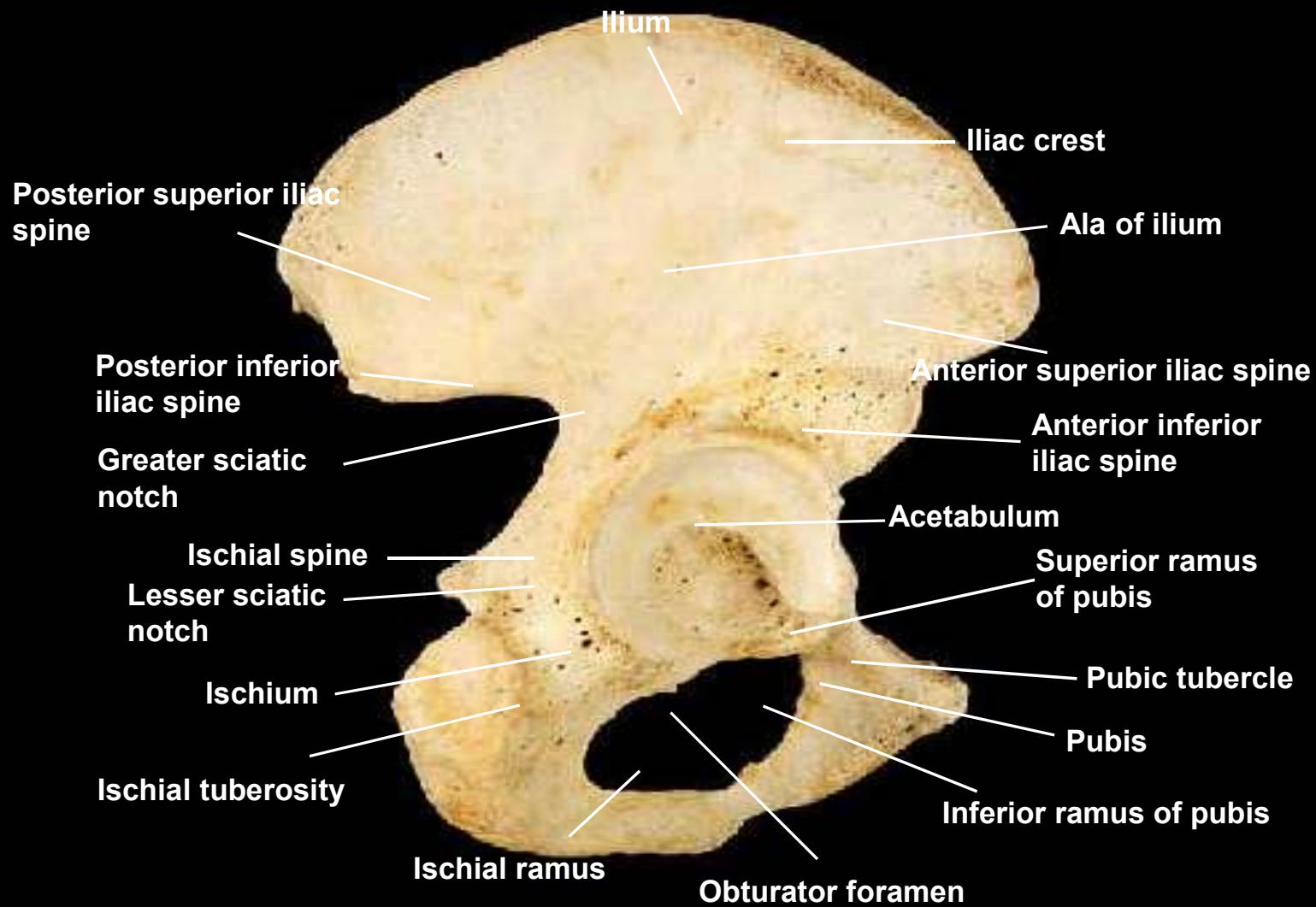
# Comparison of Male and Female Pelvic Structure

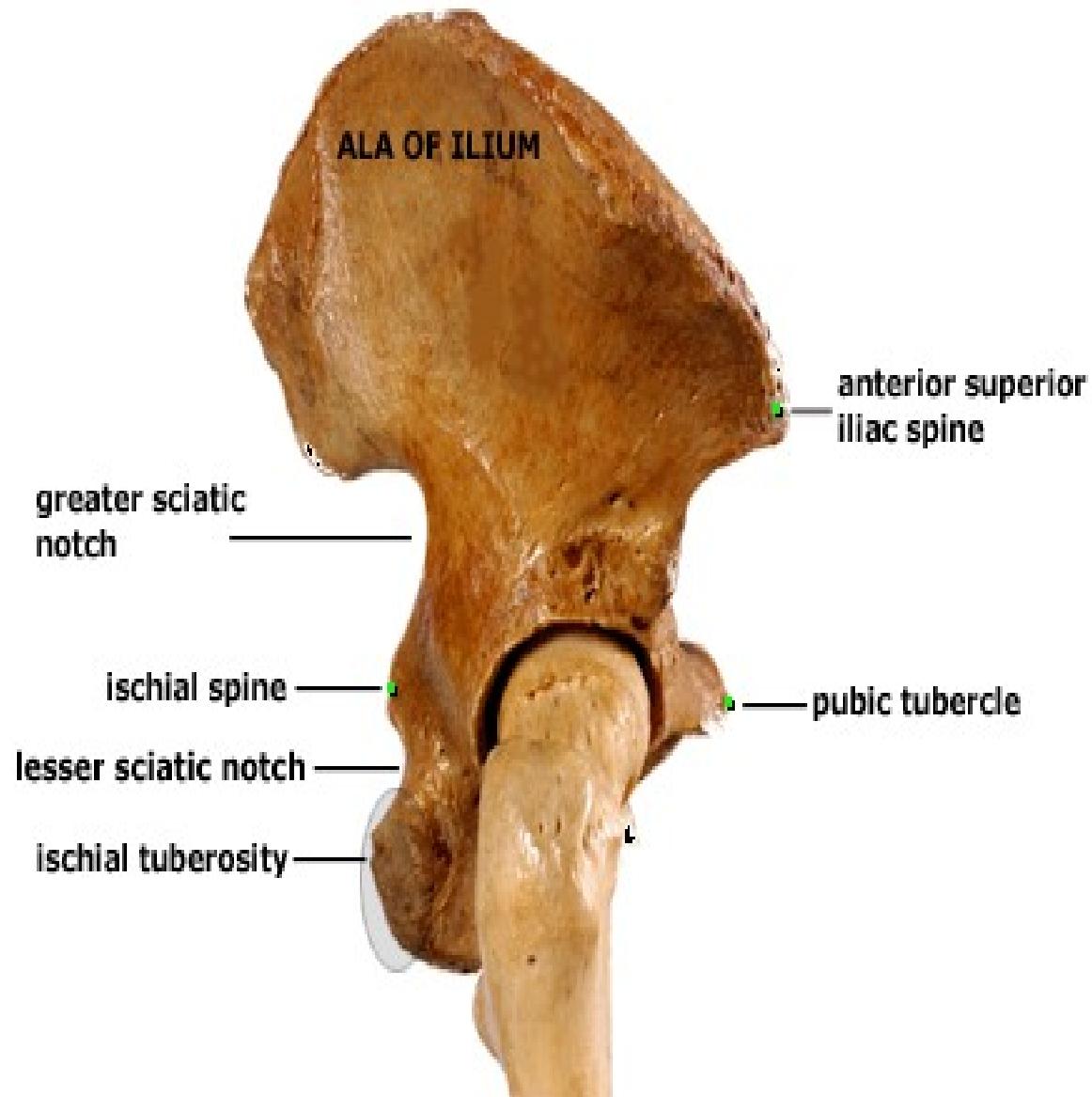
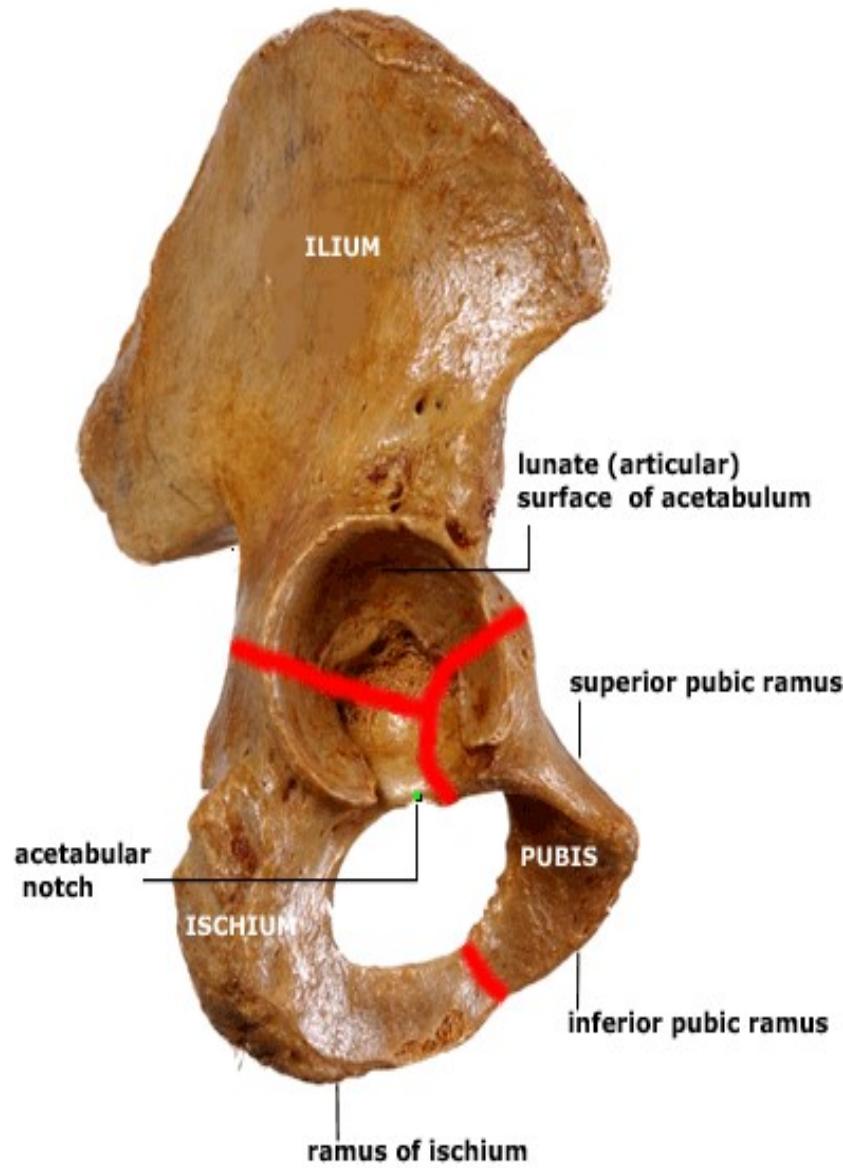


# Comparison of Male and Female Pelvic Structure

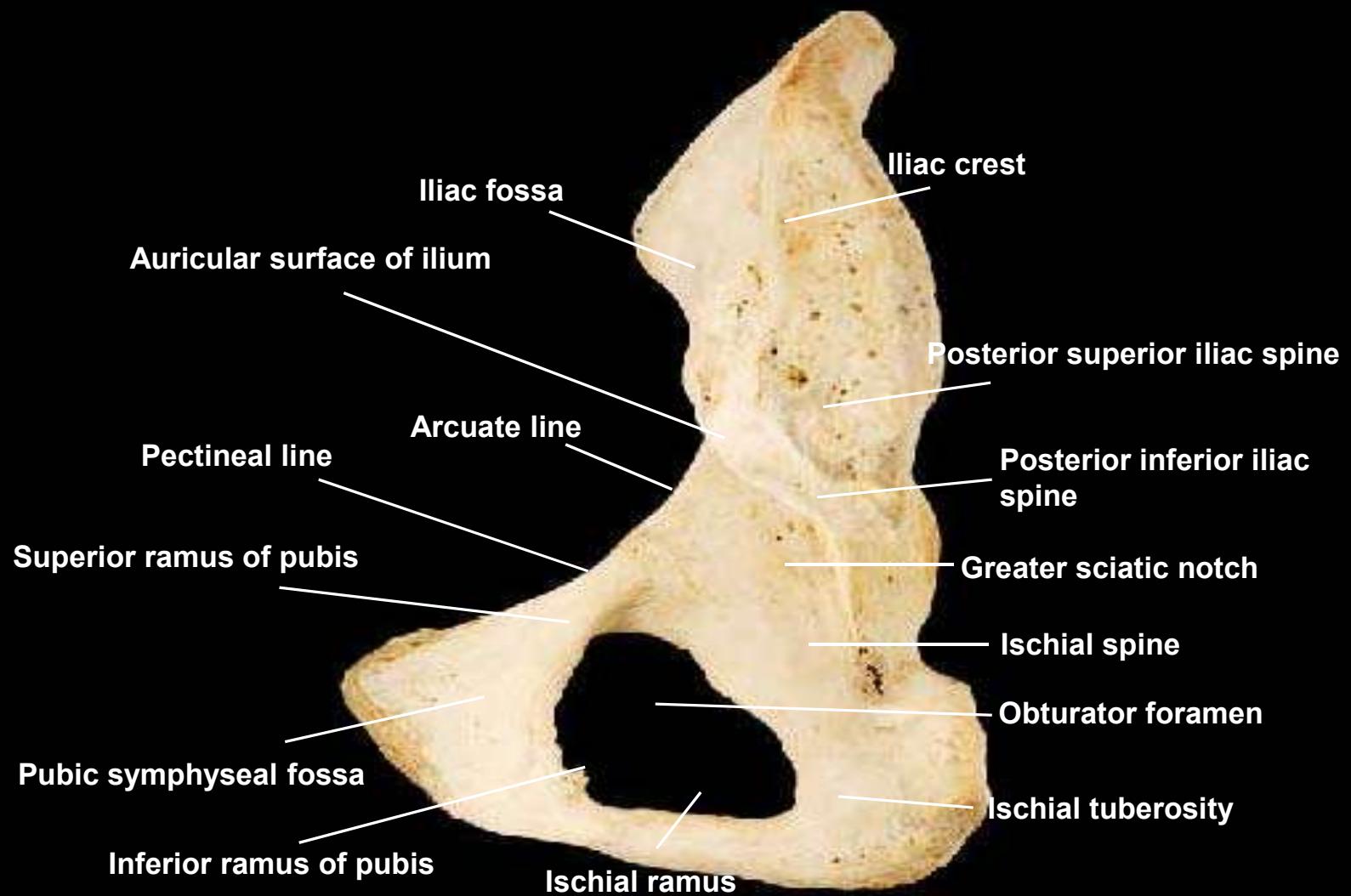
| Characteristic   | Female  | Male   |
|------------------|---|--|
| Bone thickness   | Lighter, thinner, and smoother                  | Heavier, thicker, and more prominent markings  |
| Pubic arch/angle | 80°–90°   | 50°–60°  |
| Acetabula        | Small; farther apart                            | Large; closer together                         |
| Sacrum           | Wider, shorter; sacral curvature is accentuated | Narrow, longer; sacral promontory more ventral |
| Coccyx           | More movable; straighter                        | Less movable; curves ventrally                 |

Hip bone, lateral view, right side

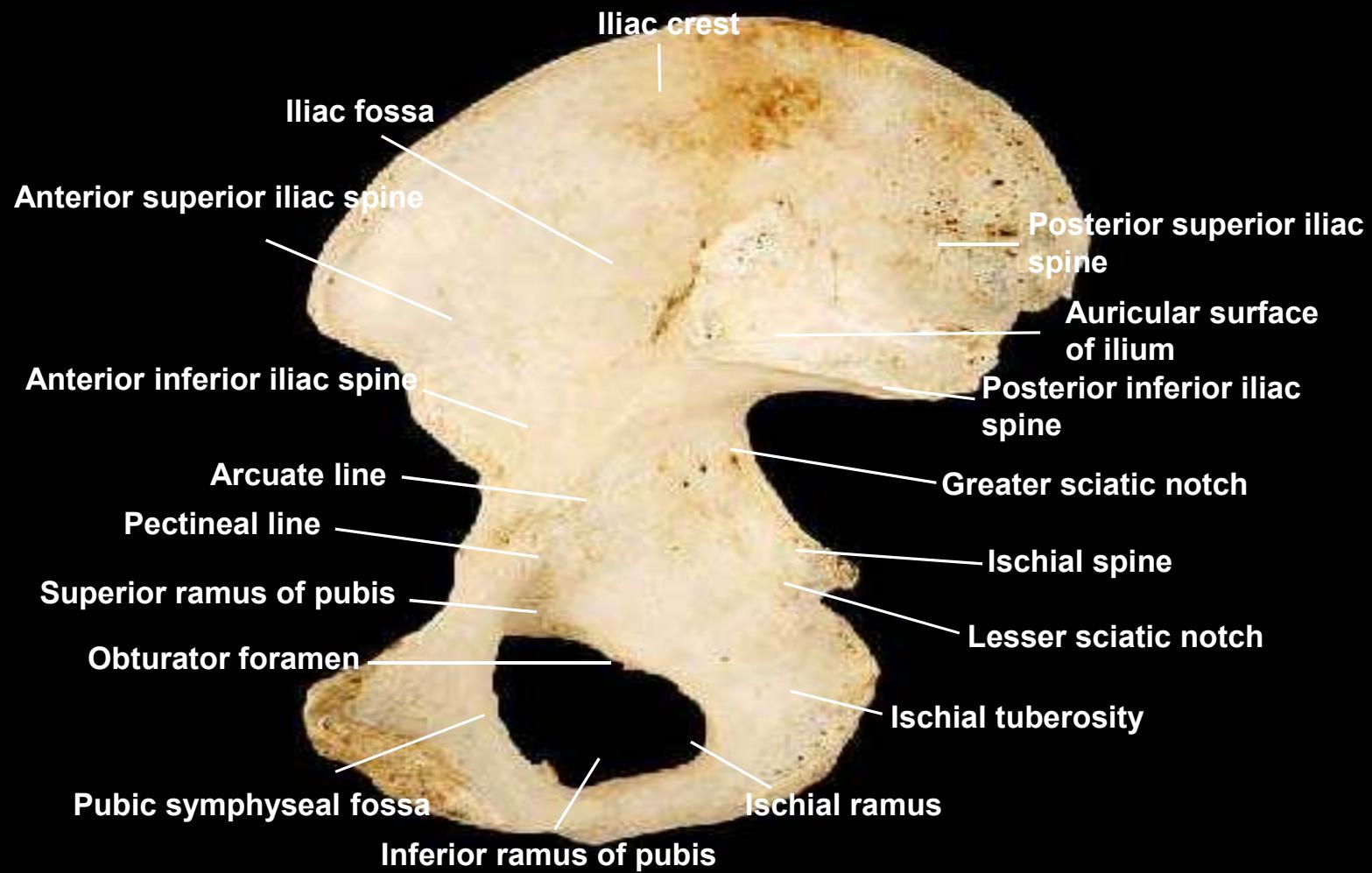


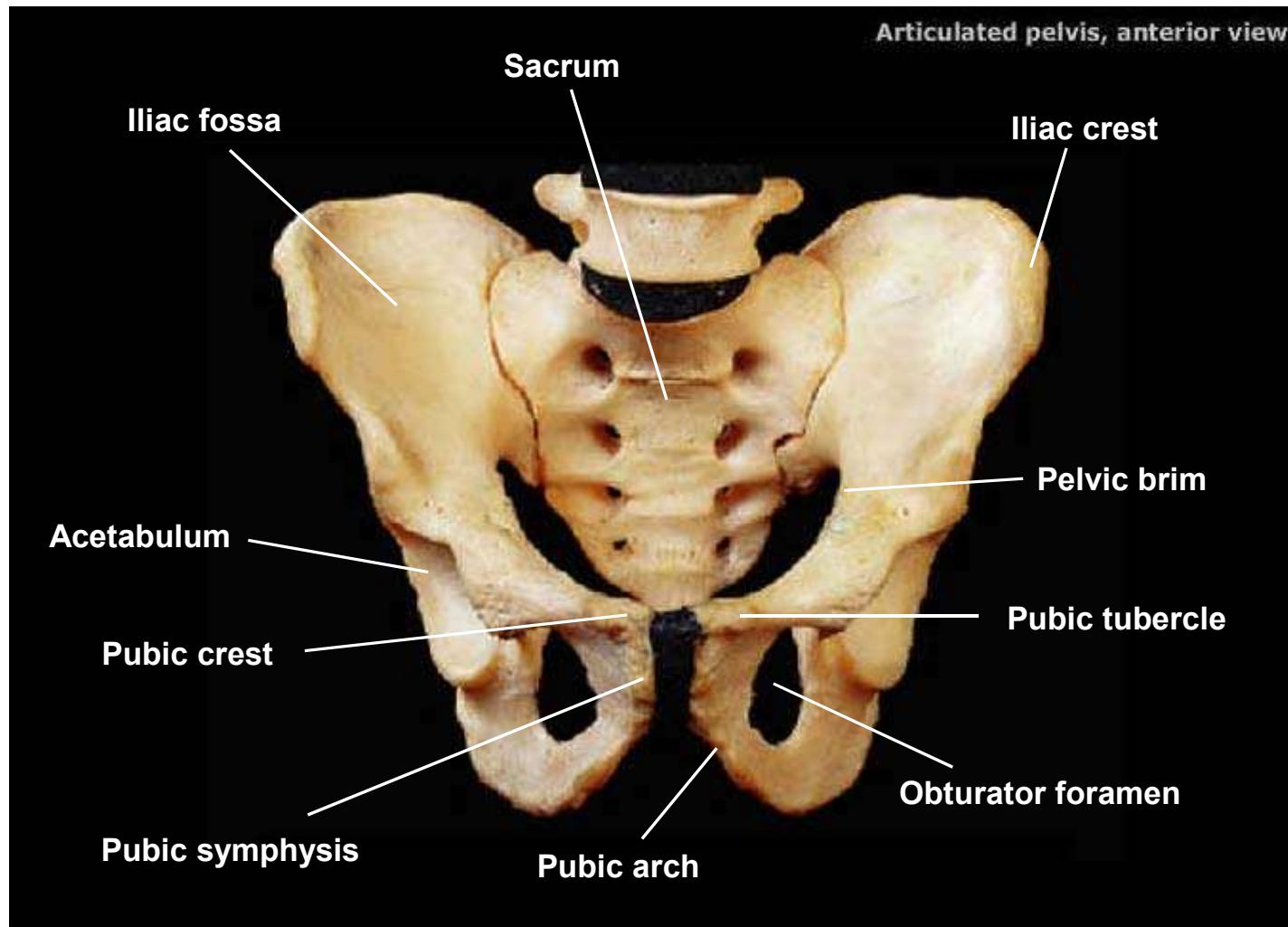


Hip bone, posteromedial view, right side

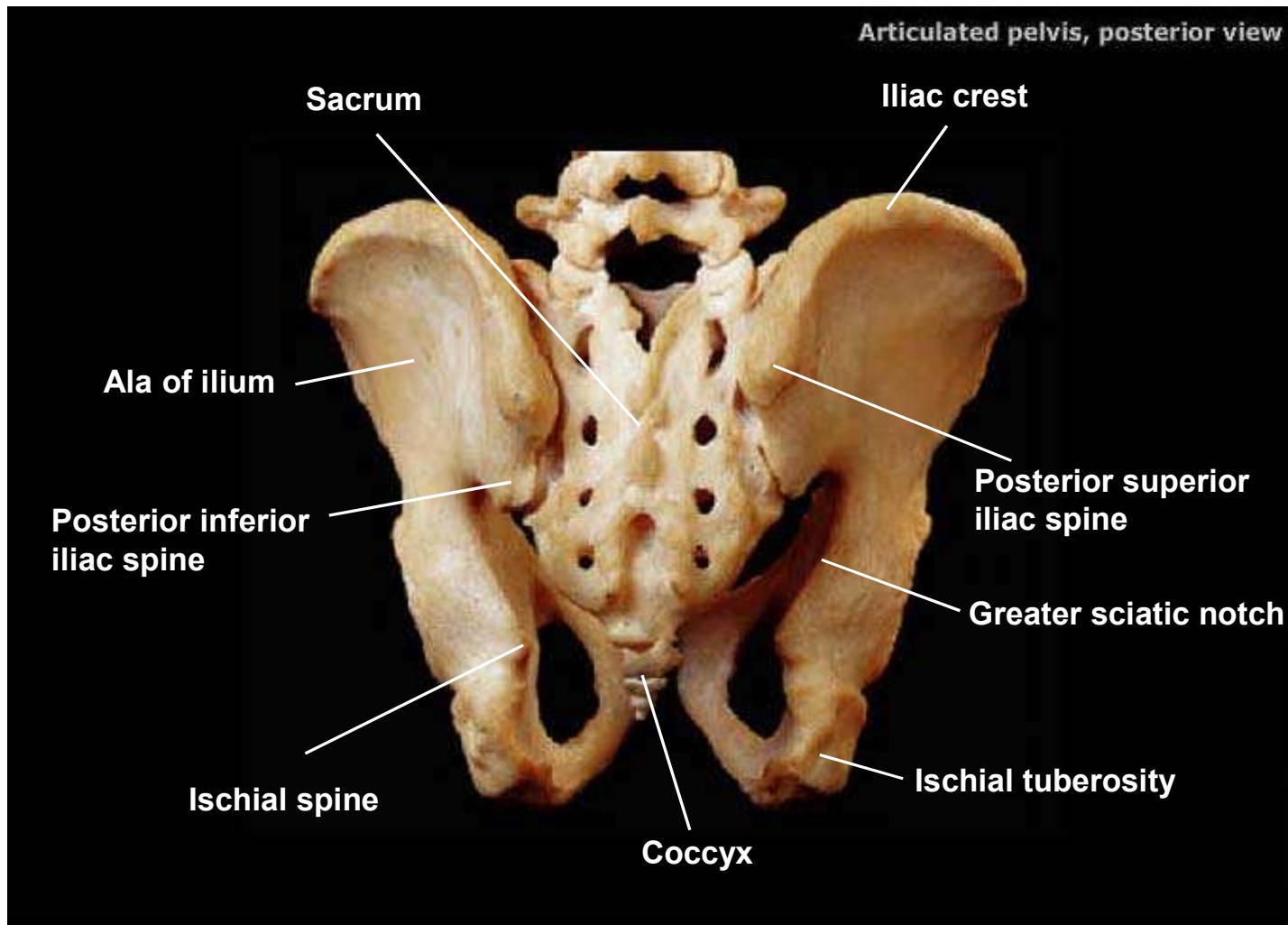


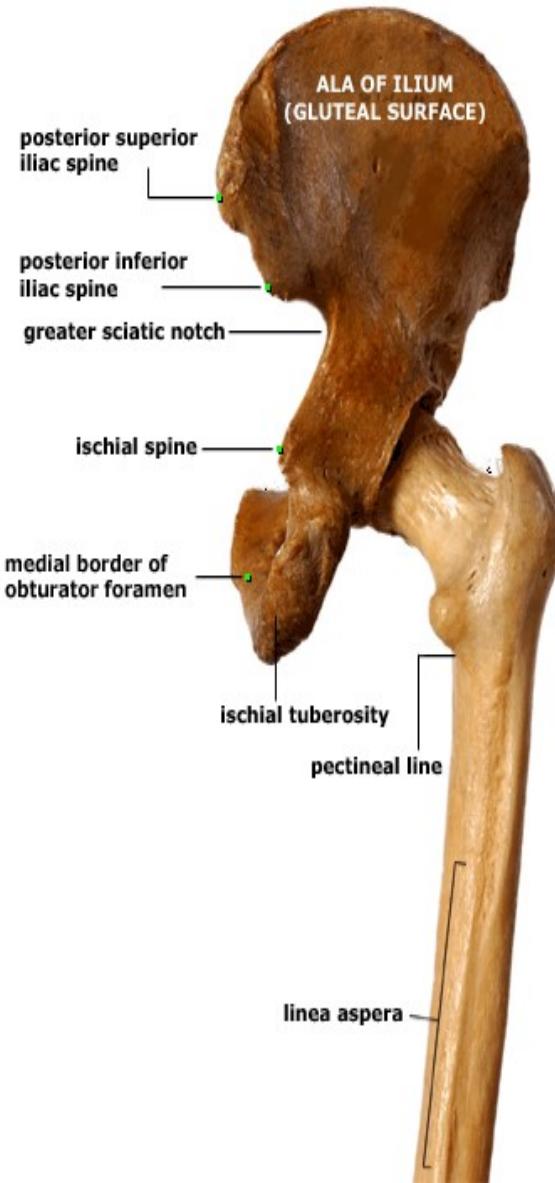
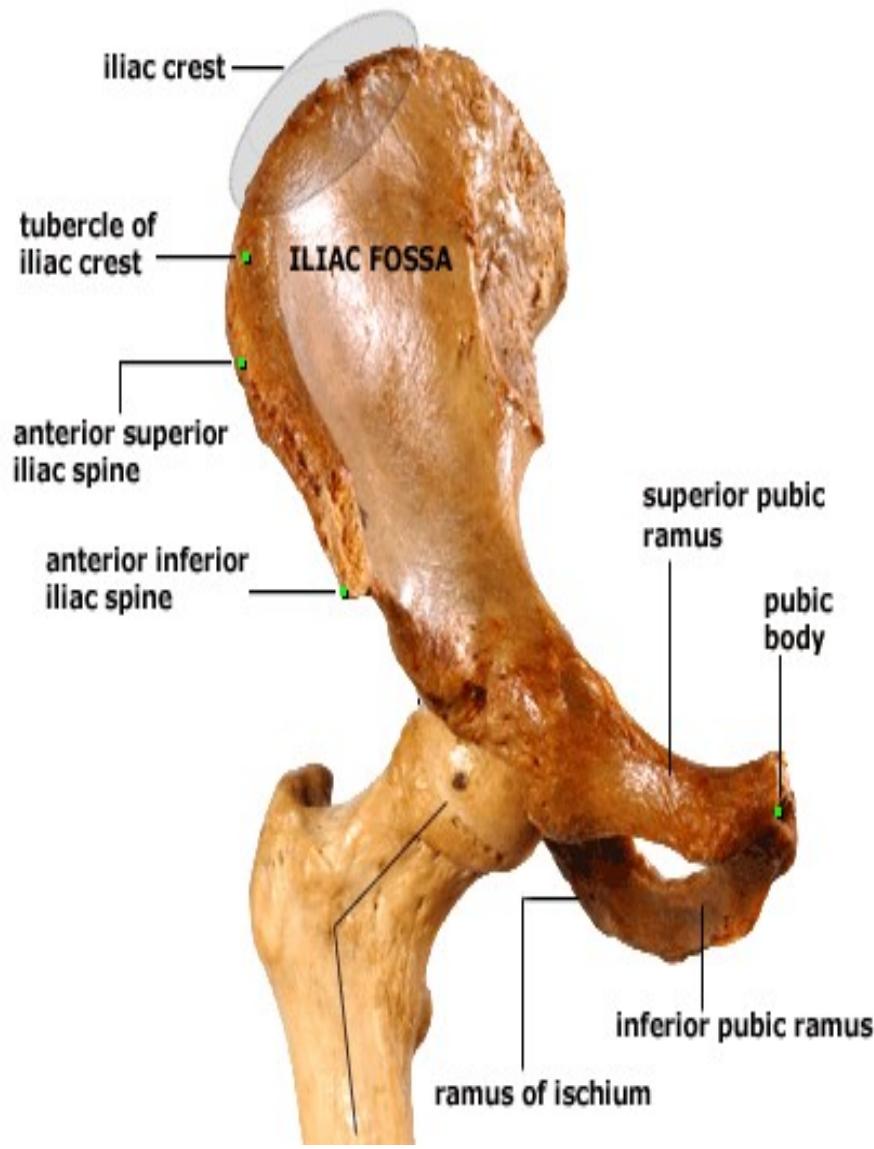
Hip bone, medial view, right side

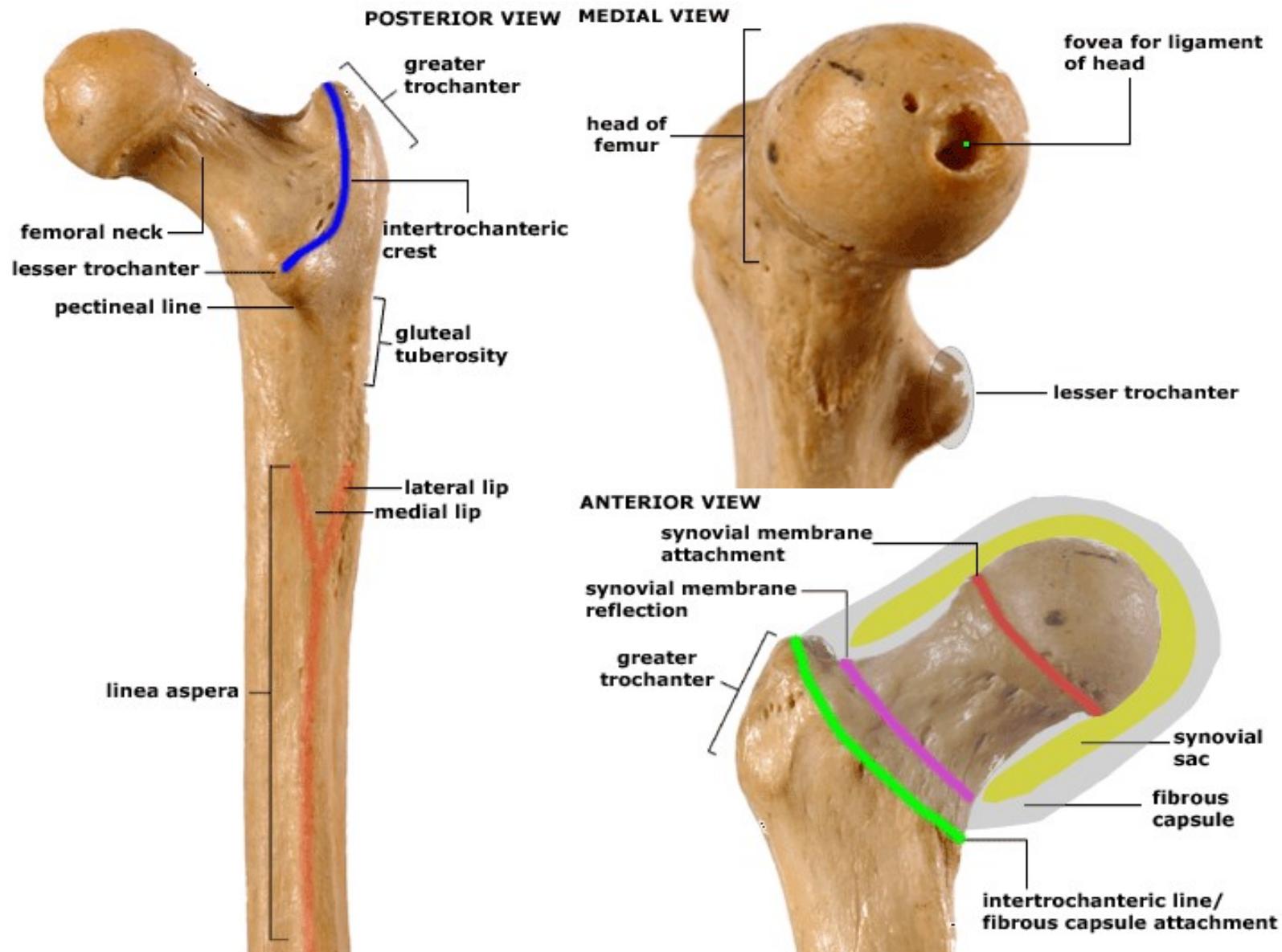




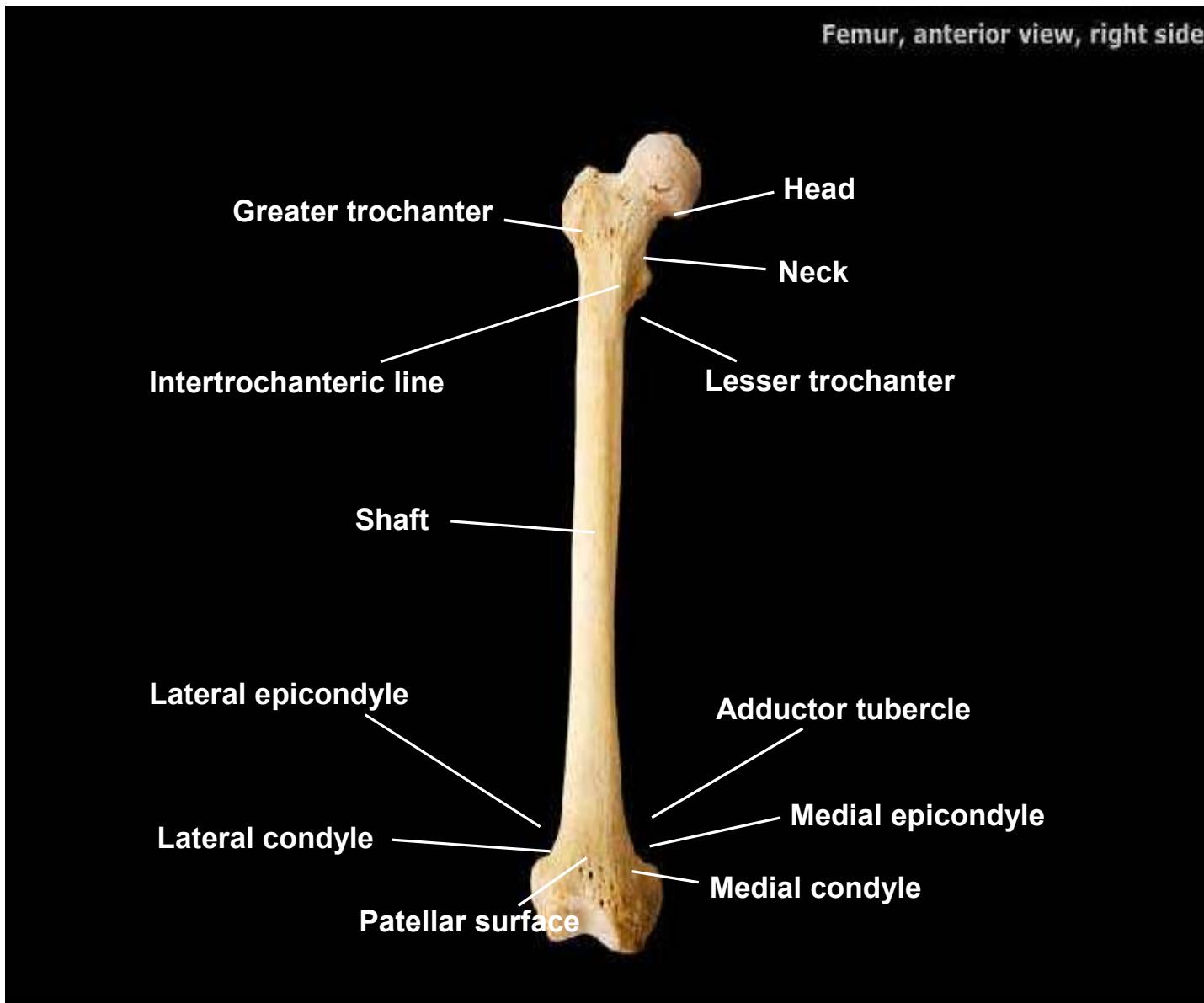
Articulated pelvis, posterior view



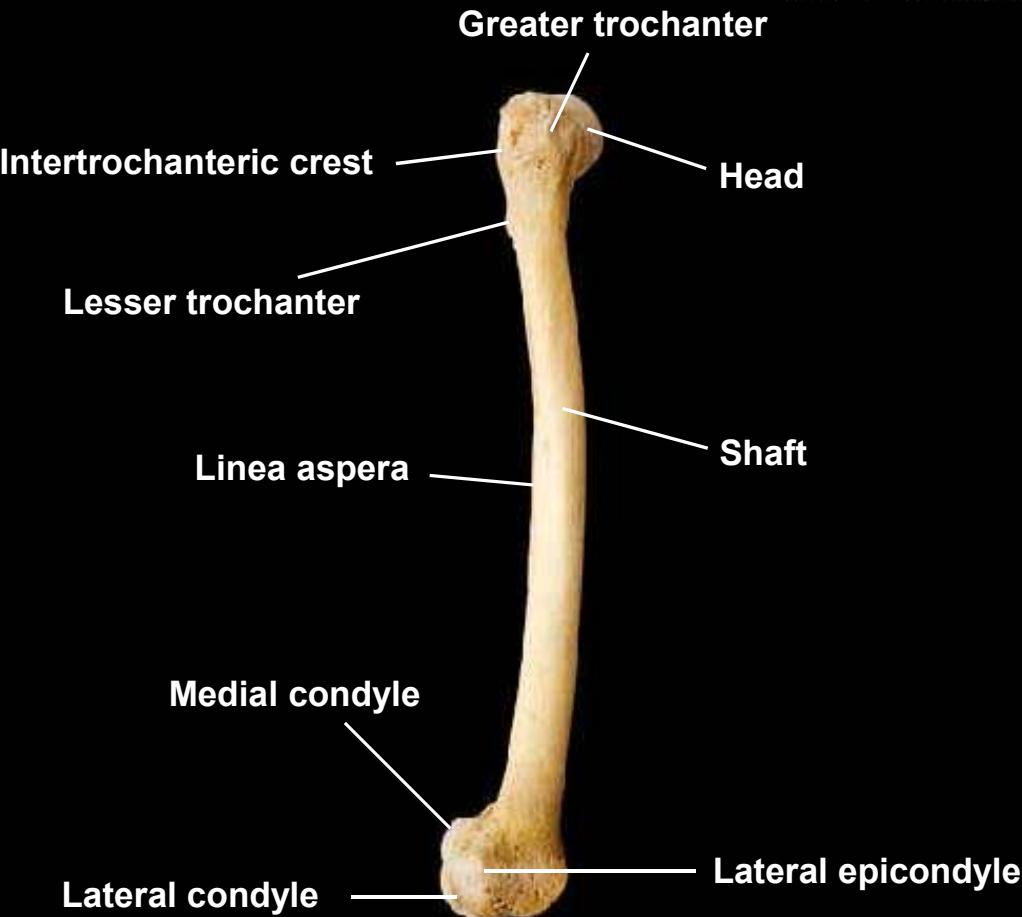




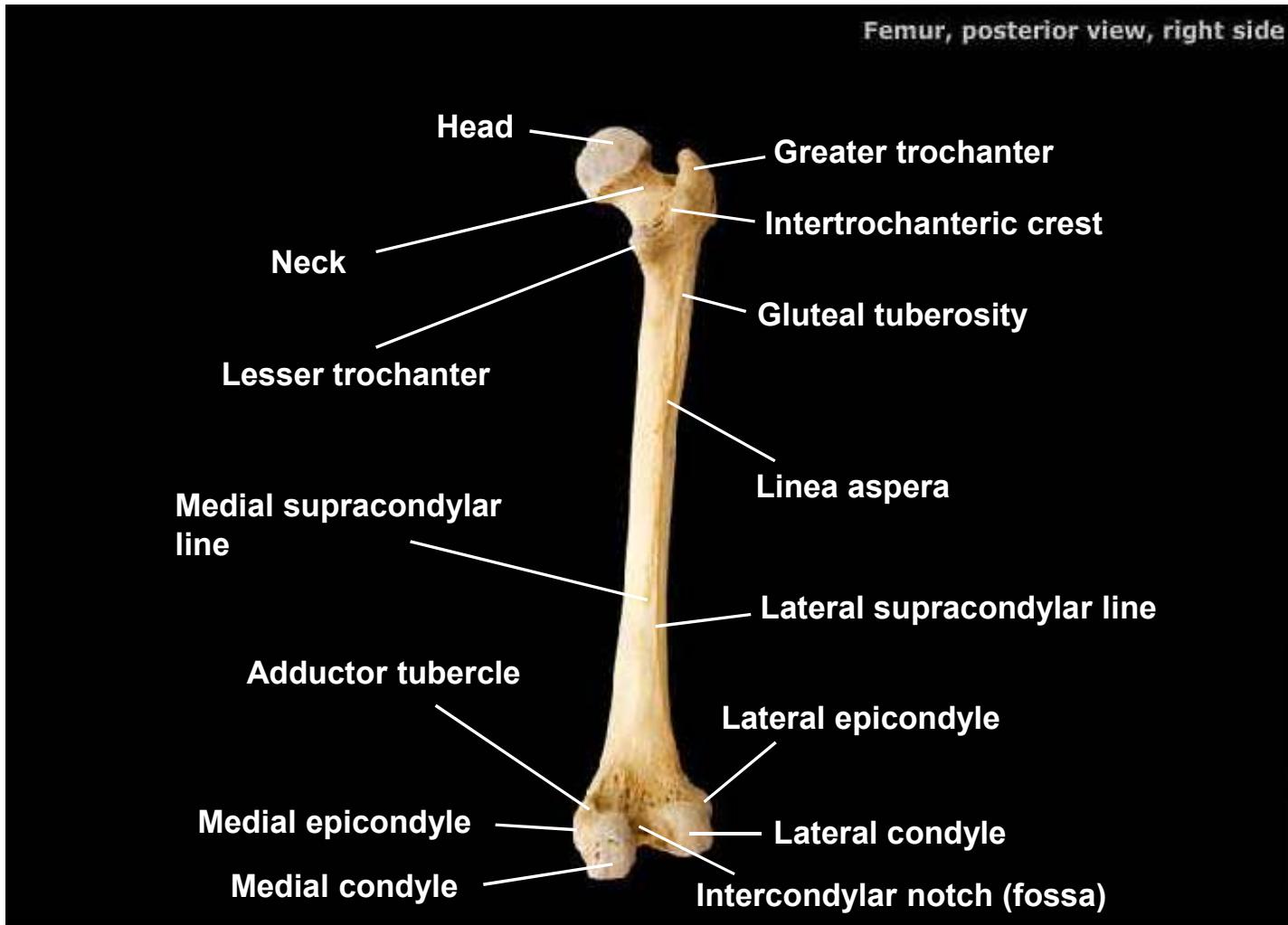
Femur, anterior view, right side



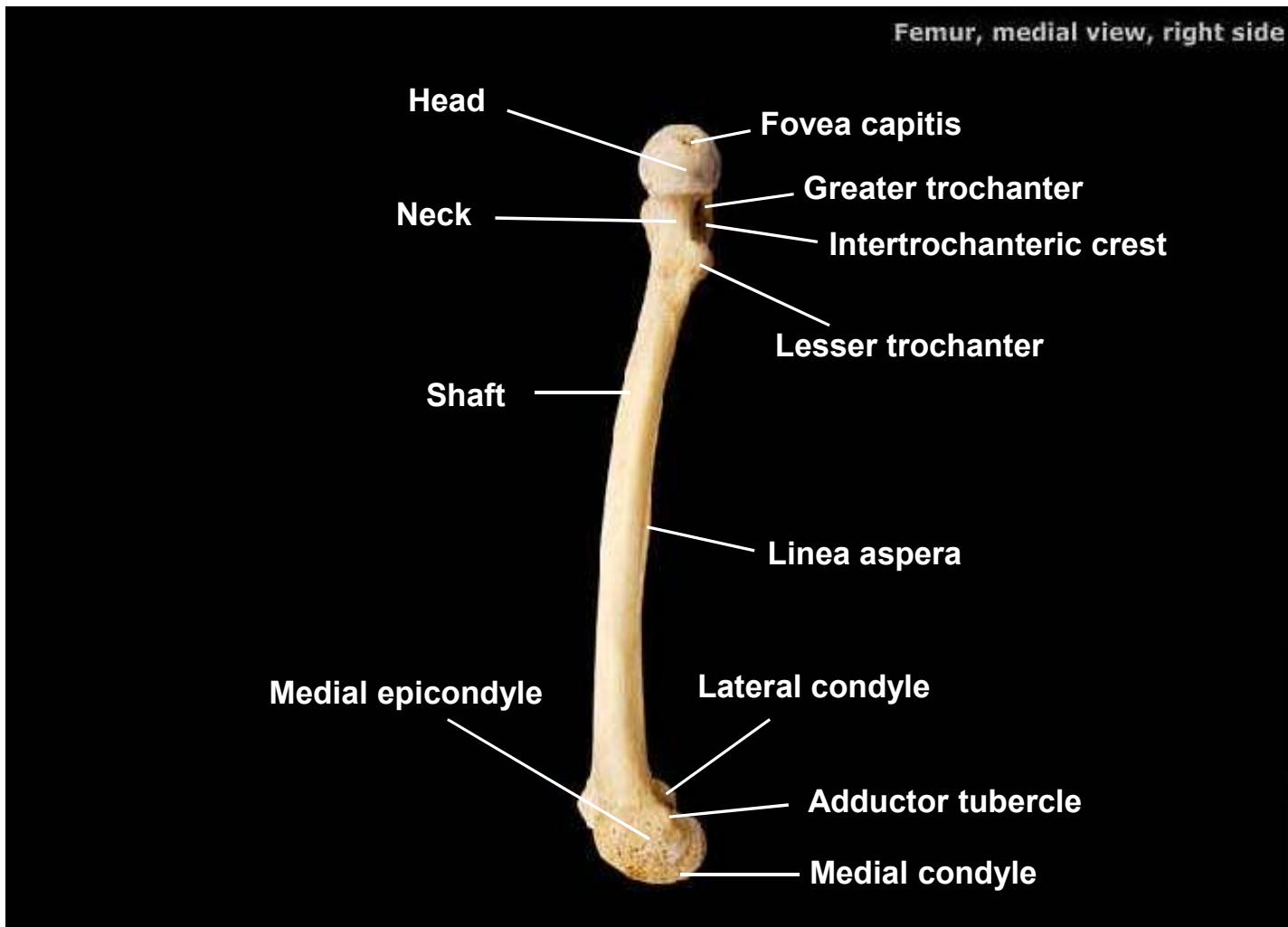
Femur, lateral view, right side

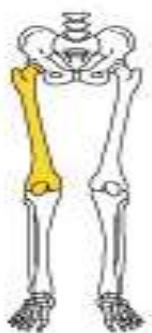


Femur, posterior view, right side

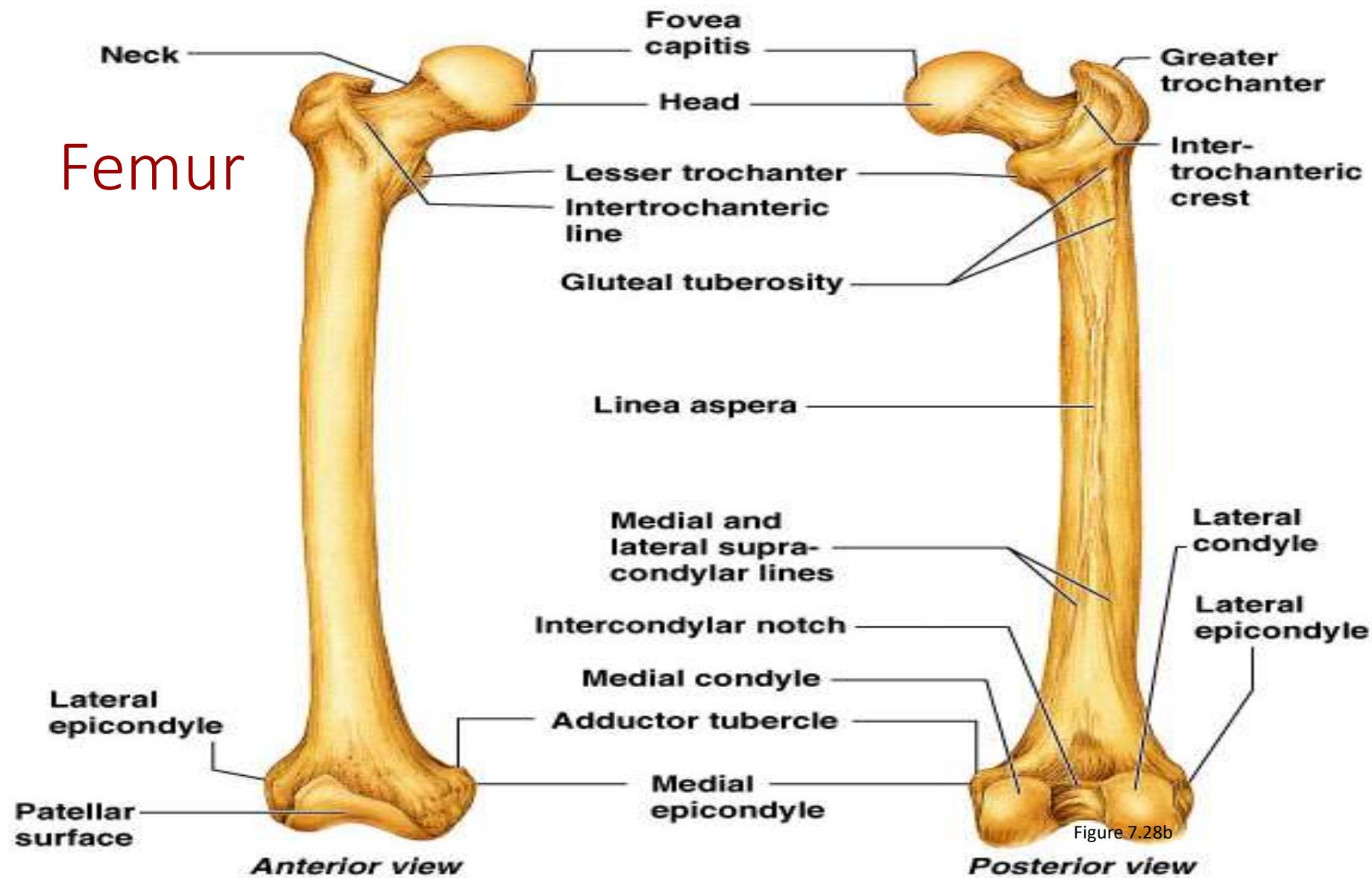


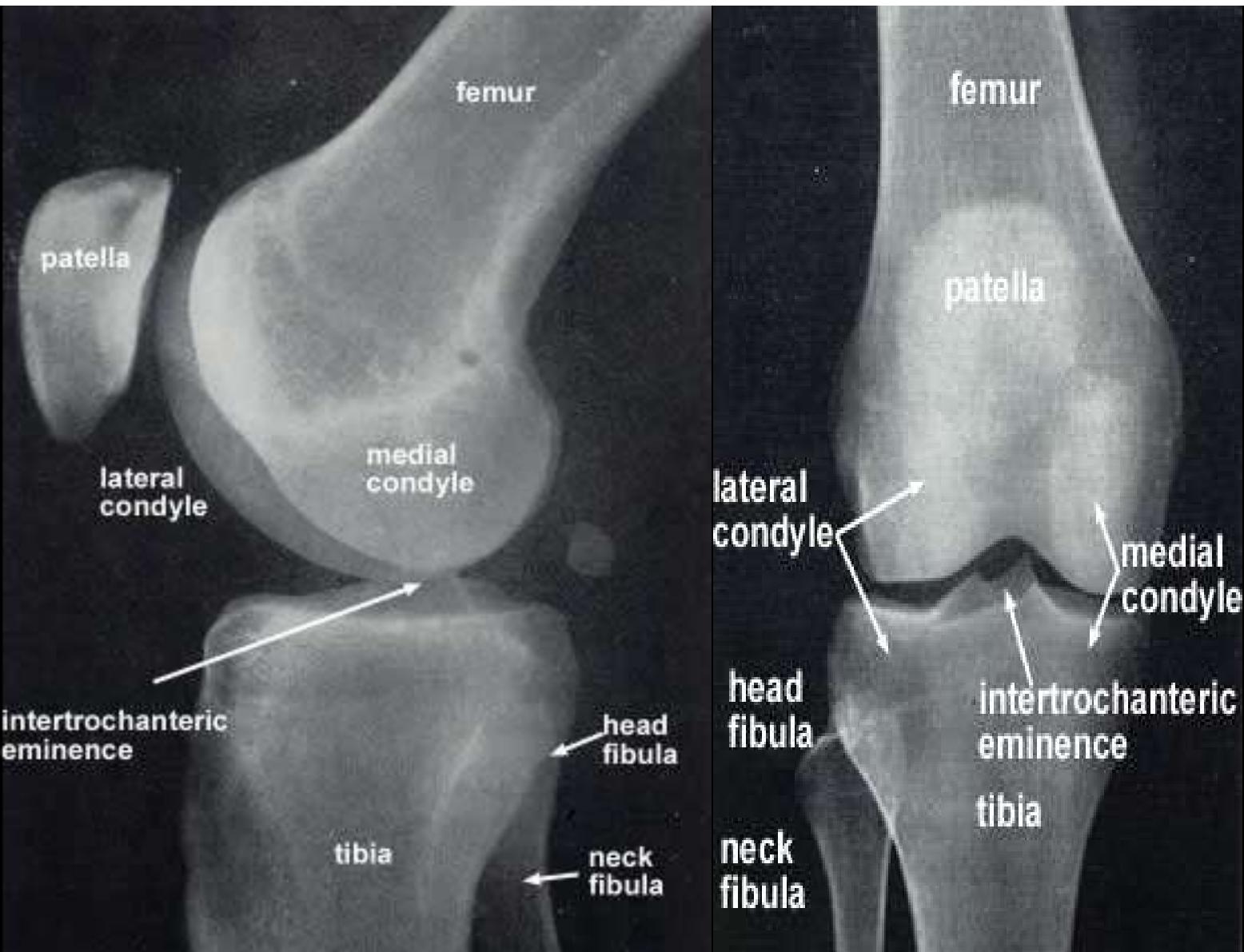
Femur, medial view, right side





# Femur

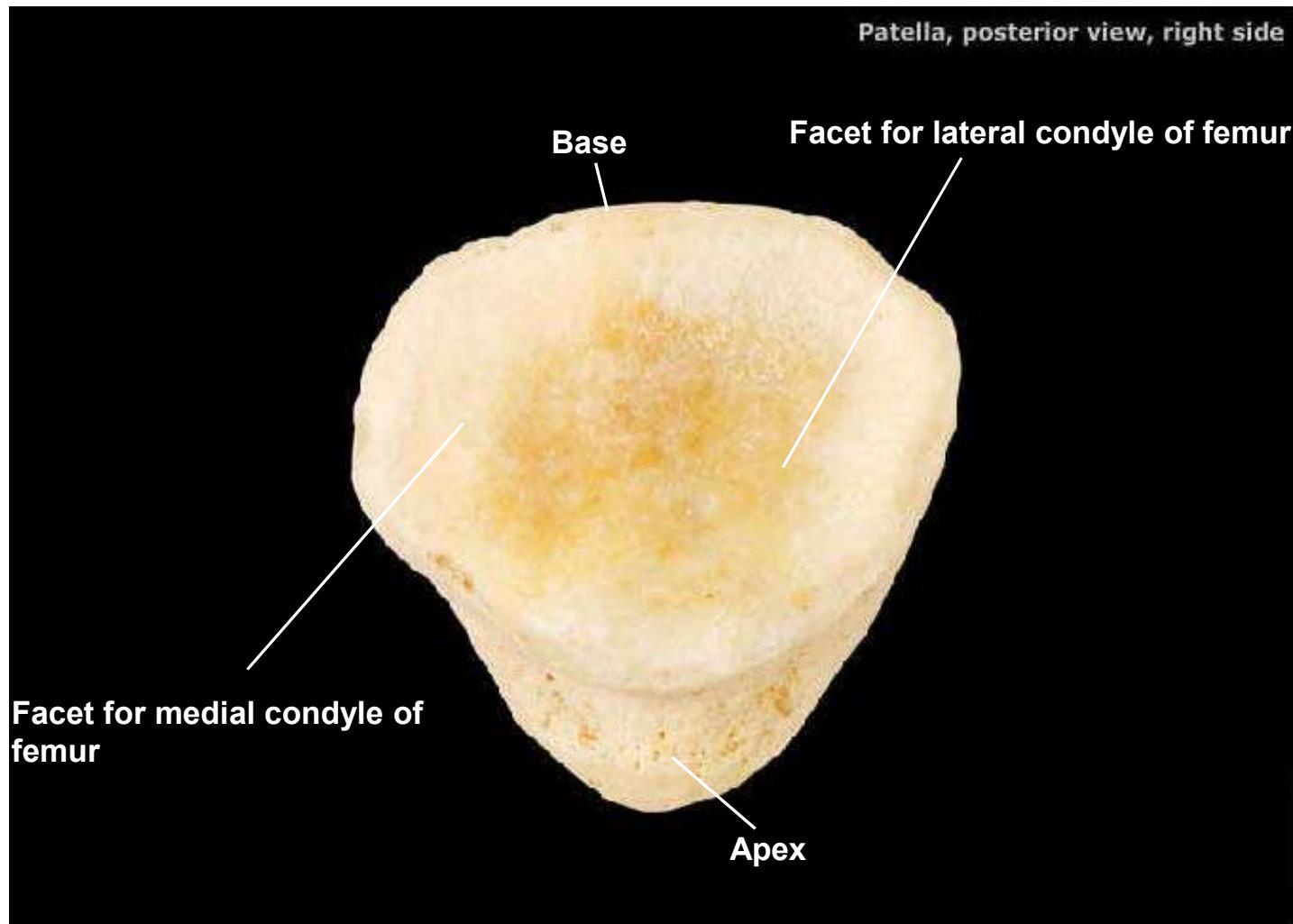


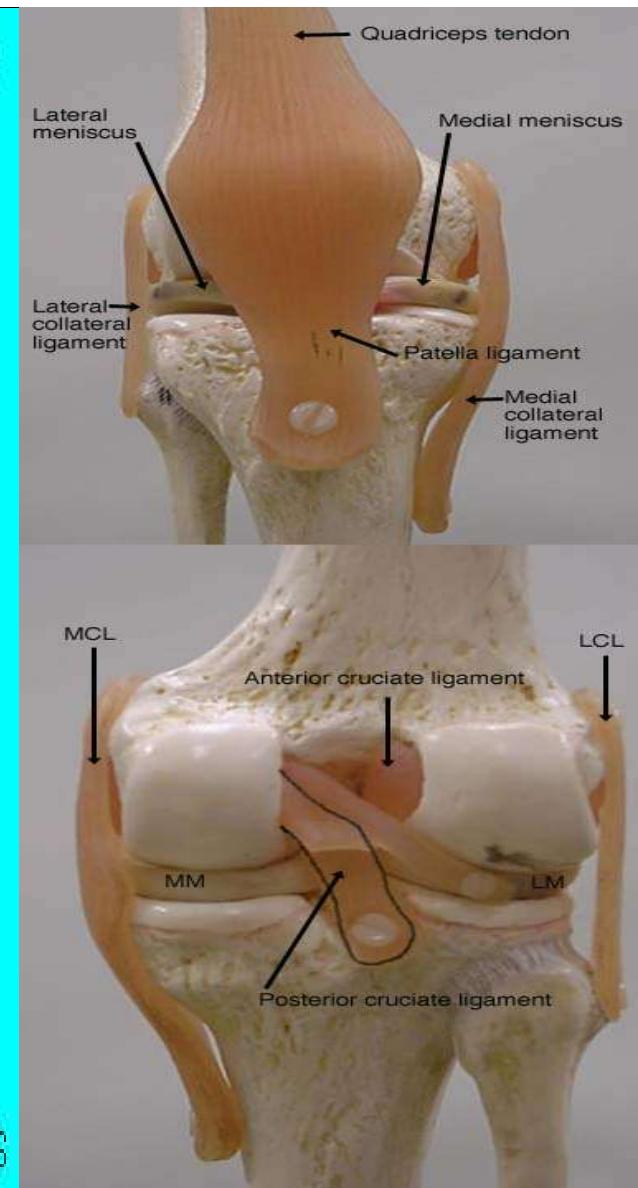
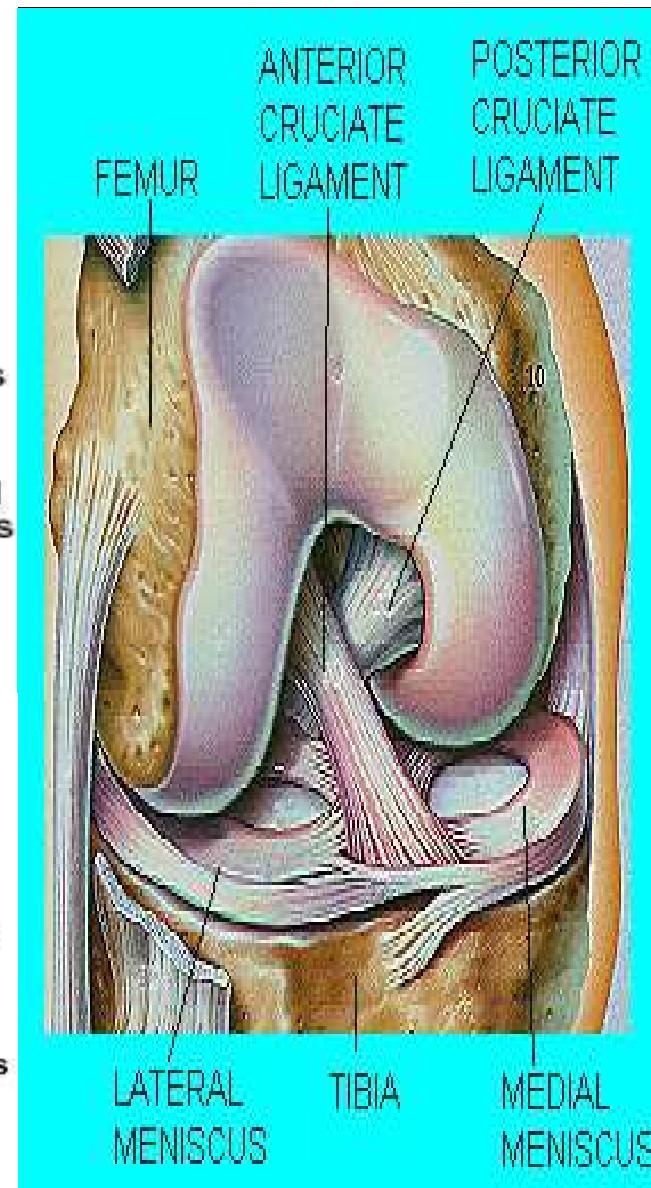
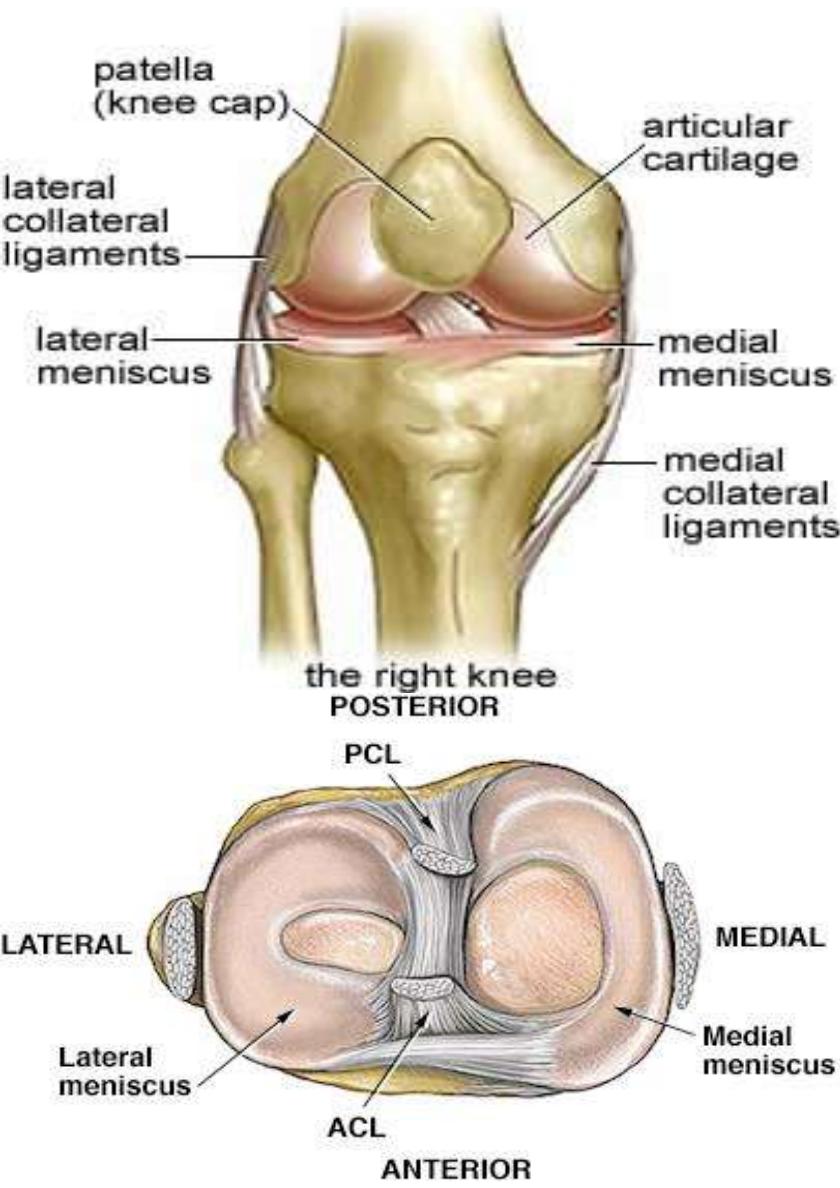


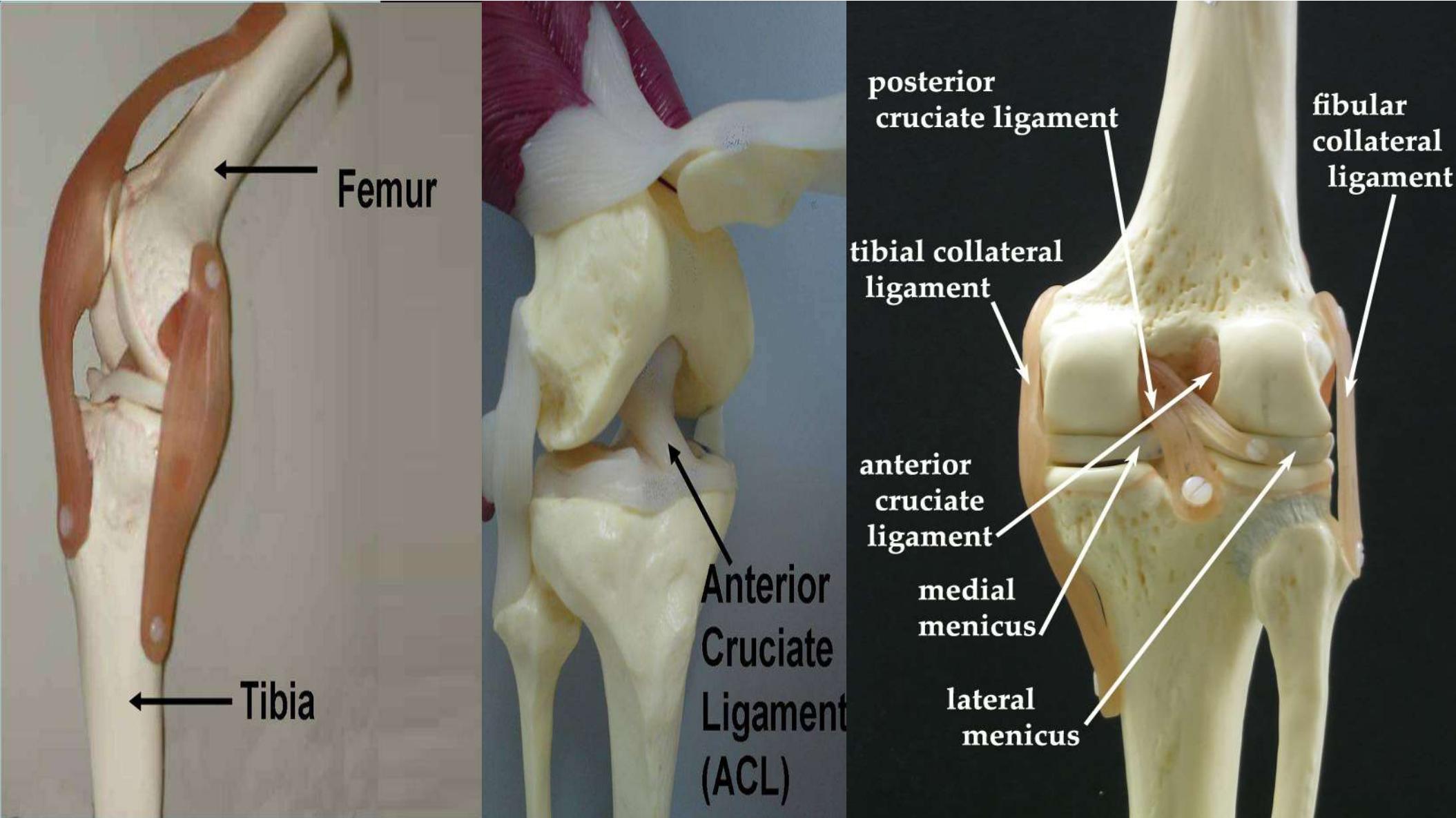
Patella, anterior view, right side

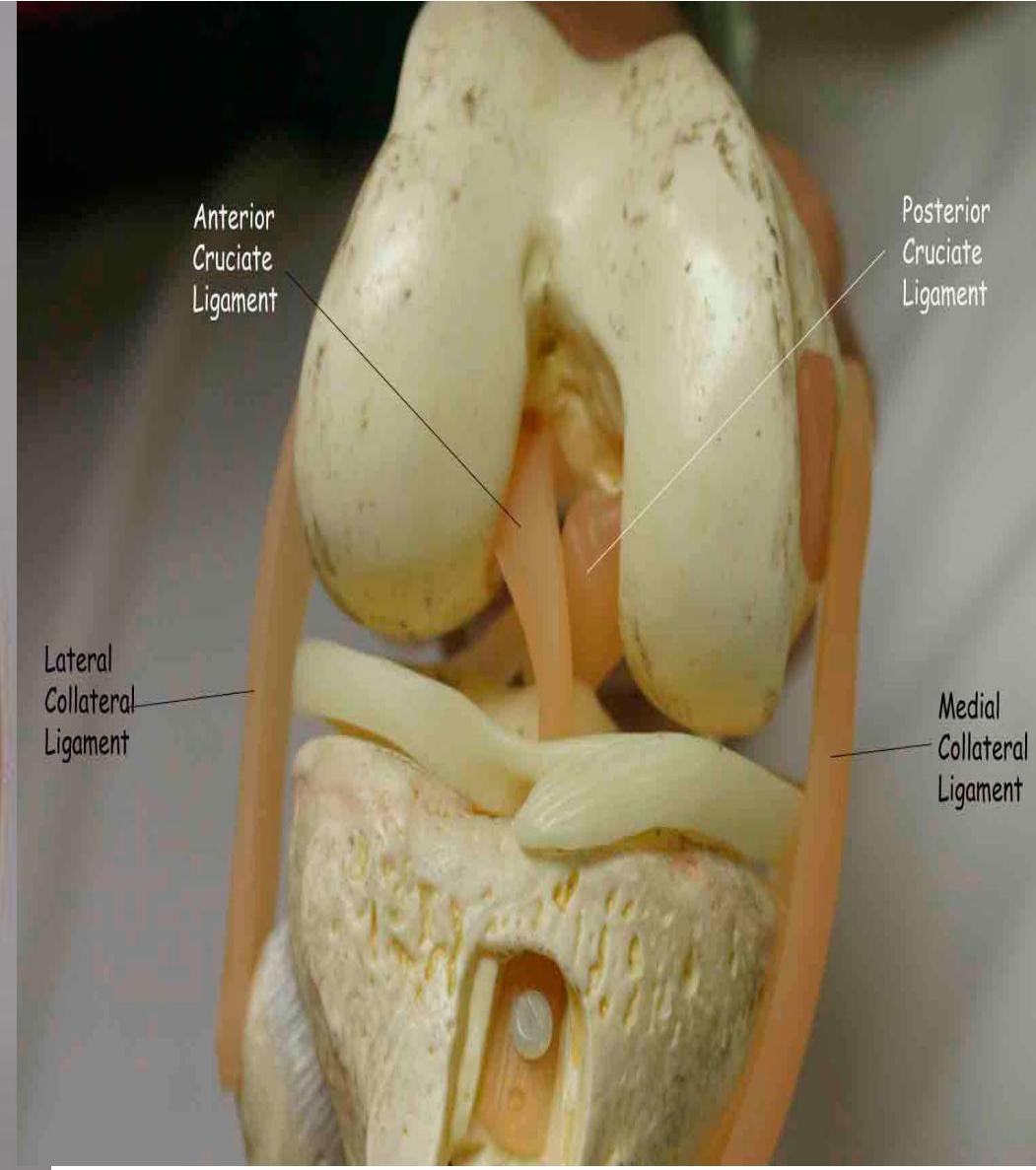
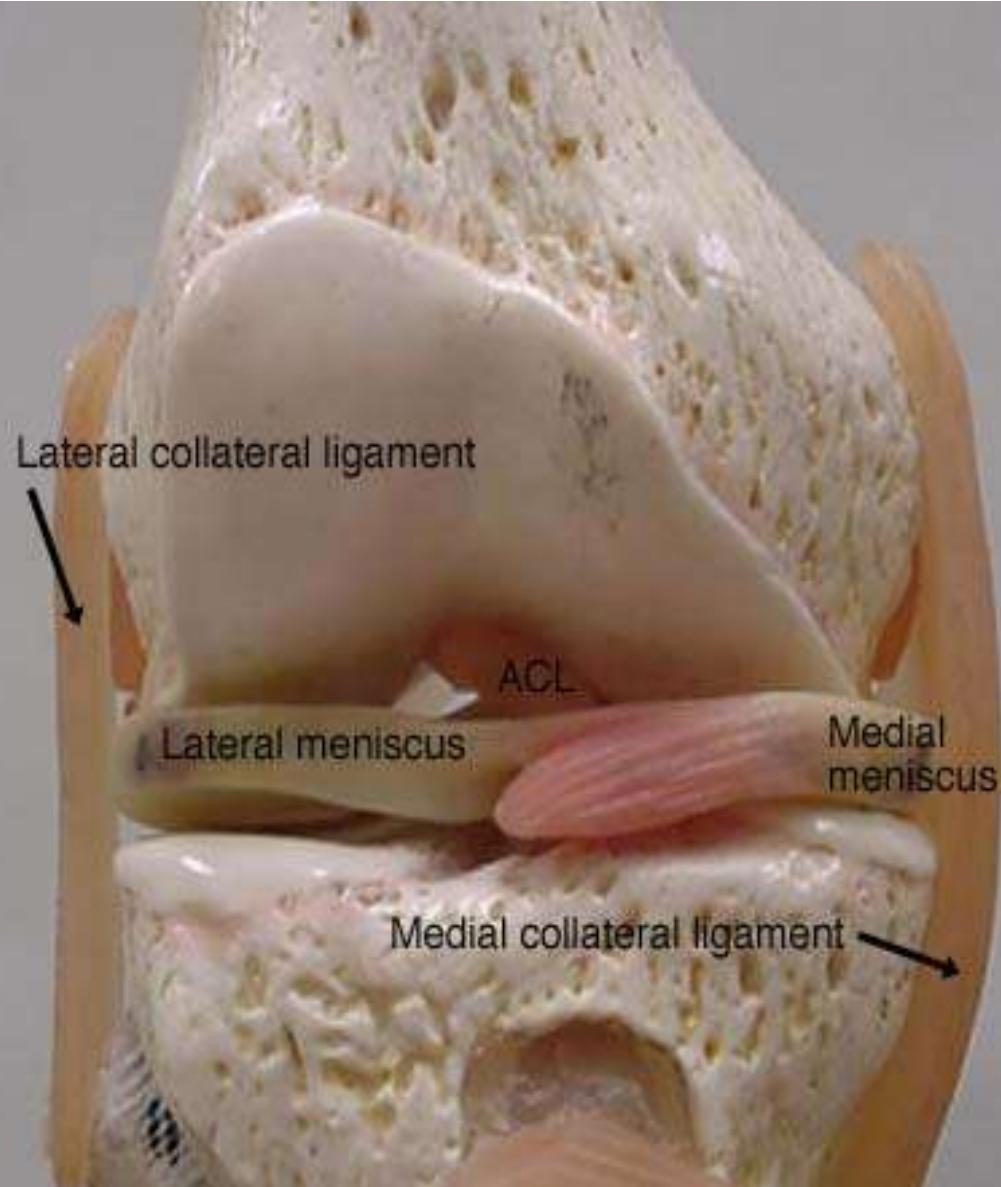


Patella, posterior view, right side









# Tibia and Fibula

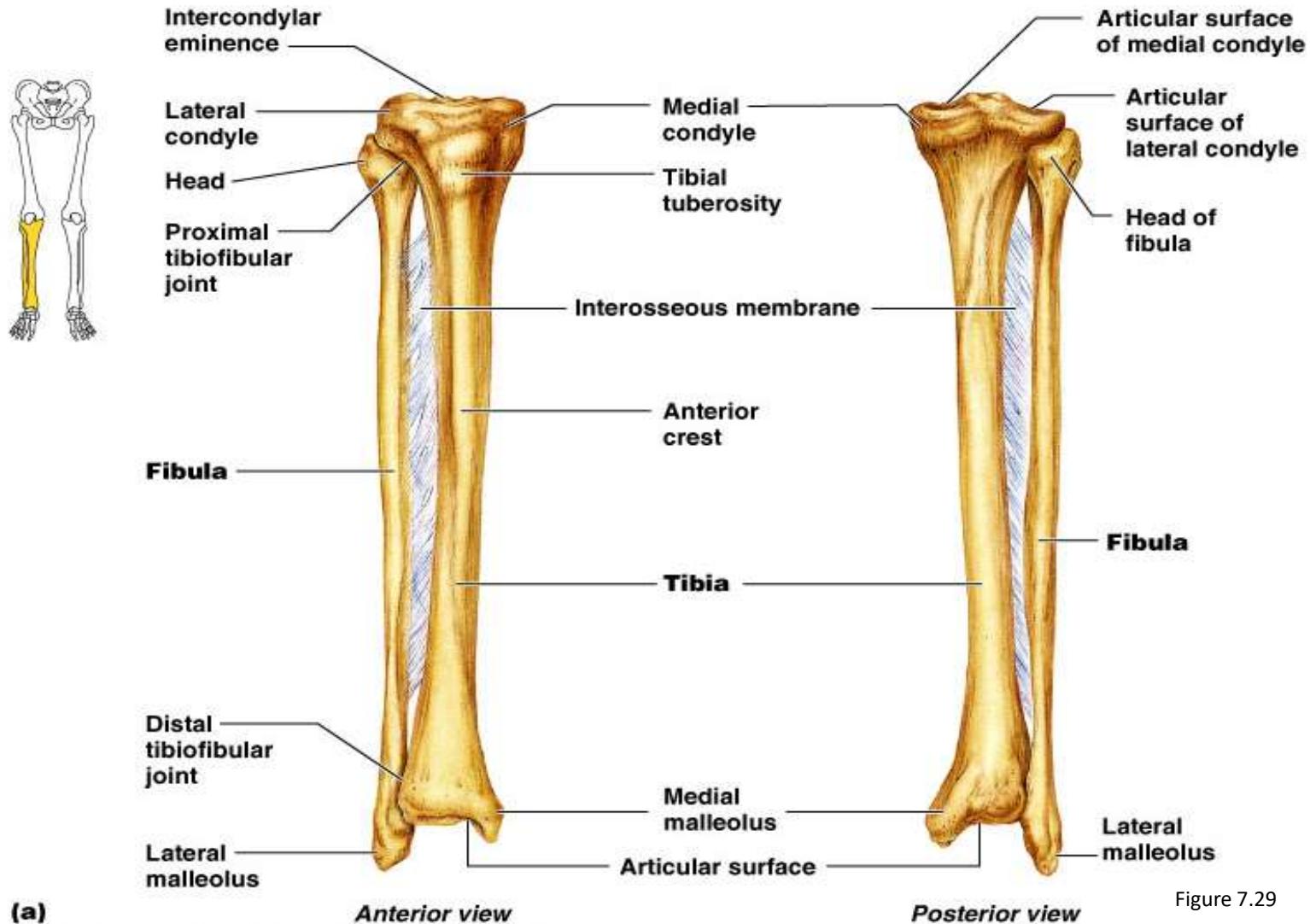
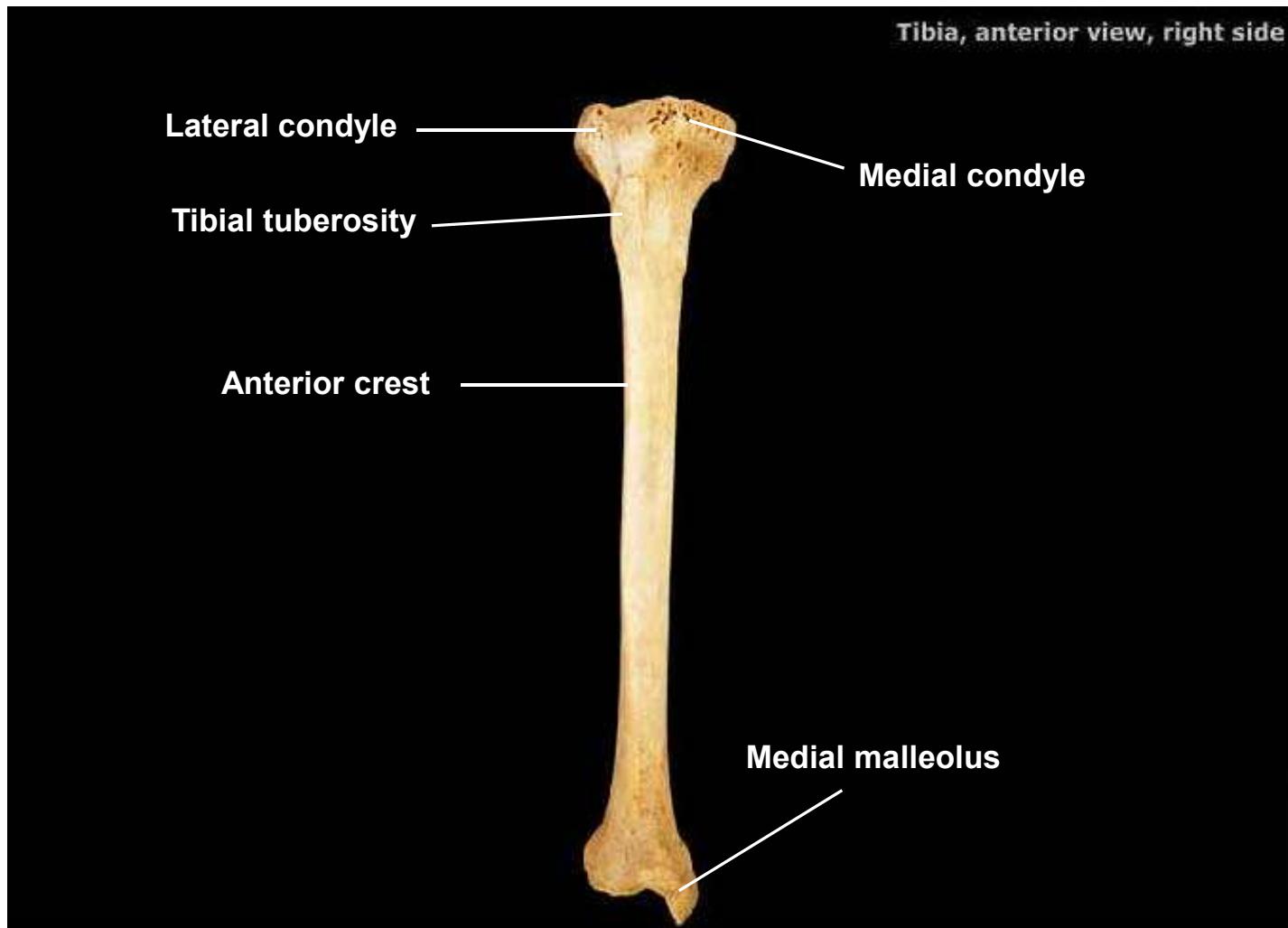
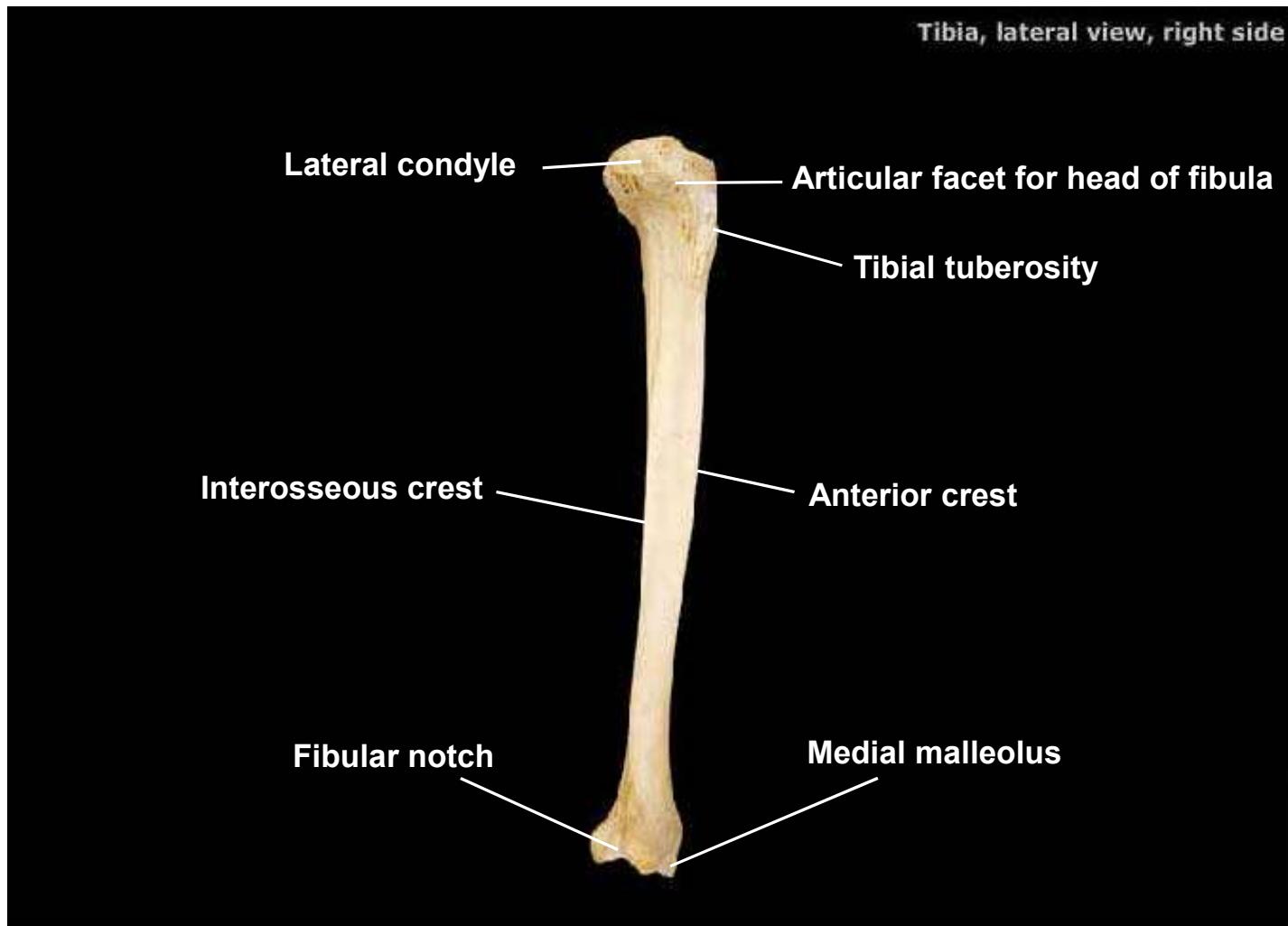


Figure 7.29

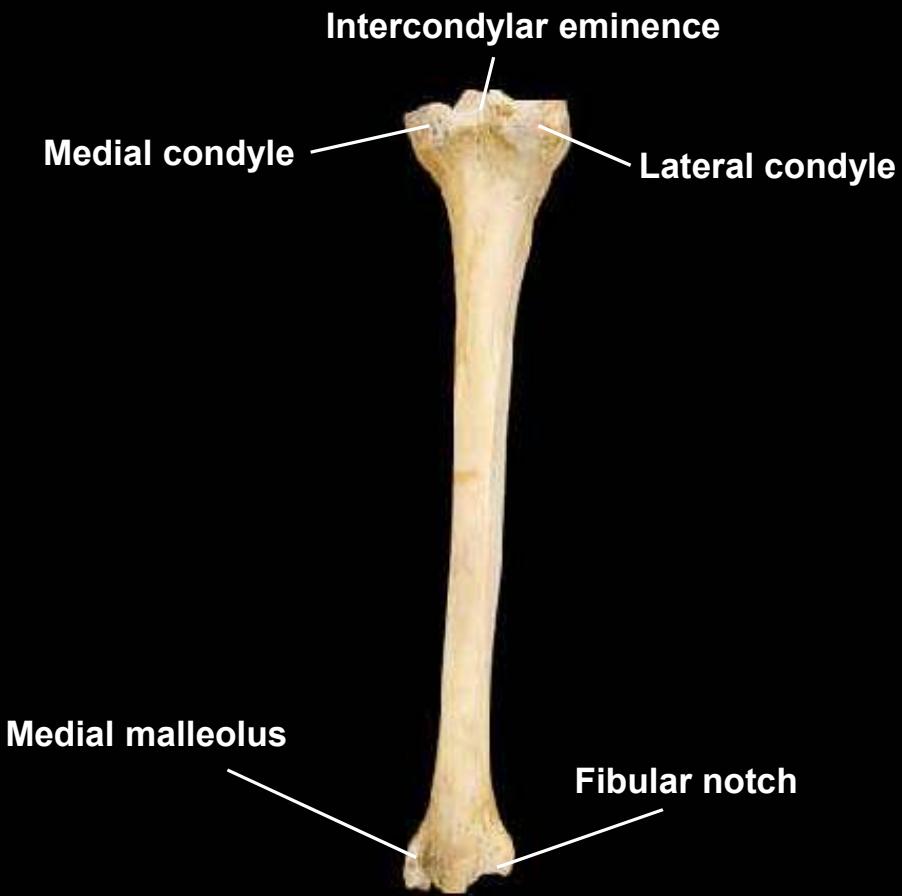
Tibia, anterior view, right side



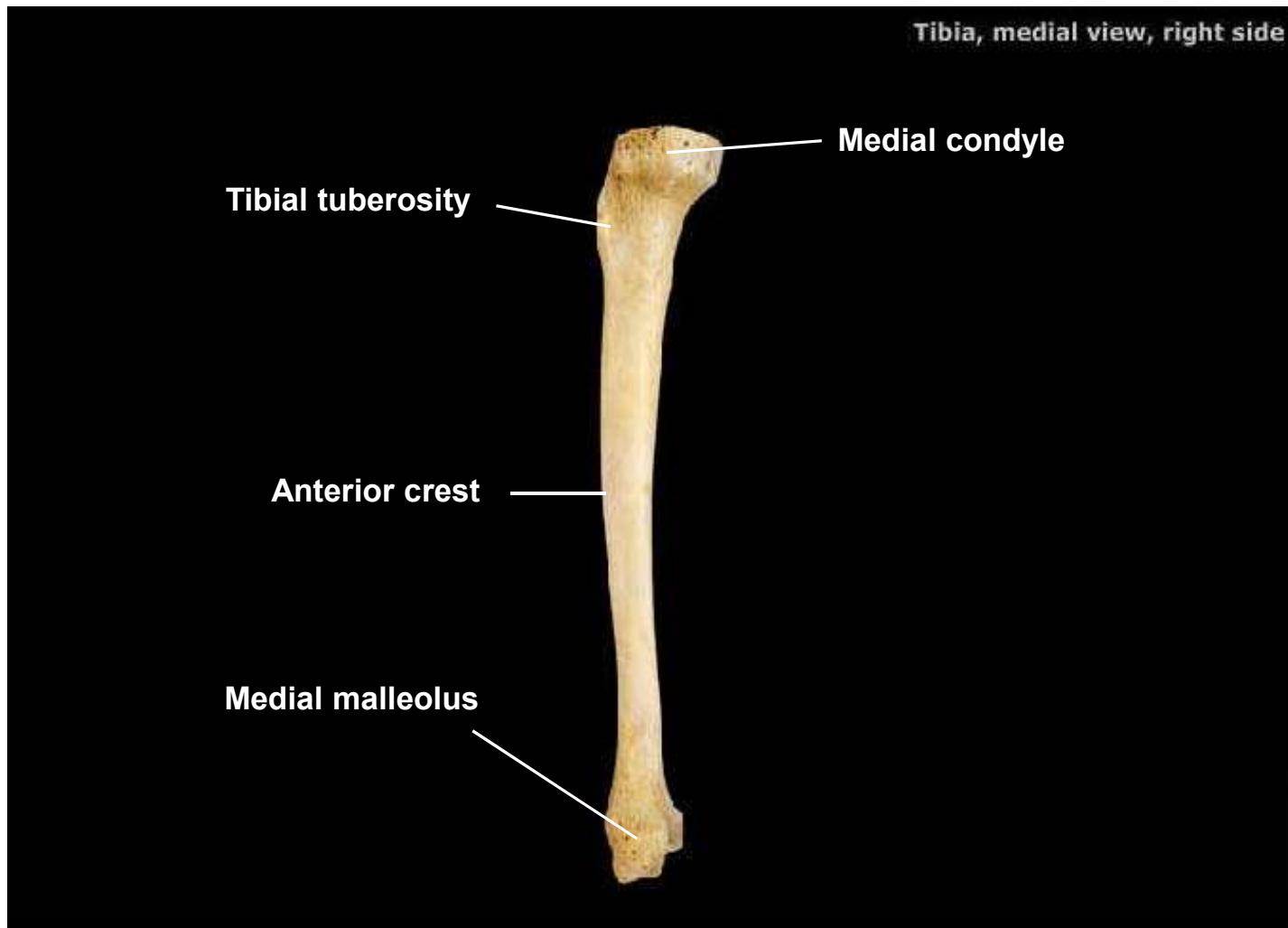
Tibia, lateral view, right side



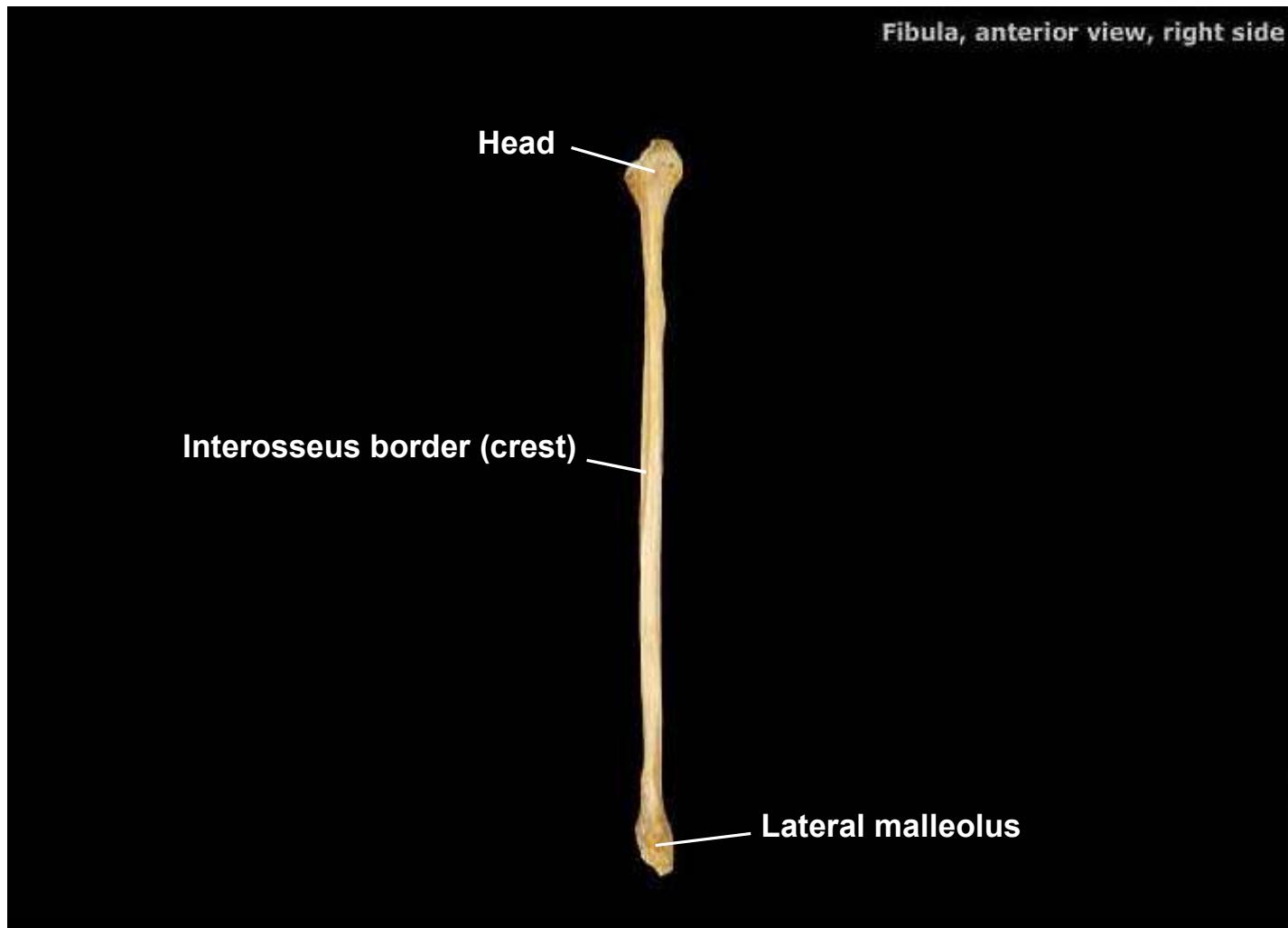
Tibia, posterior view, right side



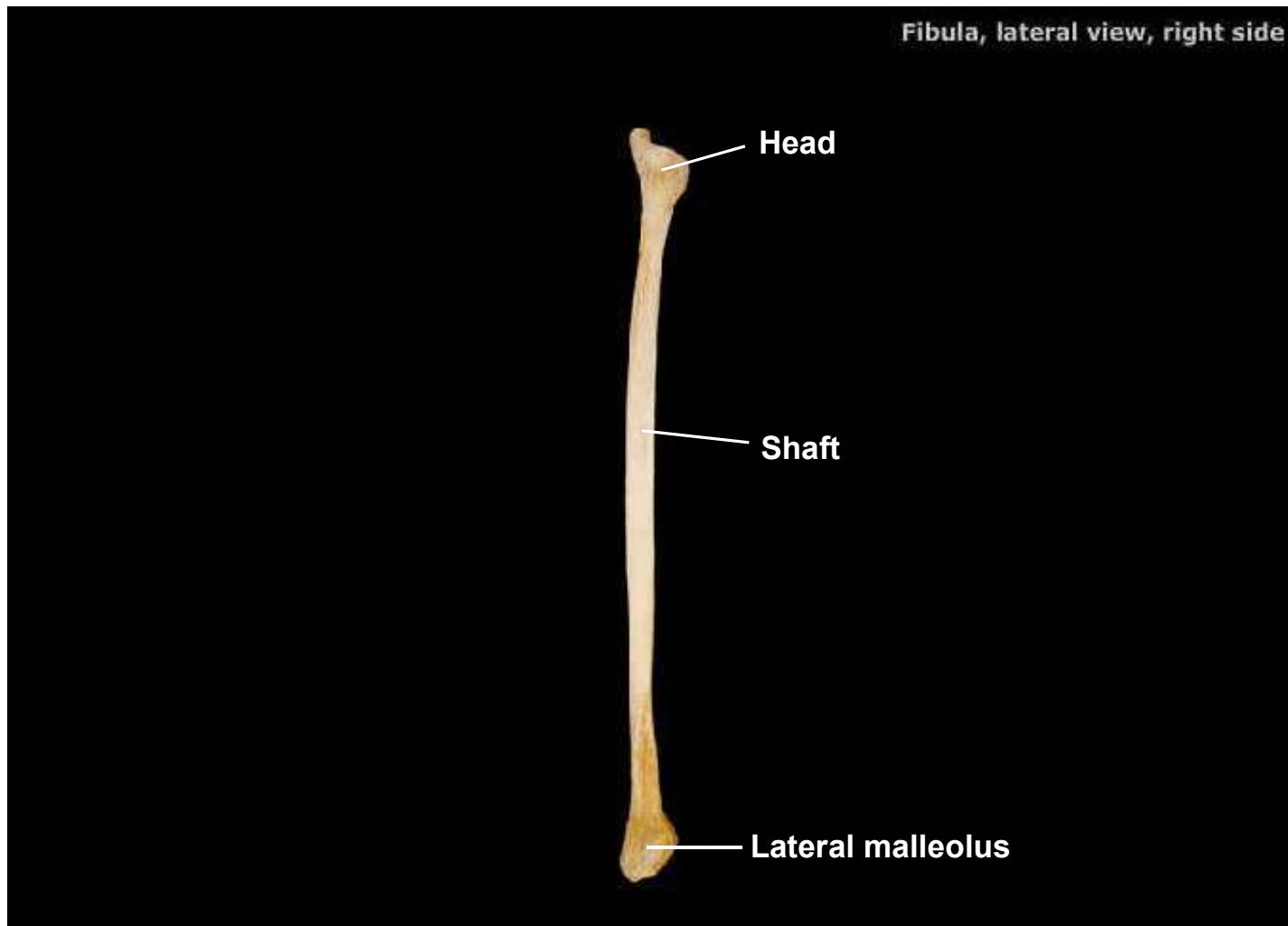
Tibia, medial view, right side



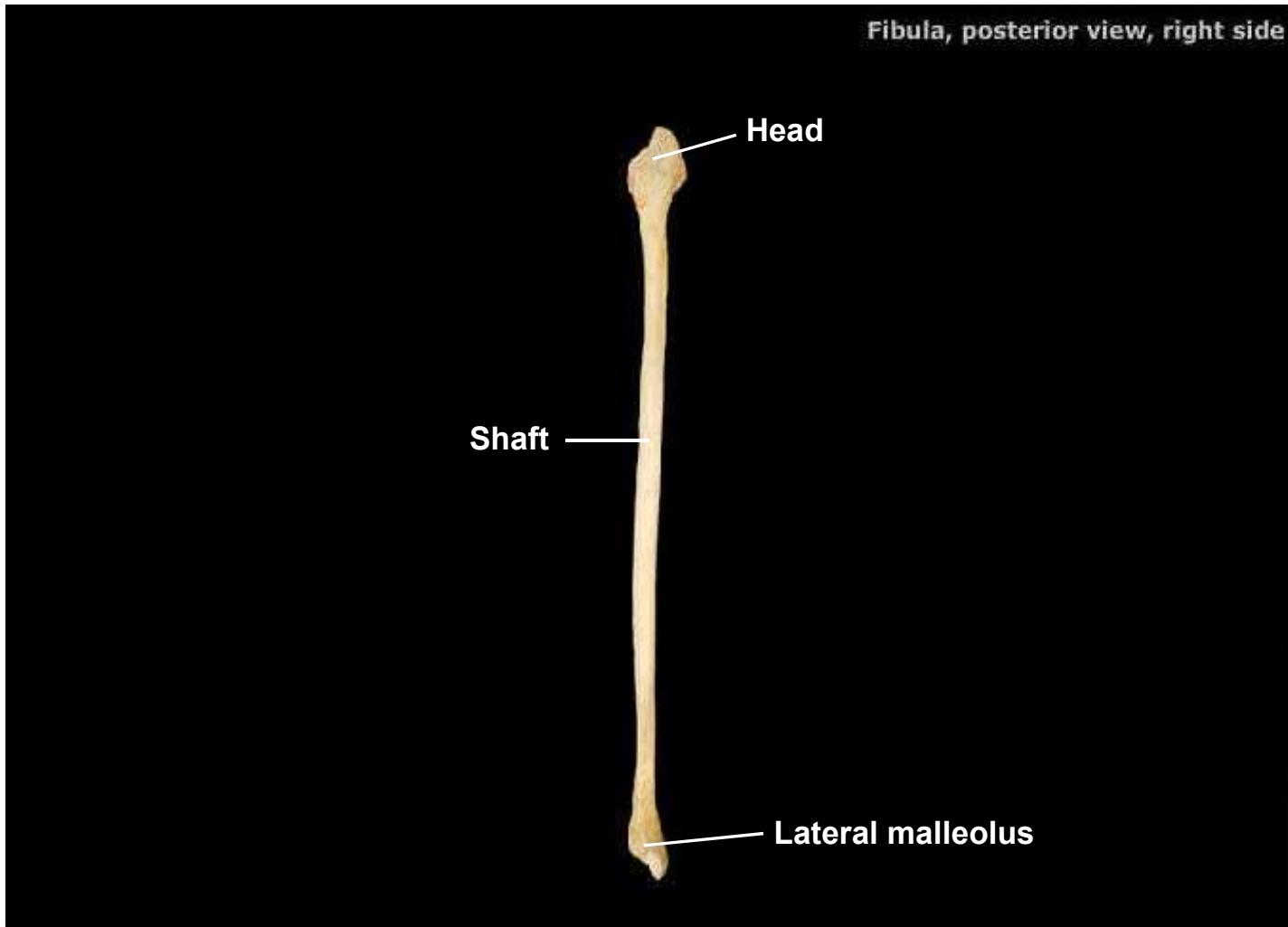
Fibula, anterior view, right side



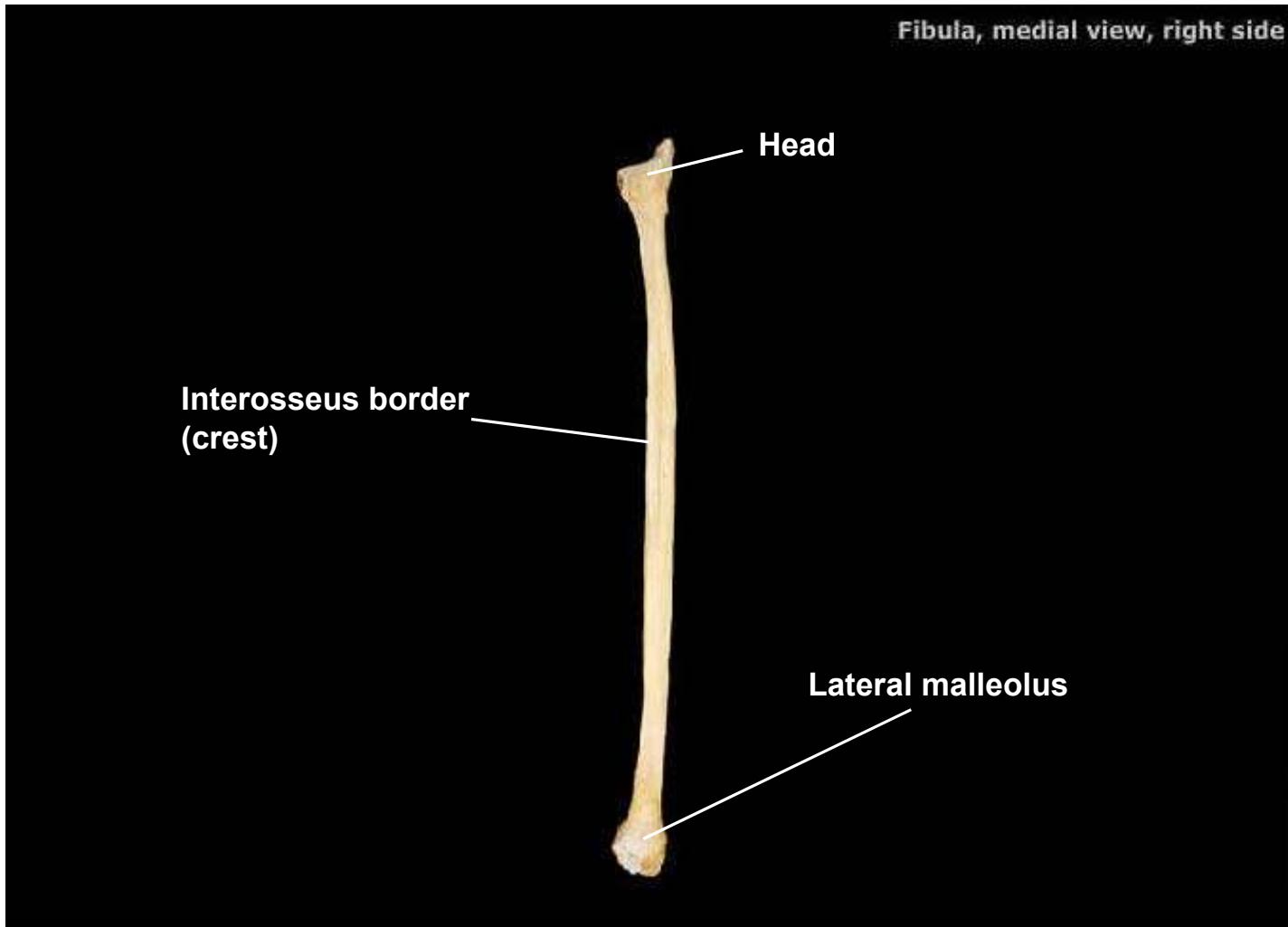
Fibula, lateral view, right side



Fibula, posterior view, right side



Fibula, medial view, right side

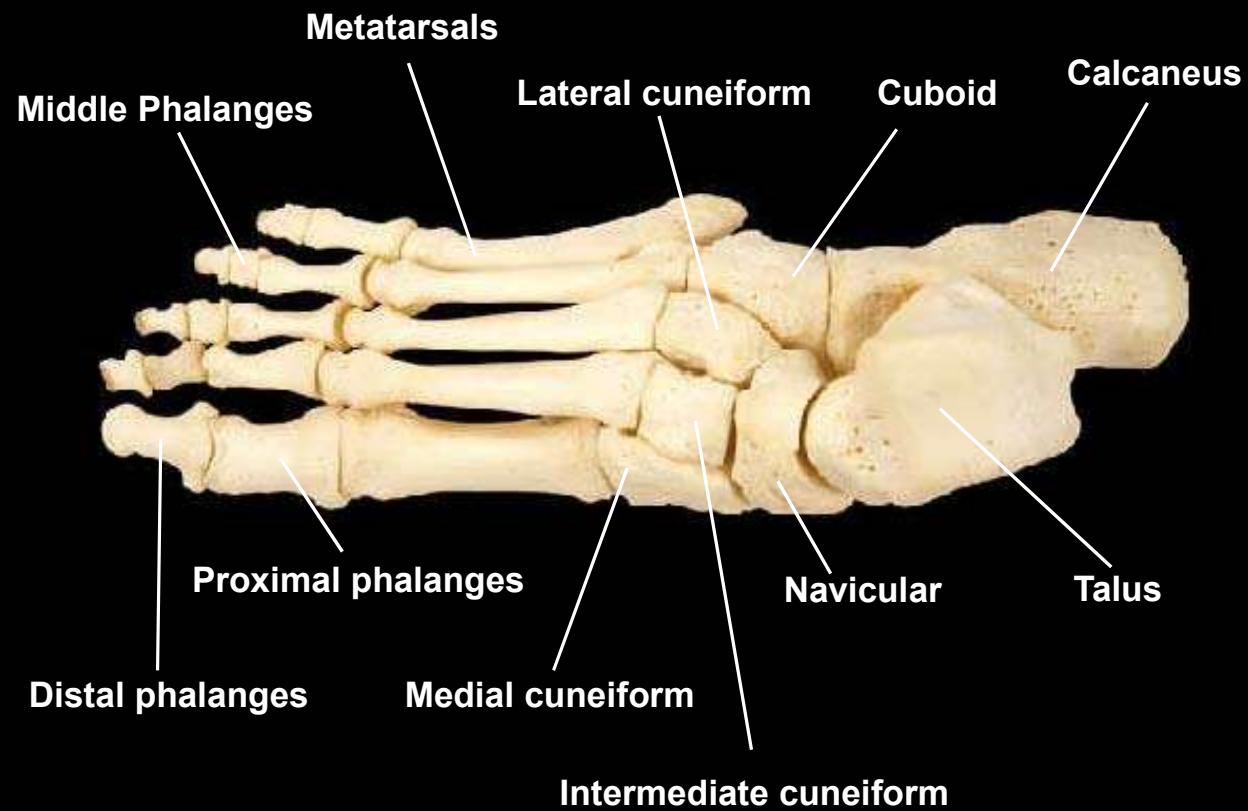


# Foot

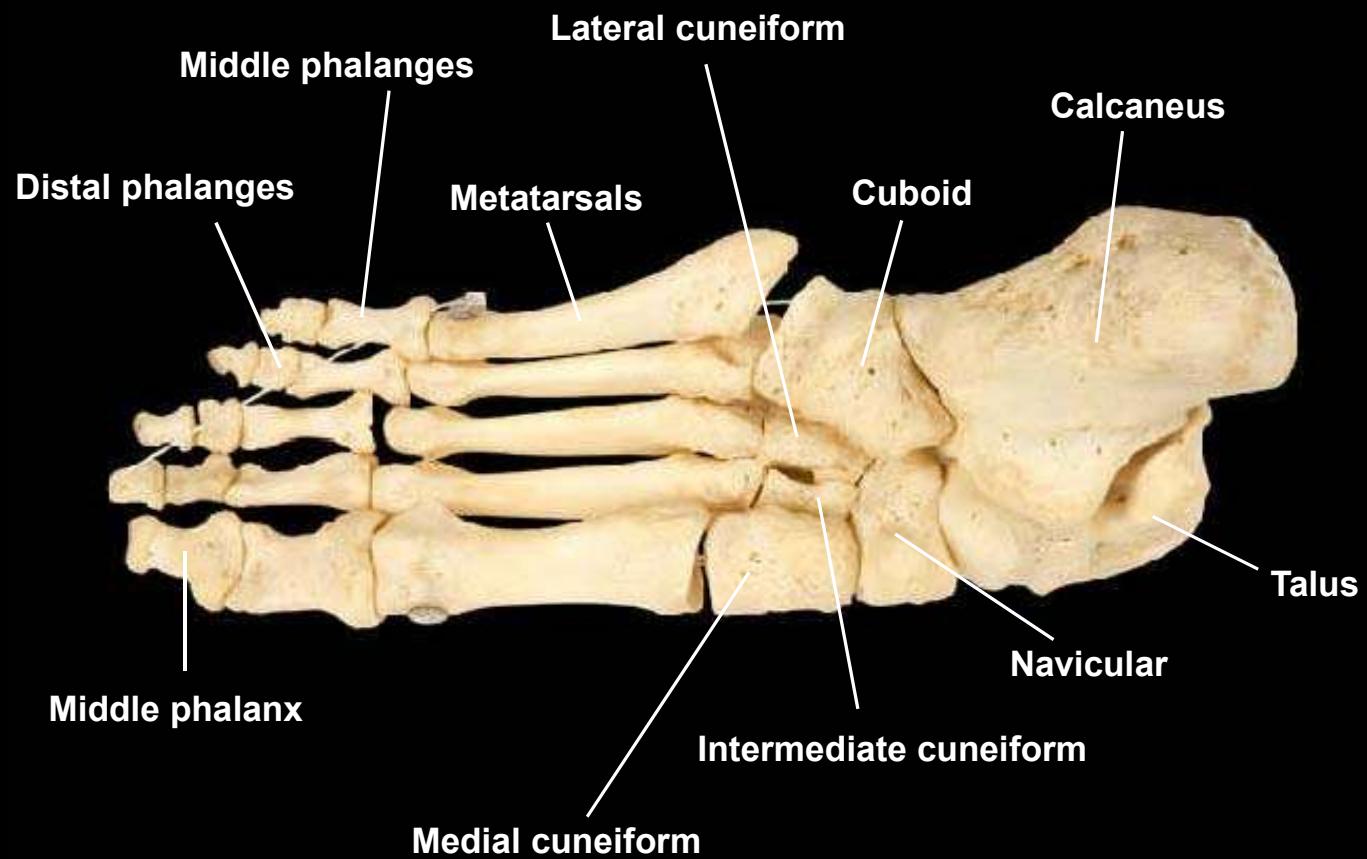
- The skeleton of the foot includes the tarsus, metatarsus, and the phalanges (toes)
- The foot supports body weight and acts as a lever to propel the body forward in walking and running

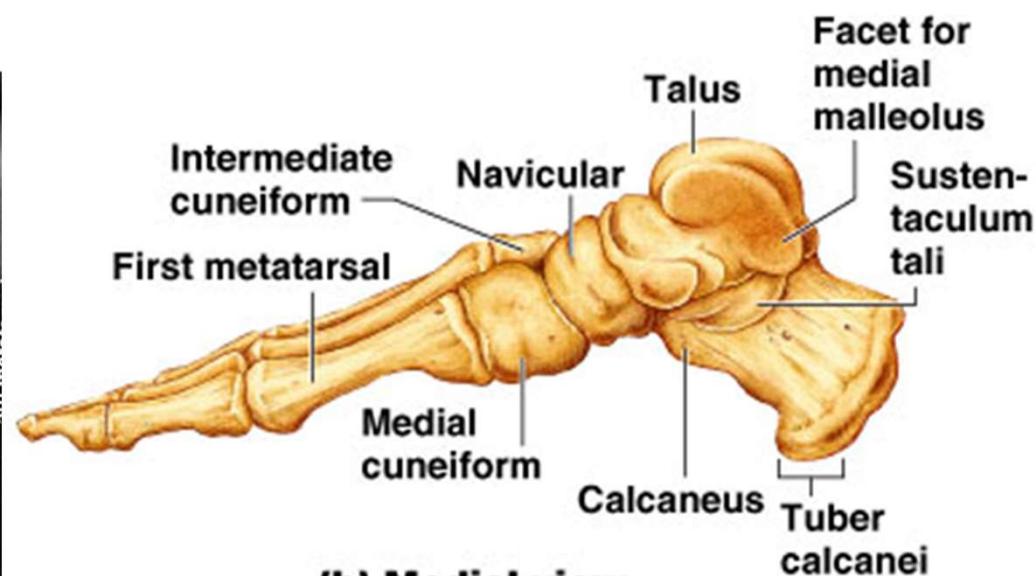
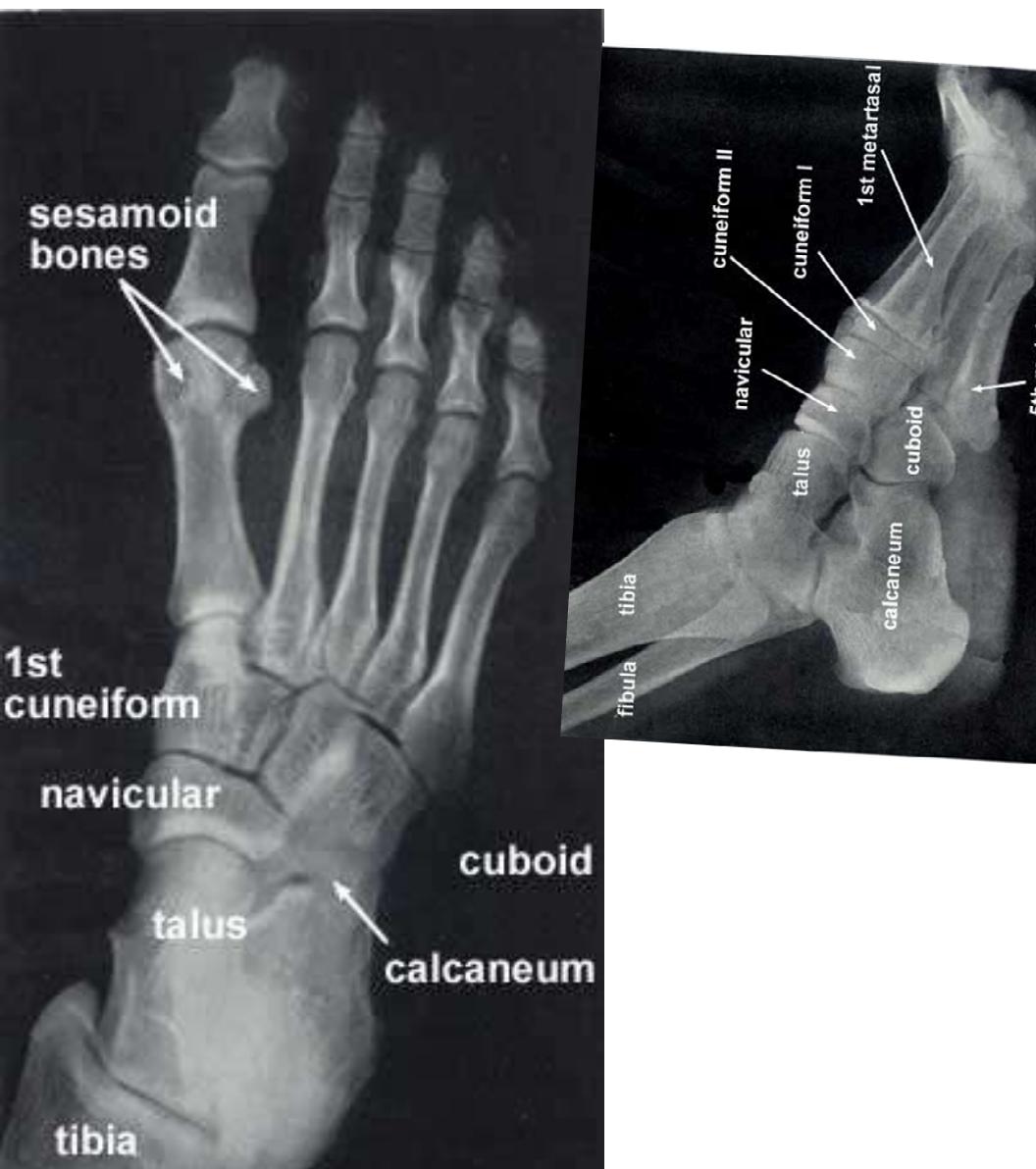


Bones of the foot, superior view, right side

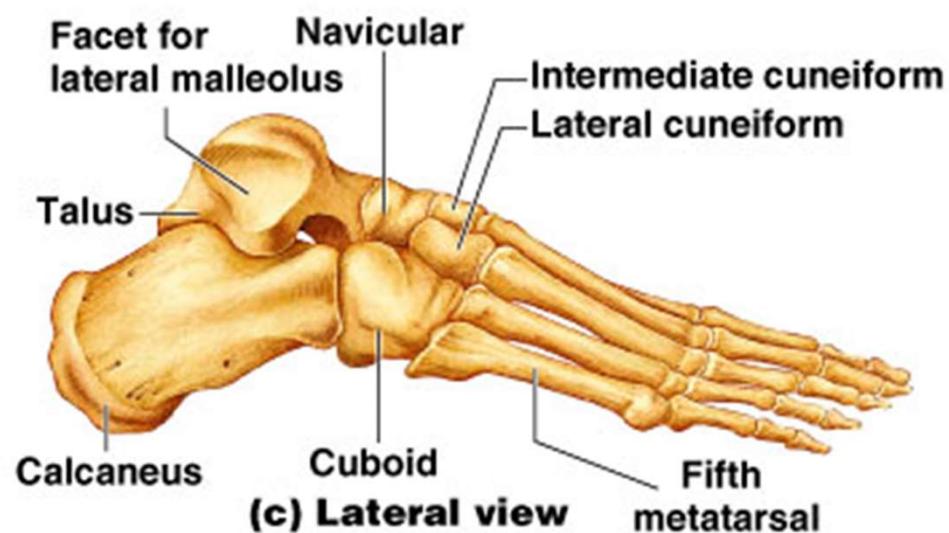


Bones of the foot, inferior view, right side





**(b) Medial view**



**(c) Lateral view**

Bones of the foot, inferior view, left side



Articulated skeleton, lateral view, right side



**Articulated skeleton, anterior view**

