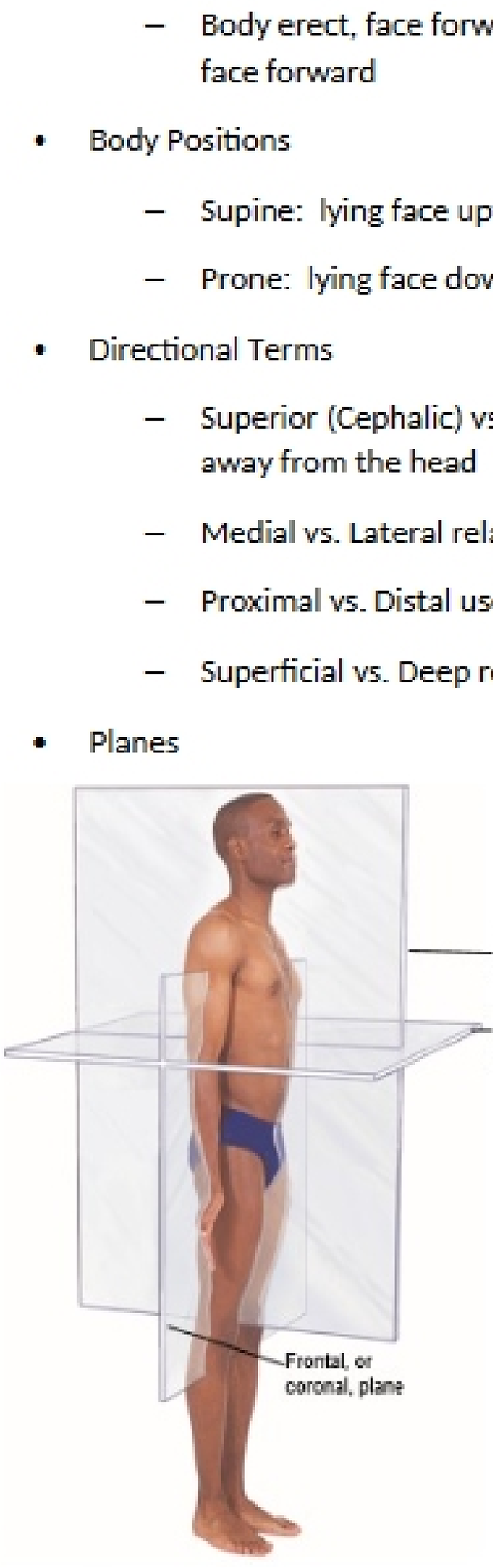
Functional Anatomy and Physiological Lab (PET3322L)

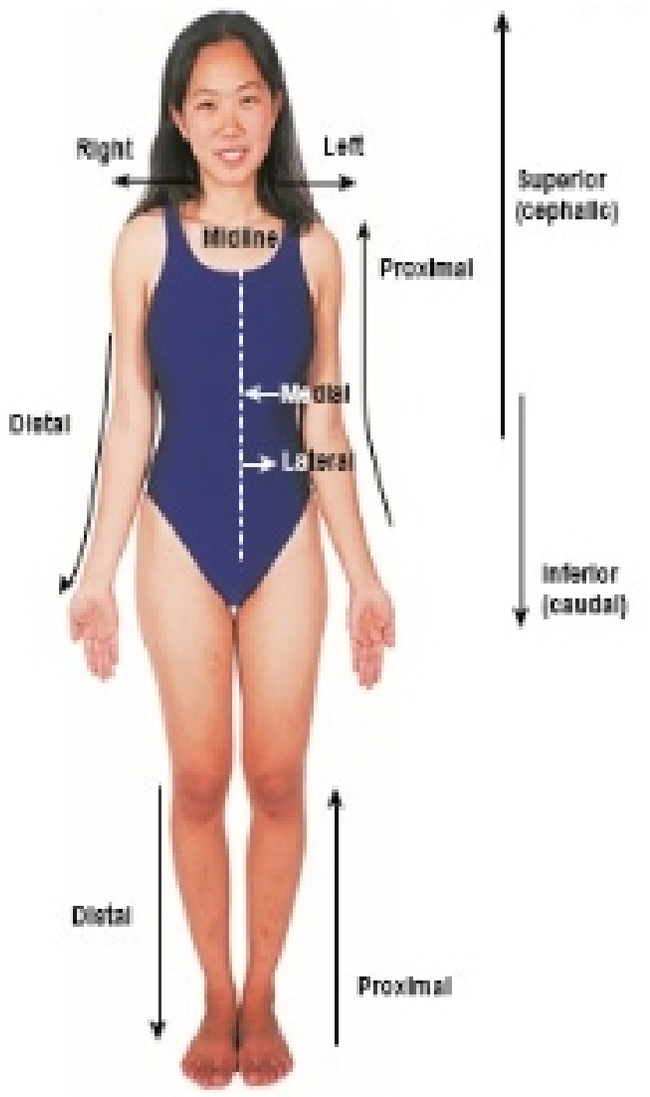
Exam 1 Study Guide

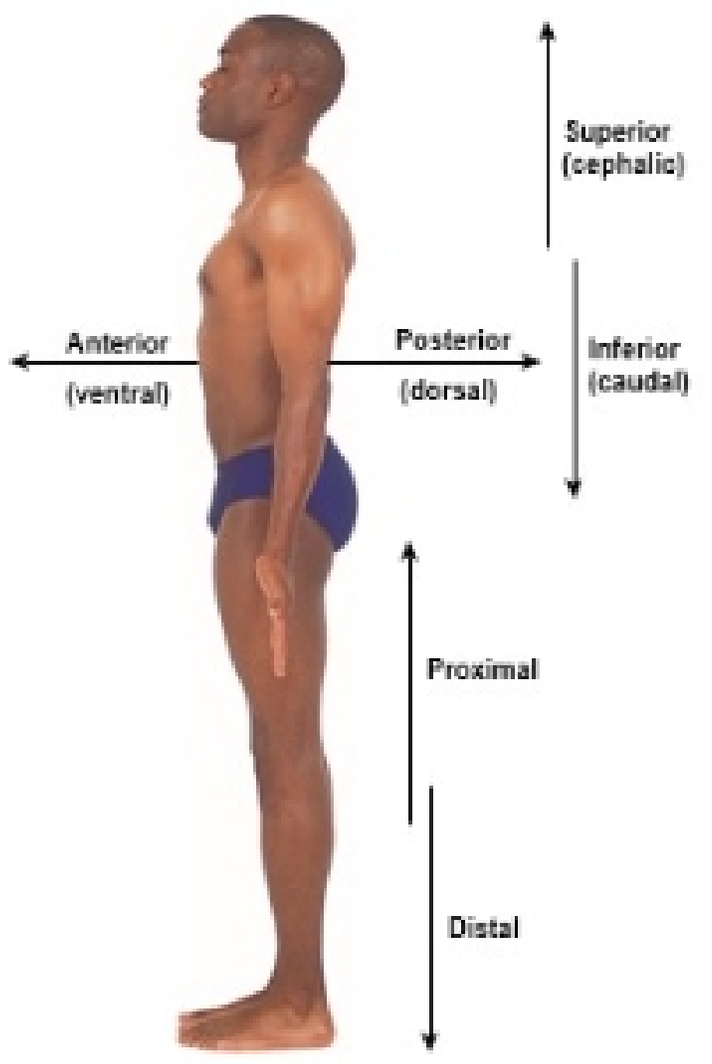
Contains information taken directly from Mr. Worts's PowerPoint slides.

Week 2: Anatomical References and Axial Skeleton

- Anatomical Position
  - Body erect, face forward, feet together, palms face forward
- Body Positions
  - Supine: lying face upward
  - Prone: lying face downward
- Directional Terms
  - Superior (Cephalic) vs. Inferior (Caudal) toward or away from the head
  - Medial vs. Lateral relative to the midline
  - Proximal vs. Distal used to describe linear structures
  - Superficial vs. Deep relative to the surface of the body
- Planes







- Anterior (Ventral) vs. Posterior (Dorsal): Anterior is forward; posterior is toward the back.

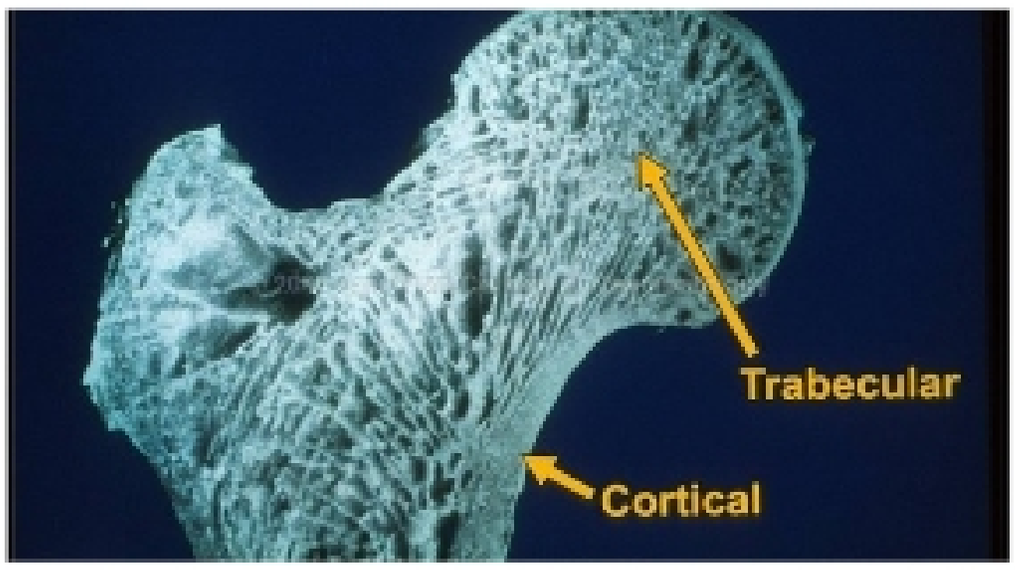
  - Median (through the midline) and Sagittal: same plane, but to the left or right of median
  - Frontal or Coronal: divides body into anterior and posterior sections
  - Transverse / Cross: divides body into superior and inferior sections
  - Oblique: Other than at a right angle

Abdominal Subdivisions

- Right Upper Quadrant
  - Liver, Right Kidney, Pancreas, Gallbladder
- Left Upper Quadrant
  - Liver, Spleen, Left Kidney, Pancreas, Stomach
- Right Lower Quadrant
  - Right Kidney, Ureter, Appendix
- Left Lower Quadrant
  - Left Kidney, Ureter

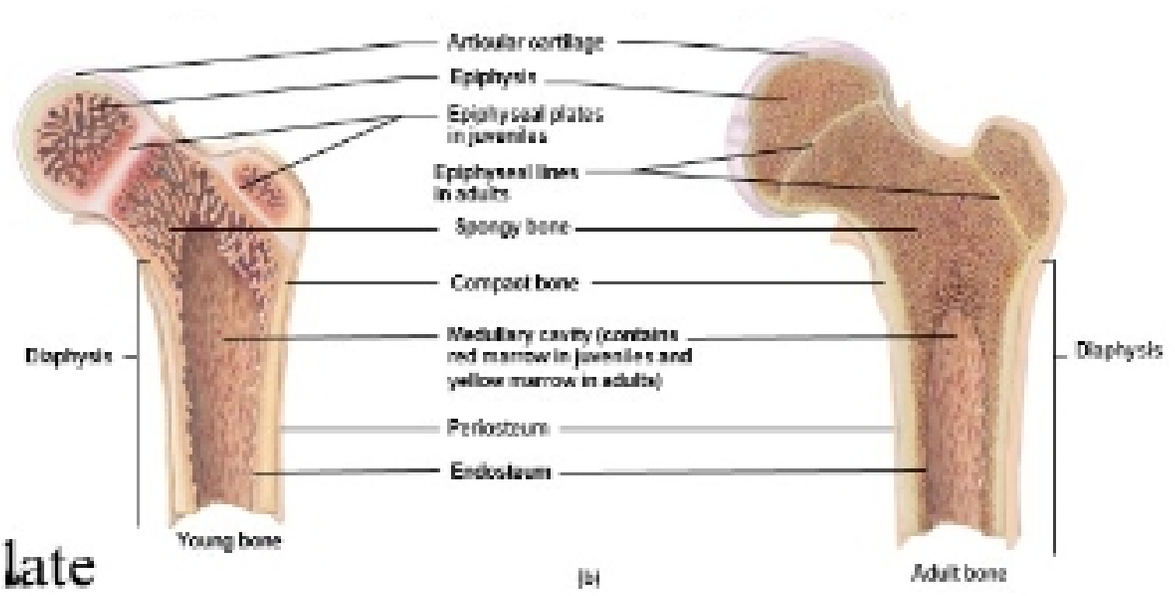
Bone Anatomy

- Long - Ex. Upper and lower limbs
  - Long with a thick compact bone exterior
- Short - Ex. Carpals and tarsals
- Flat - Ex. Ribs, sternum, skull, scapulae
- Irregular - Ex. Vertebrae, facial
- Cortical - Hard exterior
- Trabecular - Spongy interior (osteoporosis strikes first)
- Sesamoid bones - also help with mechanics (Angle of pull)
  - Small bones that develop in tendons
  - "extra" bones that have a role in protection.



Structure of a Long Bone

- Diaphysis: Shaft, compact bone
- Epiphysis: End of the bone, spongy bone
- Epiphyseal plate: growth plate
  - Hyaline cartilage; present until growth stops
- Epiphyseal line: bone stops growing in length
- Medullary cavity: In children medullary cavity is red marrow, gradually changes to yellow in limb bones and skull (except for epiphyses of long bones).

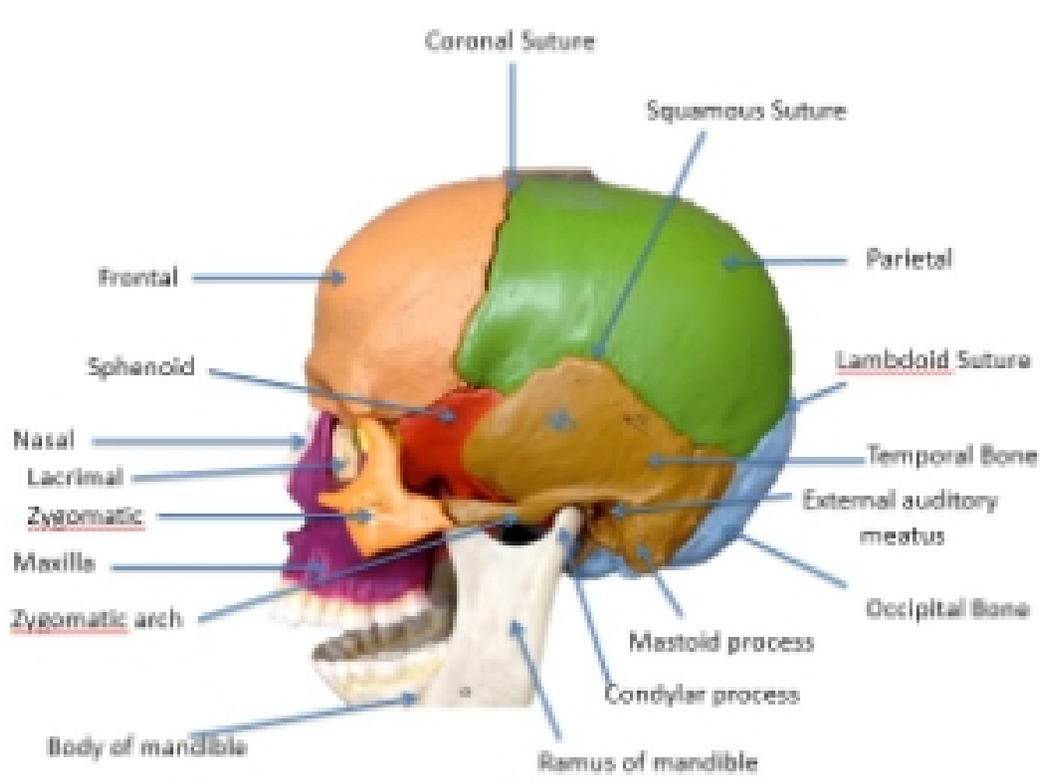


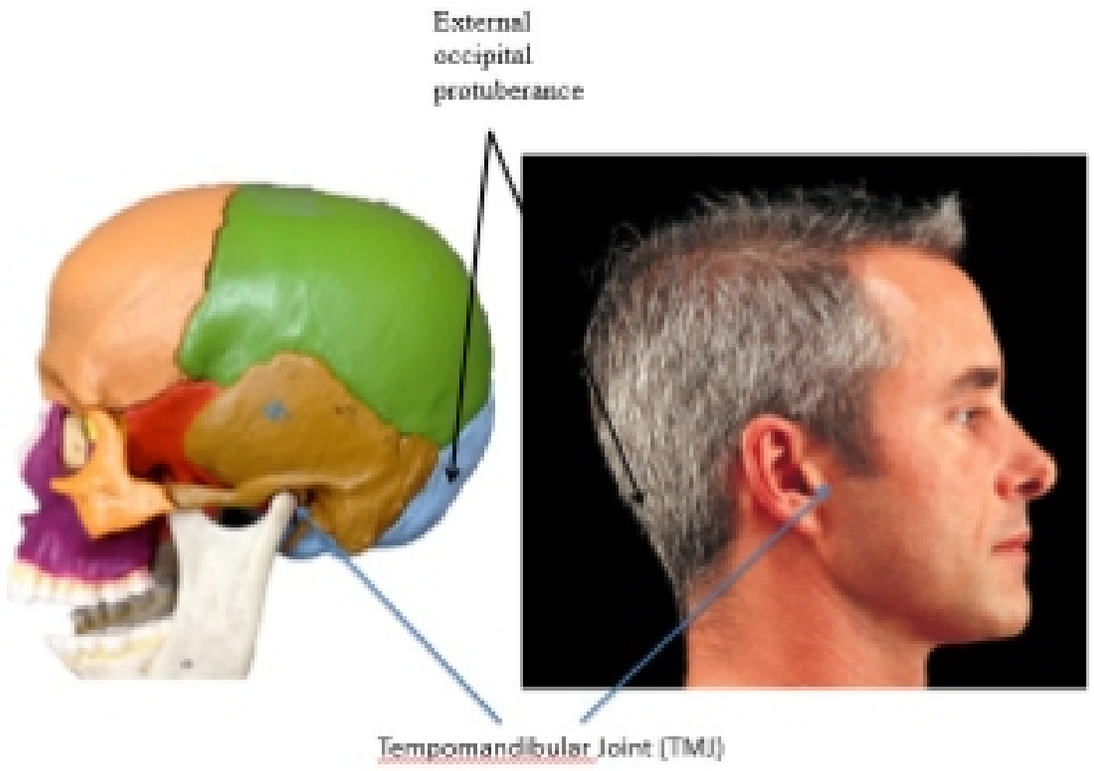
late

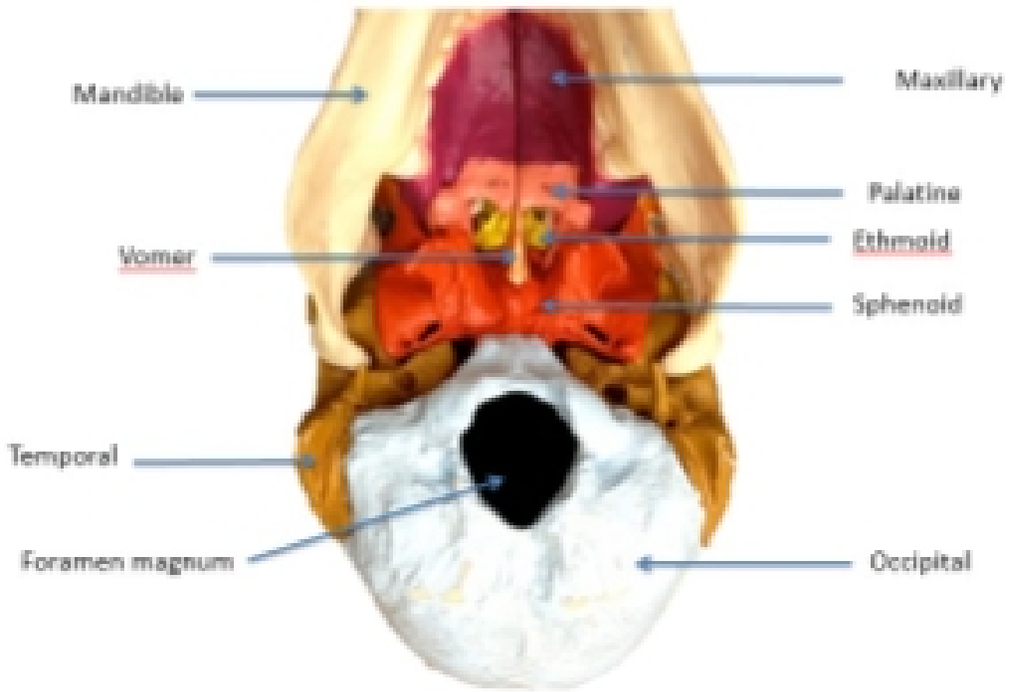
    - Rest of skeleton is red.
    - Lined with endosteum.
    - Yellow marrow is found within medullary cavity.
- Periosteum covers bone everywhere but the joint.
    - Outer is fibrous.
    - Inner is single layer of bone cells including osteoblasts, osteoclasts and osteochondral progenitor cells.
- Fibers of tendon become continuous with fibers of periosteum
- Red marrow is found within cavities of spongy bone and produces RBCs, WBCs, platelets.

Functions of Bone

- Support, protection, movement, storage (Ca, P, and fat), and blood cell production.







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