Introduction to the Skeletal System

(Text Pg 9 – 11)

The Human Skeleton

- "Skeletal" is Greek for "dried up"
- Has living (*bone cells, fat cells and blood vessels*) and non-living components (*water and minerals*)
- Consists of 206 bones
- Accounts for ~14% of our body mass

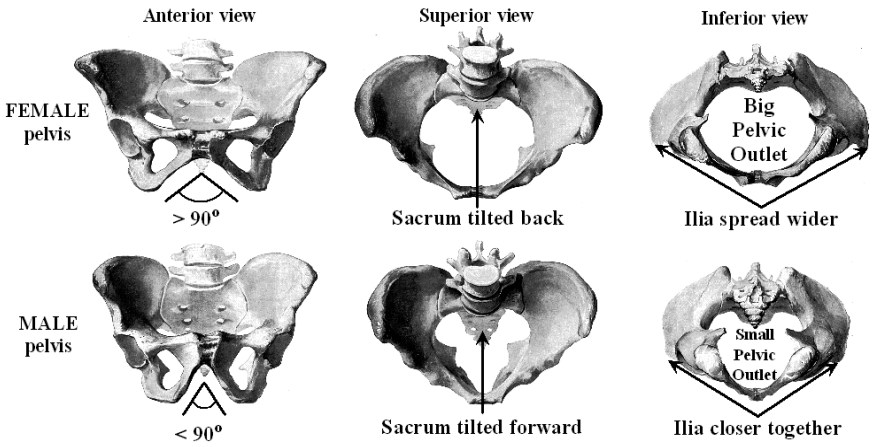
Five Functions of the skeletal system:

Function	Explanation
Structure	Structural support for small tissue, including muscles and viscera (internal organs)
Protection	Protective cage for more delicate parts of the body (ex: brain- skull, heart and lungs - rib cage)
Growth Centre for Cells	Red blood cells and platelets are made in bones
Reservoir for minerals	Phosphorus and calcium which may be used in time of need (repair and function).
Movement	Muscles attach to bones by tendons, Muscles contract and move bones to facilitate movement.

Two Primary Differences Between Male And Females

1. Pelvis Structure

a. Shape



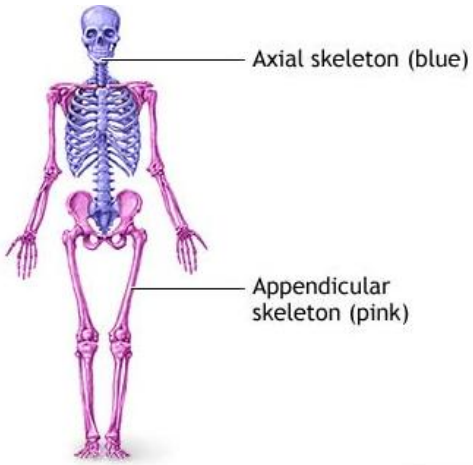
2. Size and Weight of Bones

a. Males – longer and thicker bones.

b. Females – Shorter and thinner (↑ risk of fractures)

Two Primary Divisions of the Skeleton:

1. Axial Skeleton (80 bones):



a. Consists of the:
   i. Skull (*protects the brain*)
   ii. Vertebral column (*protects the spine*)
   iii. Thoracic Cage (*protects the lungs and heart*)

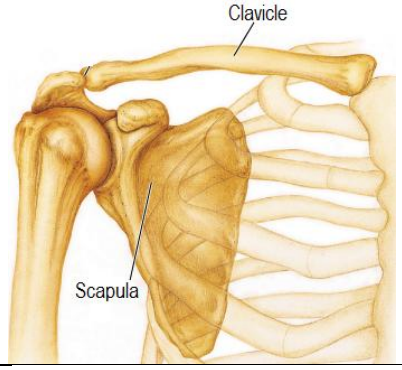
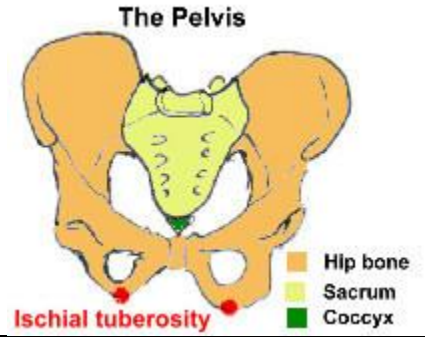
****** Most musculature originates or anchor on the axial skeleton.***

2. Appendicular Skeleton (126 bones):

a. Consists of movable limbs and their supporting structures (girdles)
   i. Upper and lower extremities
   ii. The shoulder and pelvic girdles which anchor the bony appendages to the axial skeleton.

******Most important role is allowing movement***

Two Anatomical Girdles

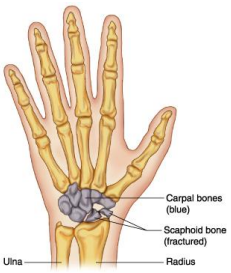
Name	Bones involves	Picture
The Shoulder (pectoral) Girdle	1. Scapula 2. Clavicle	
The Pelvic Girdle	1. Hip Bone 2. Sacrum (Coccyx)	

5 Classifications of bone

1. Long Bones

a. Tubular shell with cavity in the middle.

- Found in: Arms, legs, hands, etc. E.g. humerus & femur



2. Short Bones

a. No marrow cavity

- Found in: Wrist & ankle E.g. carpals and tarsals

3. Flat Bones

a. Flat and thin, (protection, broad surface for muscle attachment)

- Found in: Cranium, pectoral and pelvic girdles E.g. parietal, scapula, ilium

4. Irregular Bones

a. Specialized shape and function (support weight, dissipate loads, protect spinal cord)

- Found in: Spinal column E.g. vertebral bodies

5. Sesamoid Bones

a. Small bones embeded within a tendon or joint capsule (alters angle of insertion, reduces friction)

- Found in: Knee, hand, thumb & big toe E.g. patella & Pisiform