The Pelvic Girdle

- Bony structure at the base of the spine
- Formed by three separate bones
  1. Ilium
  2. Ischium
  3. Pubis
- At puberty, these bones fuse together
- The hip bones are joined at the anterior aspect by the symphysis pubis
Pelvic Structures

- **Obturator foramen**: hole created by ischium and pubis; allows obturator nerve and muscles to travel from pelvis
- **Acetabulum**: socket to receive the head of the femur to form the hip joint
- **Iliac Crest**: superior border of the wing of the ilium; attachment site for numerous muscles
- **Pubic Symphysis**: midline cartilaginous joint between the left and right pubic bones
More Pelvic Structures

- **Sacroiliac joint**: articulation between sacrum and ilium; synovial; bound by strong intrinsic and extrinsic ligaments; two bony surfaces (generally) move together (**) joint changes with age

- **Pelvic Inlet/Outlet**: superior and inferior pelvic openings

- **Greater sciatic foramen**: allows for passage of piriformis muscle, sciatic nerve, other nerves and vessels.
• **Lesser Sciatic foramen**: smaller opening, more posterior, allows passage of tendons, nerves, vessels associated with reproductive organs
• **Iliac Crest**: Lateral borders of pelvis, attachment site for numerous large muscles
• **Iliac spine (anterior and posterior)**: ant and post borders of pelvis, attachment sites for muscles and ligaments

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**The Femur**

• Thigh bone
• Longest, strongest, largest volume bone
• Can support up to 30x the weight of an adult
• Articulates into acetabulum (hip) and with tib/fib (knee)
The Femur – Structures

- **Greater Trochanter**: large irregular eminence (laterally and posteriorly)
- Pelvic outlet in the female is larger than in the male, therefore larger distance between greater trochanters
- **Lesser Trochanter**: cone-shaped eminence at the base of the neck of the femur

More Femur Structures

- **Medial Condyle**: larger of two condyles (bears more weight because centre of gravity is medial to the knee)
- **Medial Epicondyle**: most medial aspect of medial condyle
- **Lateral Condyle**: more prominent of the two condyles, larger in antero-posterior diameter
- **Lateral Epicondyle**: less prominent than medial version, similar shape
The Patella

- Aka “knee cap” → largest sesamoid bone (bone imbedded in a tendon)
- Covers and protects the knee joint
- Primary function is knee extension
- Increases the leverage exerted on the femur by increasing the angle at which it acts
- Most patellas have some movement but remain in place and resist pressure from various directions

Palpation Review Exercise

- Get a partner (who will let you touch him/her)
- Palpate the following (with instructions; be GENTLE!)
  1. Palpate the mastoid process. See if you can find the lymph nodes inferior and posterior to the process
  2. Palpate the acromion process, medial, and lateral epicondyles of the elbow.
More palpation...

3. See if you can find the funny bone. What is it?
   • Answer: the ulnar nerve, the largest unprotected nerve in the human body

4. Plapate both styloid processes in one wrist. Pronate and supinate your arm. Note the movement.

5. Palpate the posterior aspect of the scapula and the scapular spine. Note movement during protracting, retracting, elevating, and depressing of shoulders.

Still More Palpation

6. Gently palpate the thoracic and cervical vertebrae. Note any different shapes. Does the vertebral column change with movement? How? With which movements?

7. Palpate the iliac crest on yourself. Note the location.

8. Palpate the medial and lateral condyles of each knee. Note the variance in size throughout the class.

9. Palpate and gently move the patella from side to side. Note the variance in resistance (be gentle!)