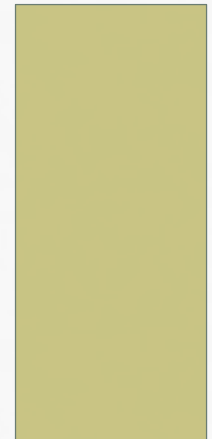


ANATOMY I LAB PRACTICAL I

REVIEW

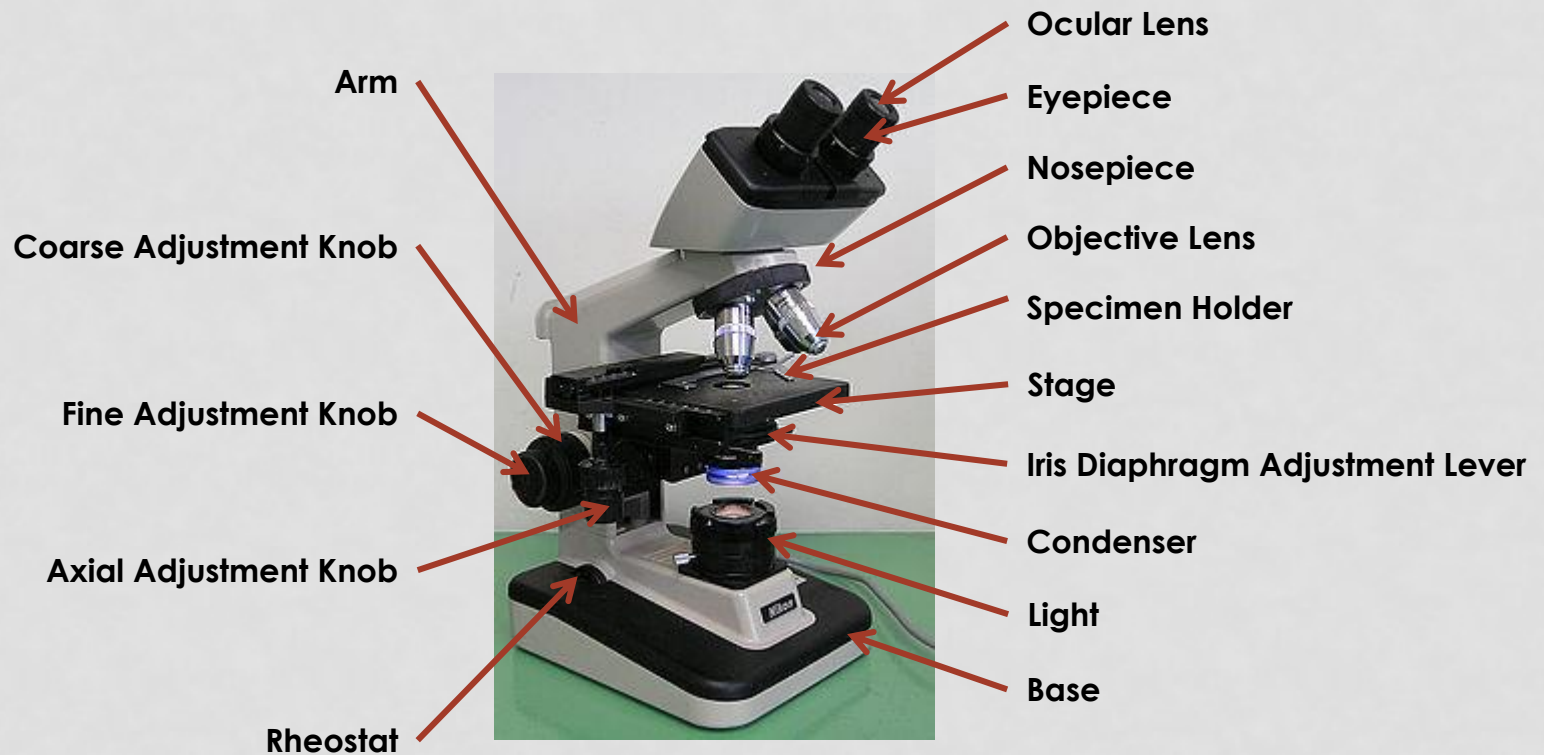


MICROSCOPES

Important Terms

- Eyepiece
- Ocular Lens – Magnifies object by 10x
- Nosepiece
- Objective Lenses – 4x, 10x, 40x, and 100x, Parfocal and Parcentral
- Specimen Holder
- Stage
- Iris Diaphragm Adjustment Lever
- Condenser – Focuses light
- Light
- Rheostat – Adjusts brightness of light
- Base
- Coarse Adjustment Knob
- Fine Adjustment Knob
- Axial Adjustment Knob
- Arm
- Magnification – How much an object is magnified, i.e. 10x
- Resolving Power – How clear an object remains after magnification
- Contrast – How well objects show up against their background

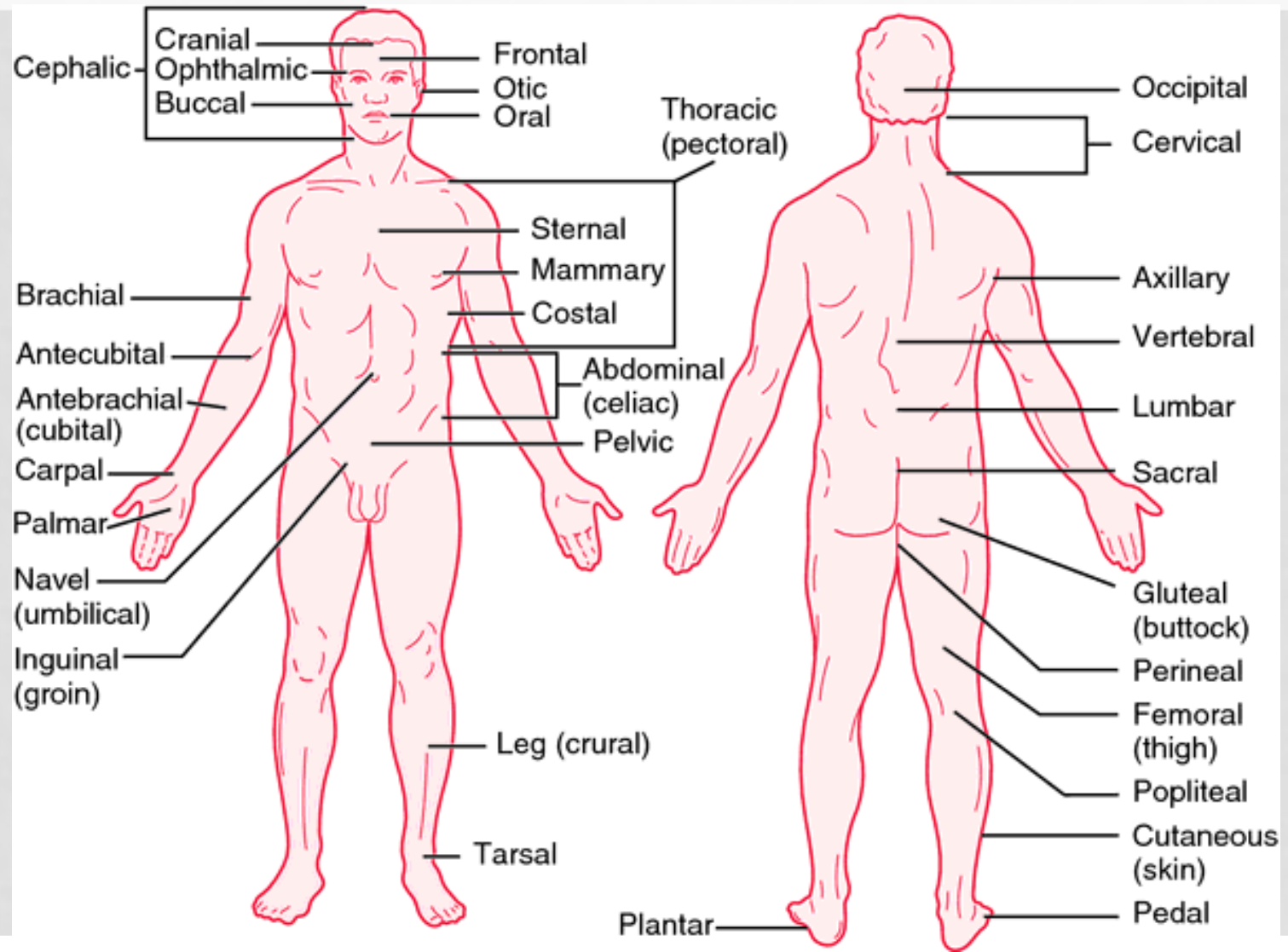
MICROSCOPES



MICROSCOPES

- What is the eyepiece magnification?
 - 10x
- What are the objective magnifications from lowest magnification to highest?
 - 4x
 - 10x
 - 40x
 - 100x
- How do you determine total magnification?
 - Multiply eyepiece magnification by total magnification

BODY LANDMARKS

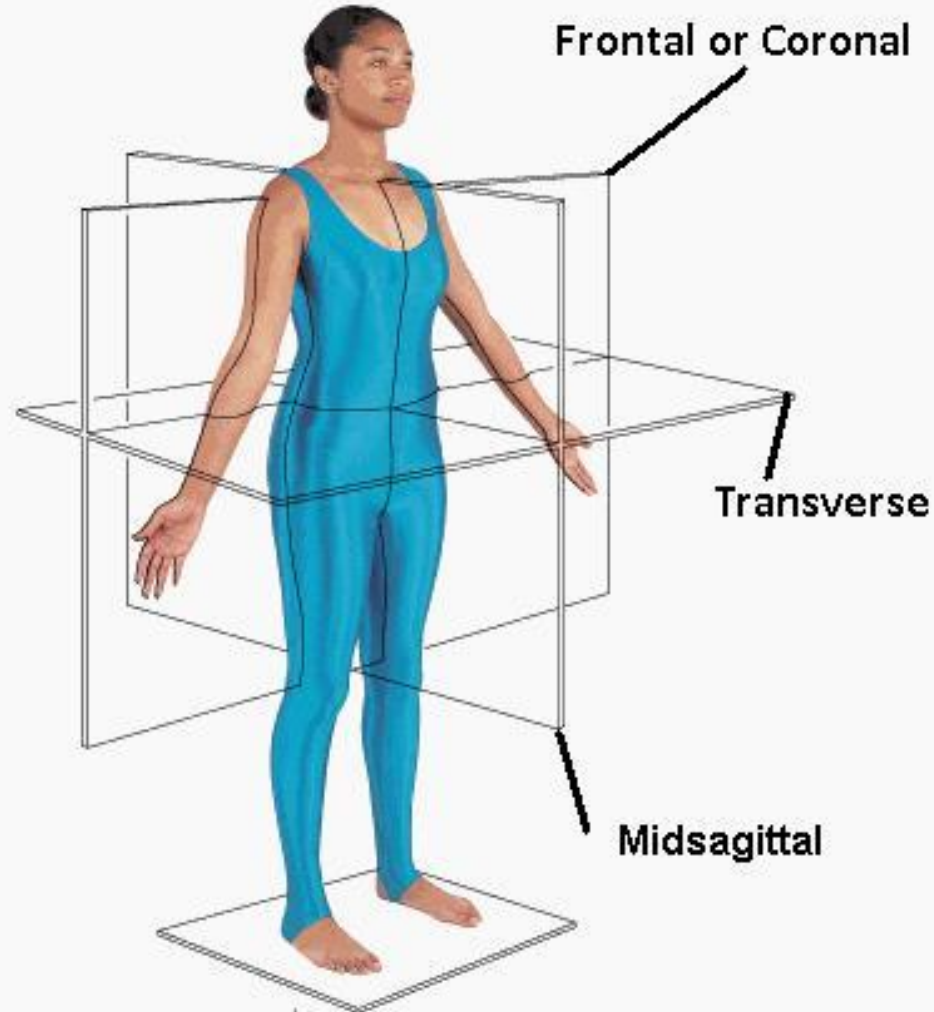


BODY ORIENTATION AND DIRECTION

- Define:
- Superior
 - Above
- Inferior
 - Below
- Anterior
 - In front
- Posterior
 - Behind
- Dorsal
 - Towards the Back
- Ventral
 - Towards the Belly

- Define:
- Medial
 - Towards the midline
- Lateral
 - Away from the midline
- Proximal
 - Closer to the body
- Distal
 - Farther from the body
- Superficial
 - Towards the surface (skin)
- Deep
 - Away from the surface (skin)

BODY PLANES AND SECTIONS



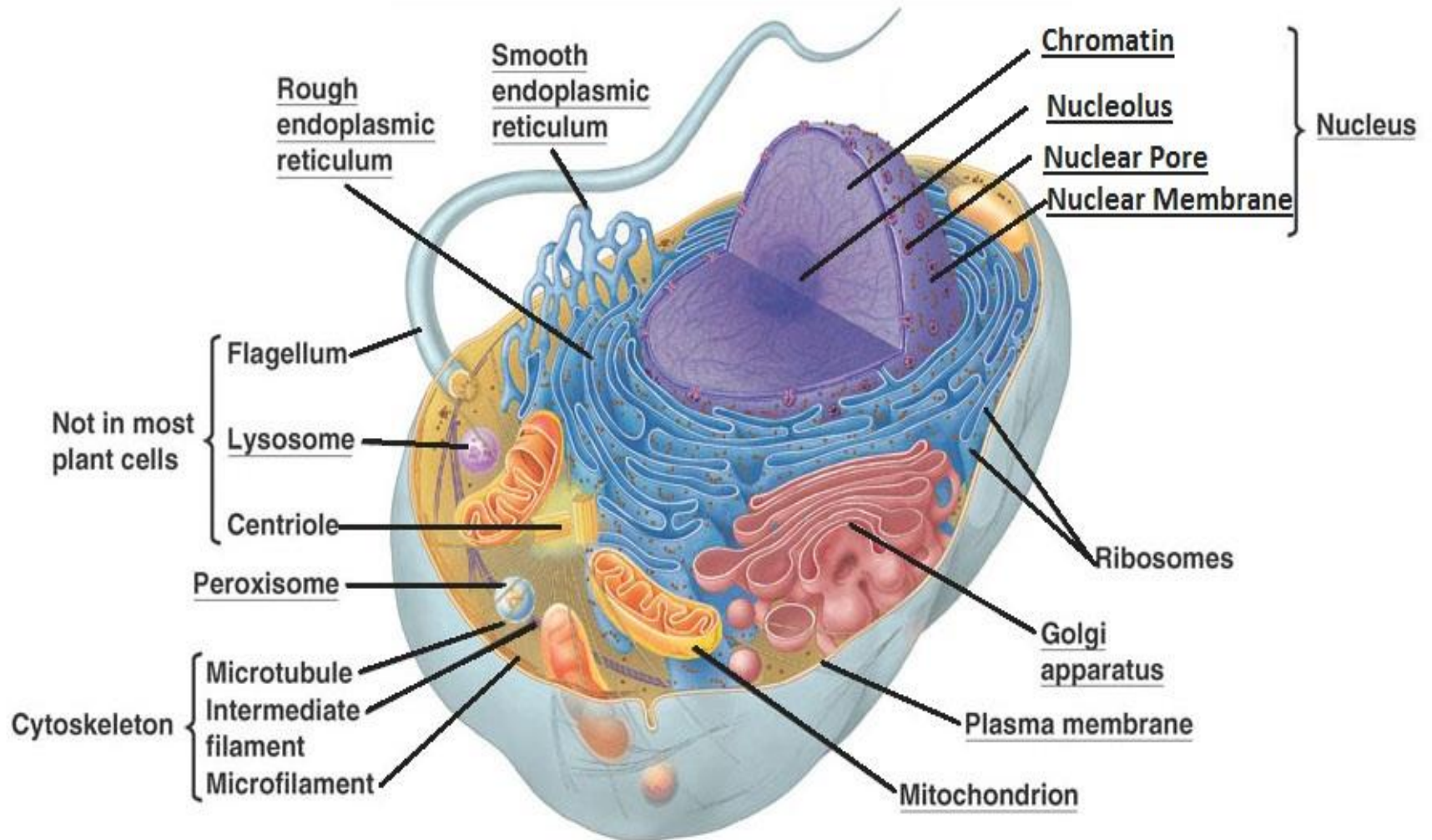
BODY CAVITIES

- Define:
- Open Cavity
 - Any cavity that can be entered without crossing a membrane
- Closed Cavity
 - Any cavity that cannot be entered without crossing a membrane
- Cranial Cavity
 - Location of Brain
- Spinal Cavity
 - Location of Spinal Cord
- Thoracic Cavity
 - Location of Heart and Lungs (subdivided into pleural, pericardial, and mediastinal cavities)
- Abdominopelvic Cavity
 - Location of digestive, urinary, and some reproductive organs

SEROUS MEMBRANES

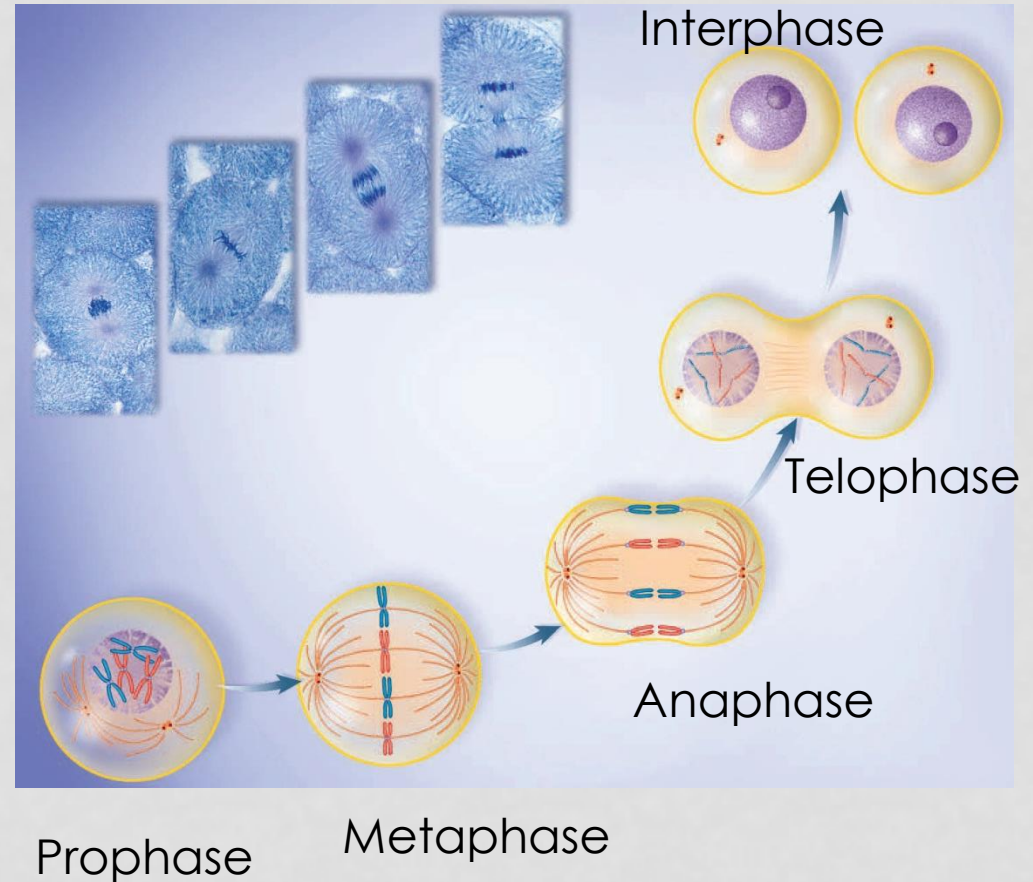
- What are the two layers of a serous membrane?
 - Parietal and Visceral
- What is the fluid between the two membranes?
 - Serous fluid
- What is the serous membrane of the lungs?
 - Pleura (parietal pleura and visceral pleura)
- What is the serous membrane of the Heart?
 - Pericardium (parietal pericardium and visceral pericardium)
- What is the serous membrane of the Abdominal Cavity?
 - Peritoneum (parietal peritoneum and visceral peritoneum)
- What is the mesentery?
 - A double layer of serosa that suspends and attaches organs to the wall of the abdominal cavity

CELL ANATOMY



MITOSIS

- What is Mitosis?
 - Nuclear Division in a cell that results in diploid cells
- What are the five stages of Mitosis?
- Interphase
- Prophase
- Metaphase
- Anaphase
- Telophase



MEIOSIS

- What is Meiosis?
 - Nuclear Division in a cell that results in haploid gametes (sex cells)
- What is haploid?
 - Half the normal number of chromosomes, or, one set of chromosomes(i.e. 23 chromosomes in eggs/sperm)
- What is Diploid?
 - A normal number of chromosomes, or, two sets of chromosomes(i.e. 23 pairs in normal somatic cells)
- What is cytokinesis?
 - Usually the last stage in cell division, occurs with telophase

TISSUES

What are the four types of tissue and the different categories within each type?

Epithelial

- Simple Squamous
- Simple Columnar
- Simple Cuboidal
- Stratified Squamous
- Pseudostratified Columnar

Muscular

- Smooth
- Skeletal
- Cardiac

Connective

- Loose/Areolar
- Dense/Fibrous
- Adipose
- Bone/Osseous
- Cartilage/Hyaline
- Blood

Nervous

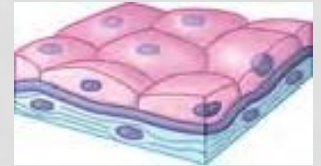
- Neurons

EPITHELIAL TISSUE

Stratified Squamous – multilayered, regenerates rapidly, found in harsh environments in/on the body



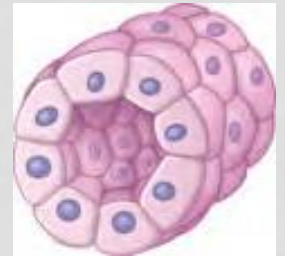
Simple Squamous – single layer of flat cells, found in capillaries



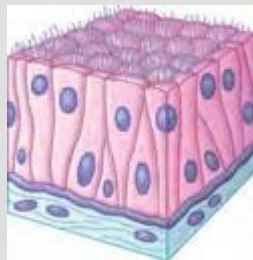
Simple Columnar – single layer of tall column-like cells, found in intestines



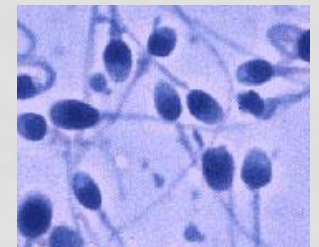
Simple Cuboidal – single layer of cube-shaped cells, found in kidneys and glands



Pseudostratified Columnar – squished and abnormally shaped columnar cells, usually ciliated, found in upper respiratory tract

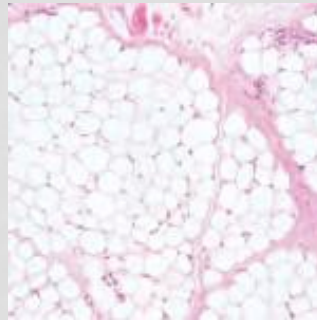


Reproductive Cells – sperm and egg cells are haploid gametes

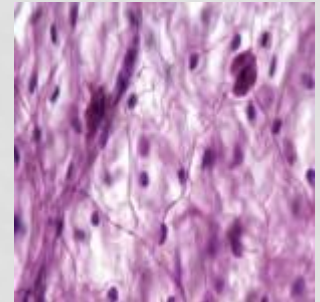


CONNECTIVE TISSUE

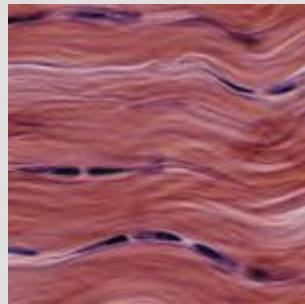
Adipose – Cells contain a large fat droplet, used for energy storage



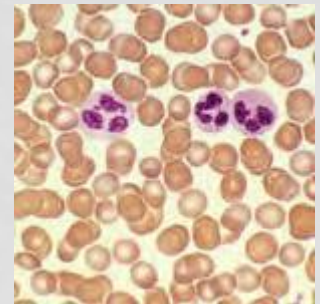
Loose/Areolar - binds epithelia and organs in place, has loosely connected fibers



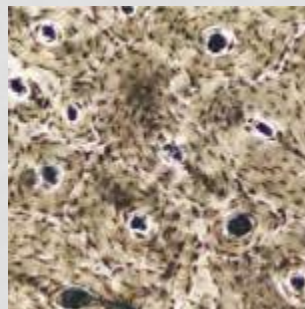
Fibrous – dense with collagenous fibers, found in tendons and ligaments



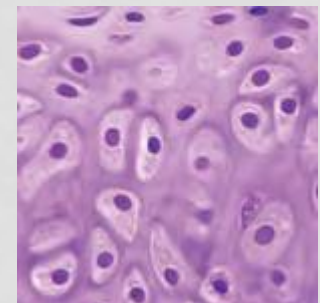
Blood – made up of plasma, erythrocytes, leukocytes and platelets, carries nutrients and wastes



Bone – Osteocytes, osteoblasts, and osteoclasts suspended in an extracellular matrix of hard calcium

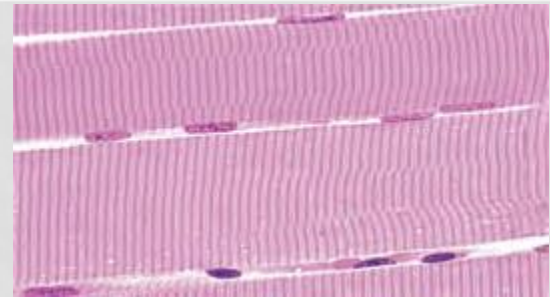


Cartilage – chondrocytes secrete a rubbery matrix of collagen and chondroitin sulfate, found in joints

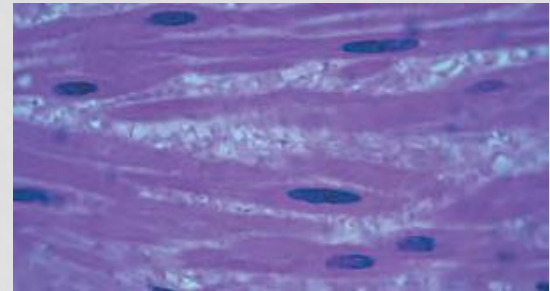


MUSCLE TISSUE

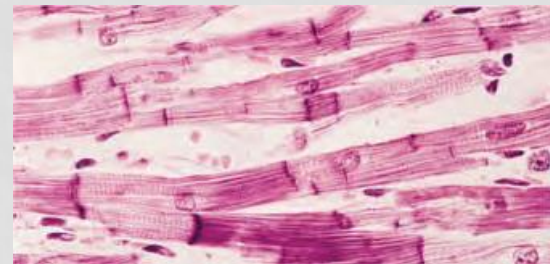
Skeletal Muscle – Bundles of long, unbranched, striated cells, responsible for voluntary movement, made up of sarcomeres



Smooth Muscle – non-striated and spindle shaped, responsible for involuntary activity of things like the stomach and constriction/dilation of arteries



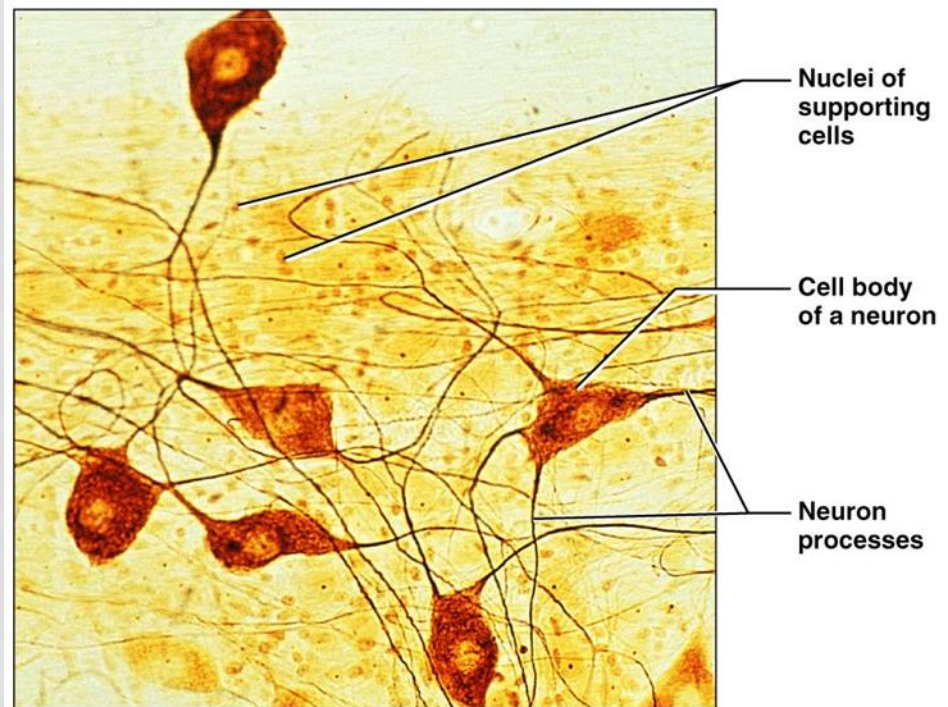
Cardiac Muscle – branched and striated, has intercalated disks to help transfer of electrical signals, found only in the heart, responsible for contraction of the walls of the heart



NERVOUS TISSUE

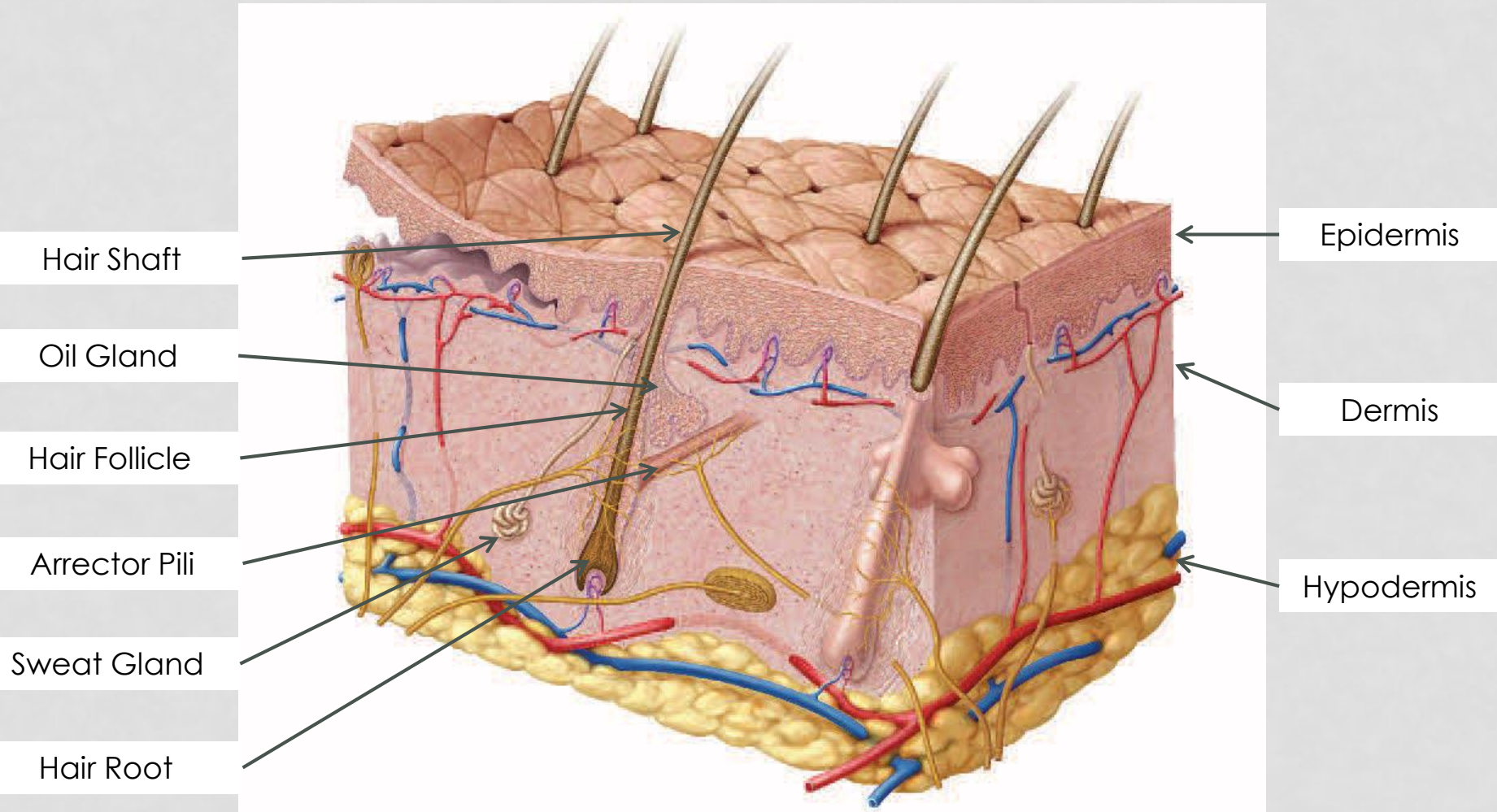
Neurons – Receive and transmit signal throughout the body via the nervous system. Have dendrites for receiving impulses from other nerve cells and axons for sending out impulses to other cells

Glia – cells that support, nourish, and insulate the neurons



Photomicrograph: Neurons (100x)

THE INTEGUMENTARY SYSTEM



BONE CLASSIFICATION



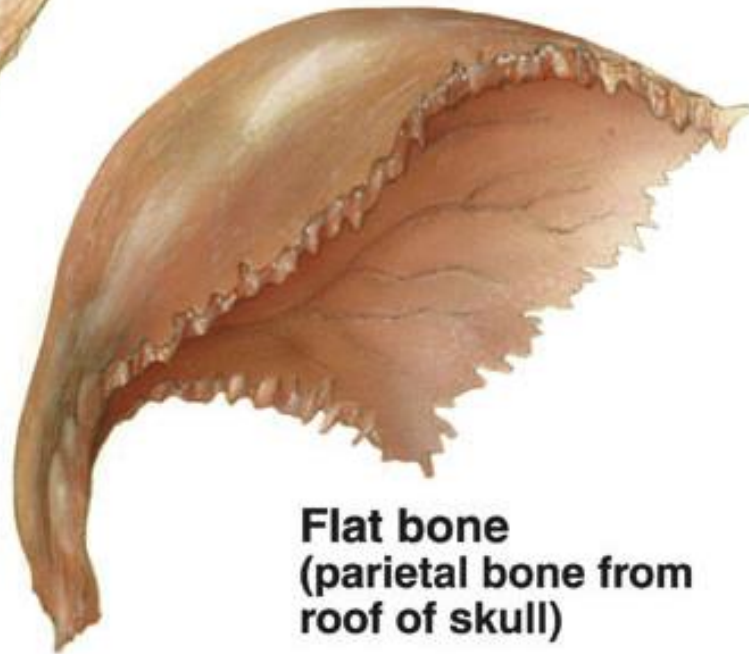
Long bone
(femur or thighbone)



Irregular bone
(sphenoid bone
from skull)



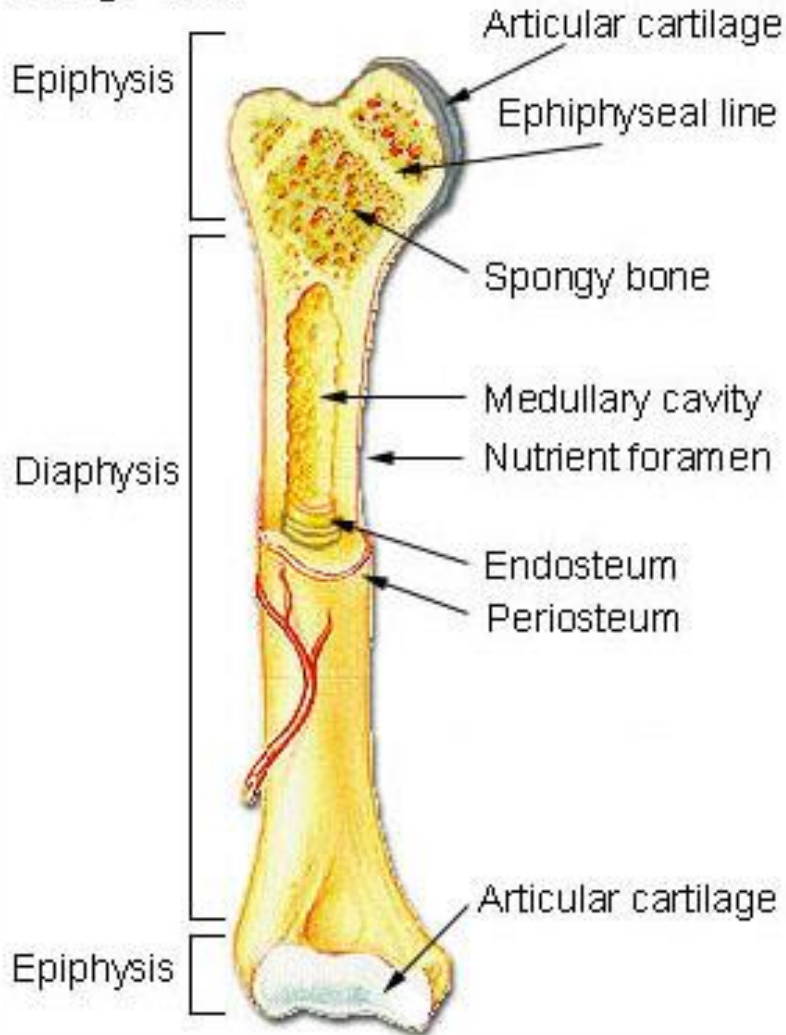
Short bone
(carpal or wrist bone)



Flat bone
(parietal bone from
roof of skull)

BONE ANATOMY

Long Bone

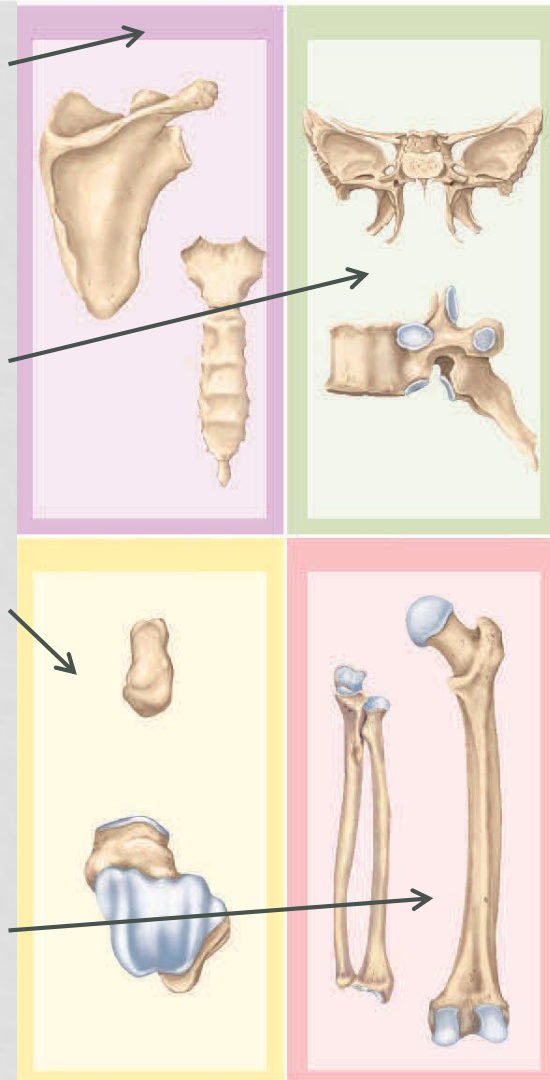


Flat

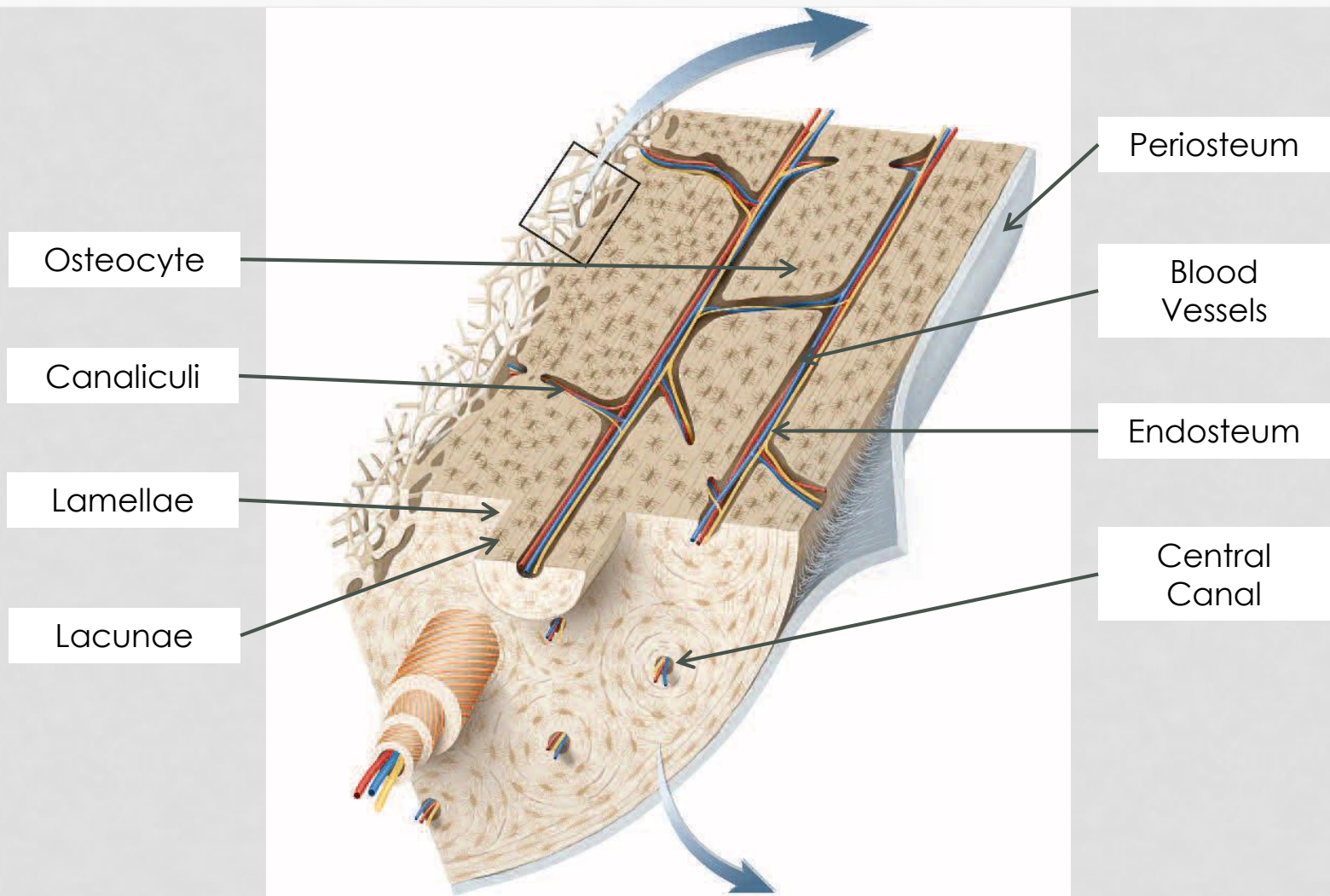
Irregular

Short

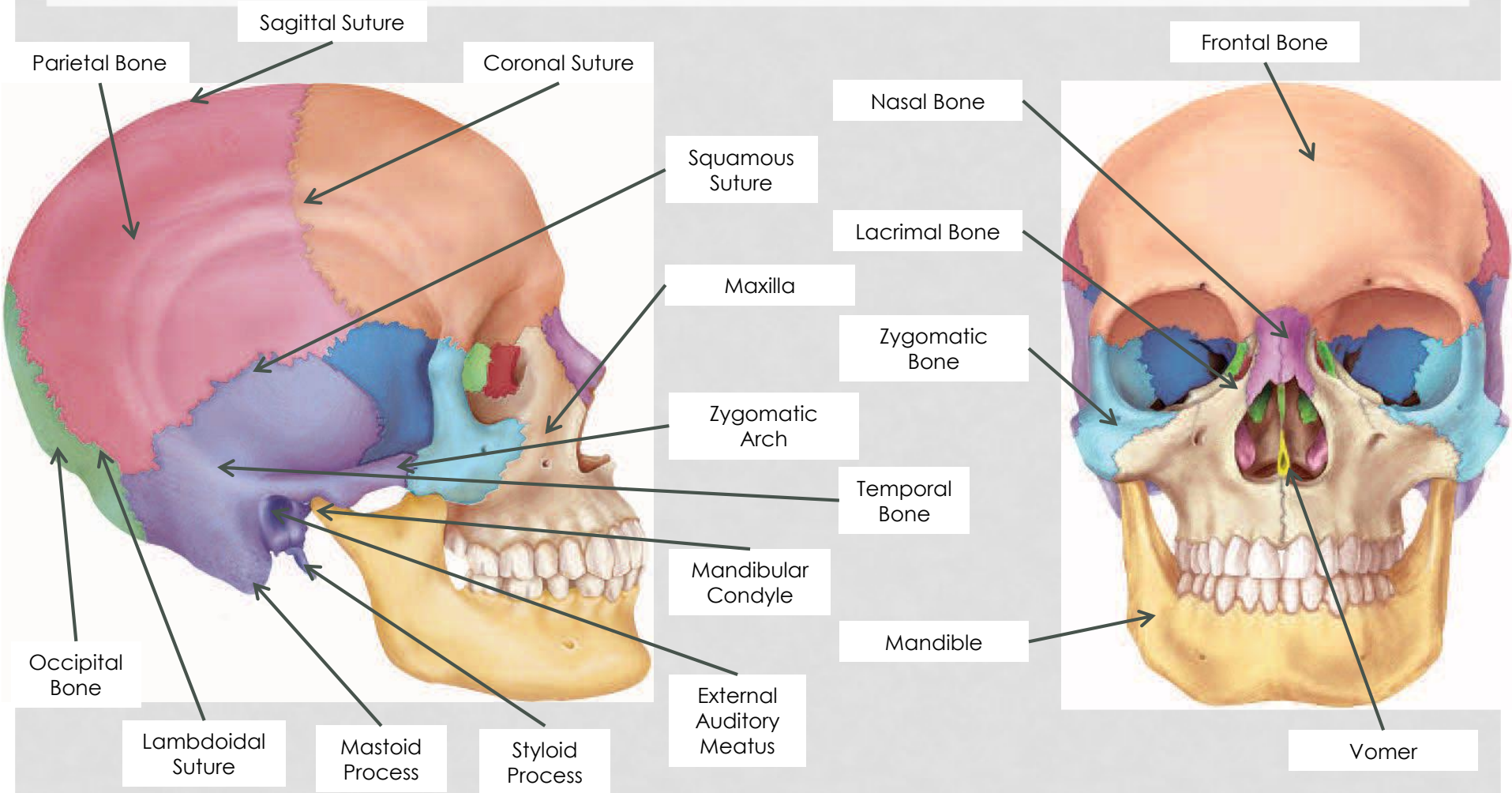
Long



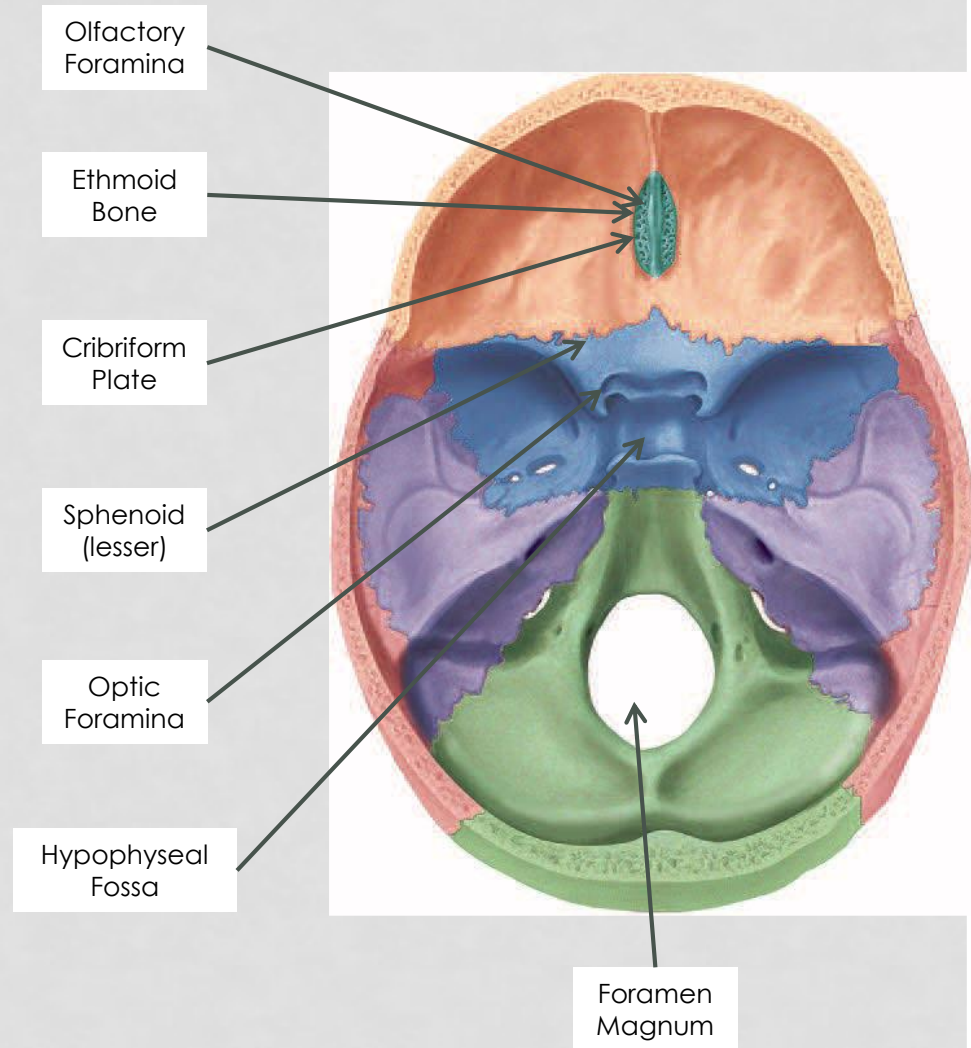
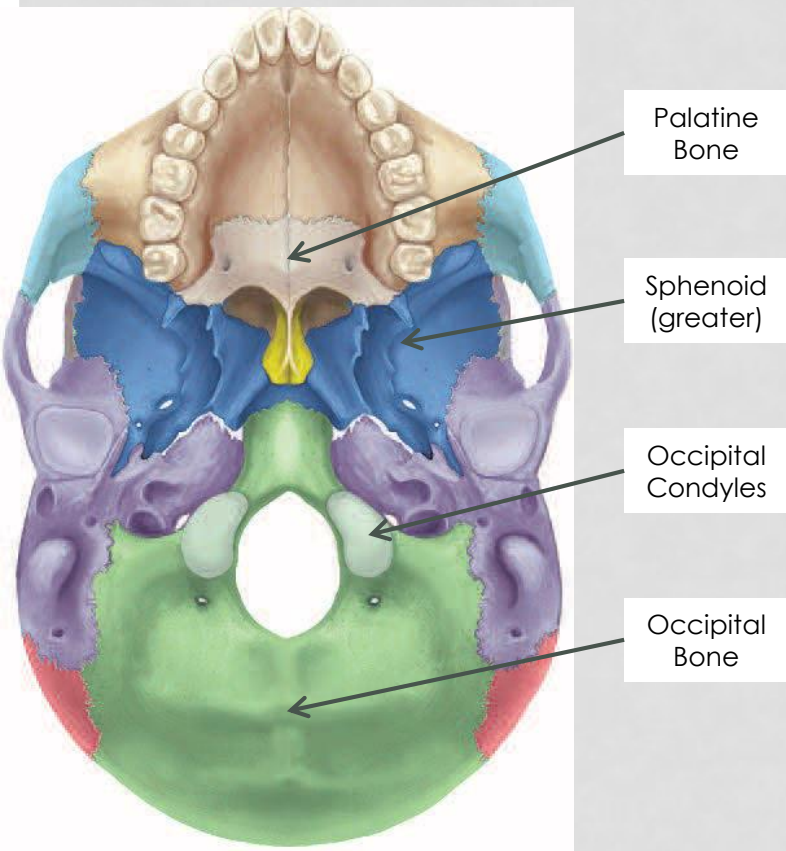
MICROSCOPIC BONE ANATOMY



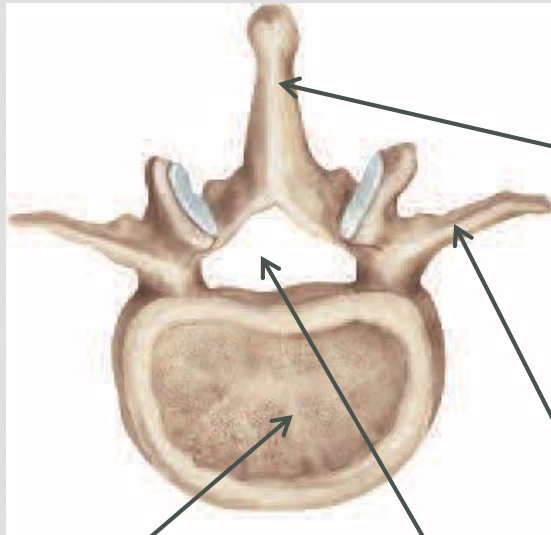
THE AXIAL SKELETON



THE AXIAL SKELETON



THE AXIAL SKELETON



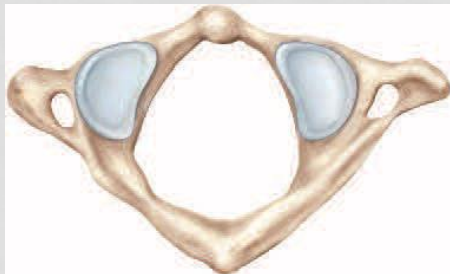
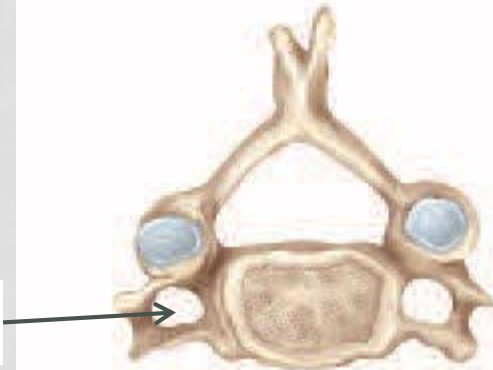
Spinous
Process

Transverse
Process

Body

Vertebral
Foramen

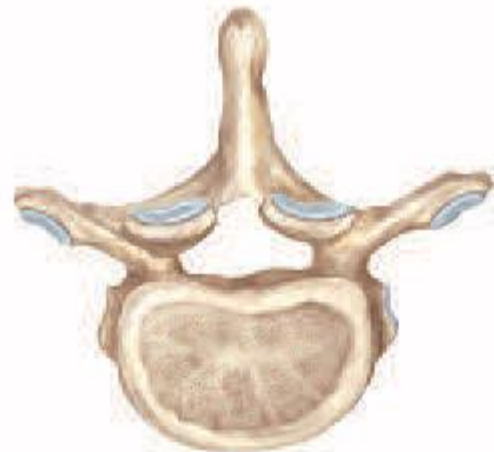
Transverse
Foramen



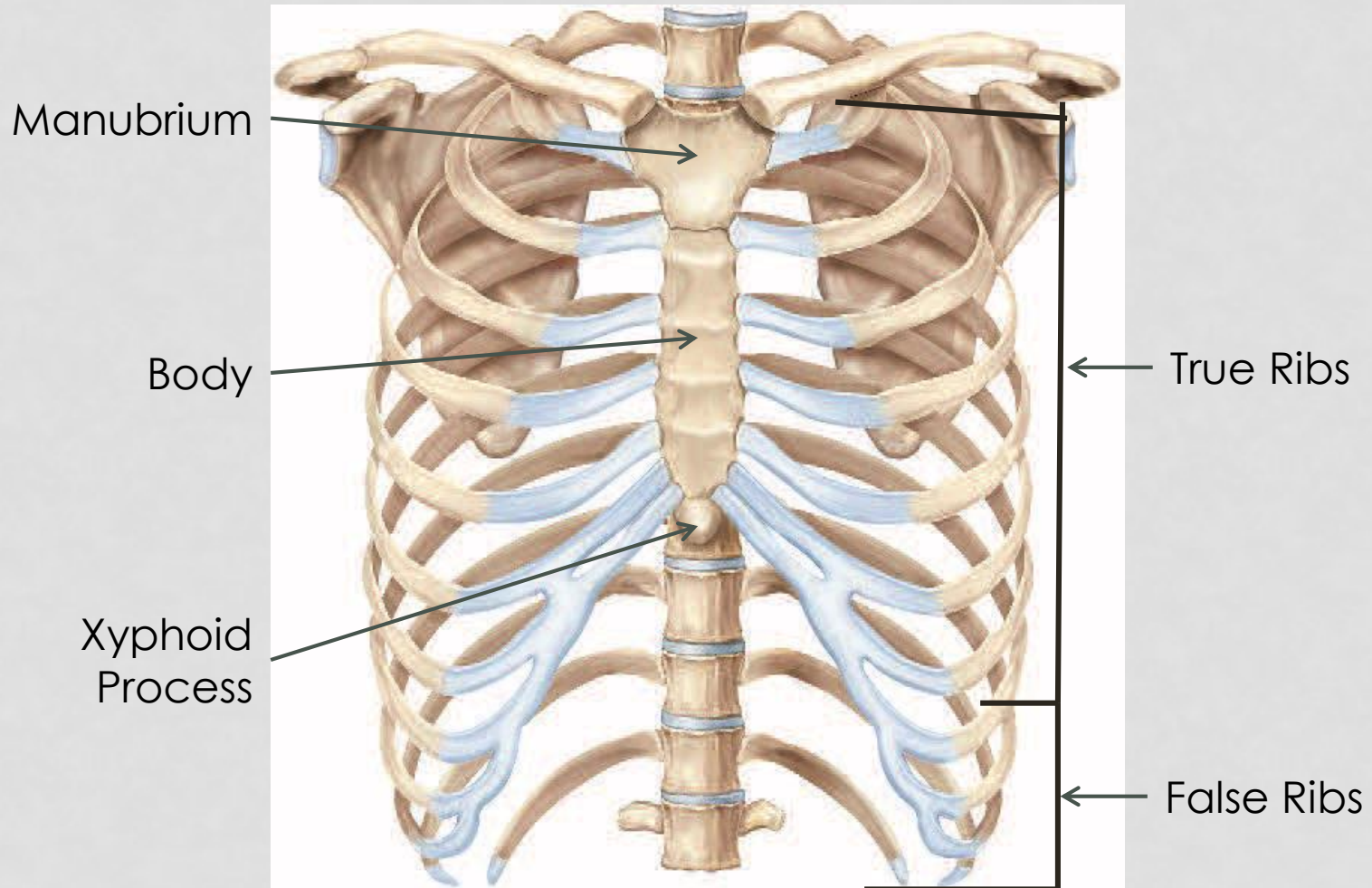
Atlas



Axis



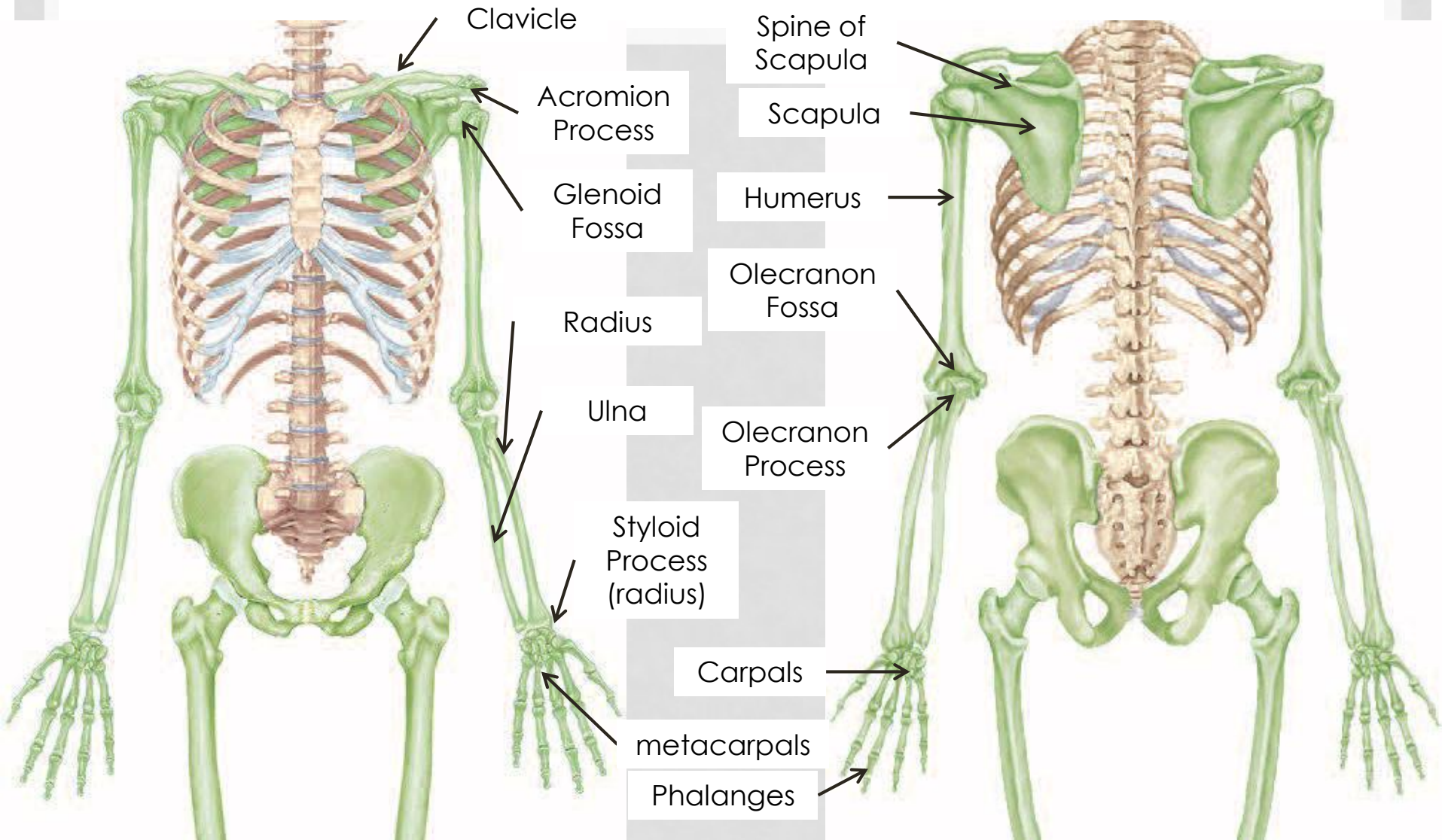
THE AXIAL SKELETON



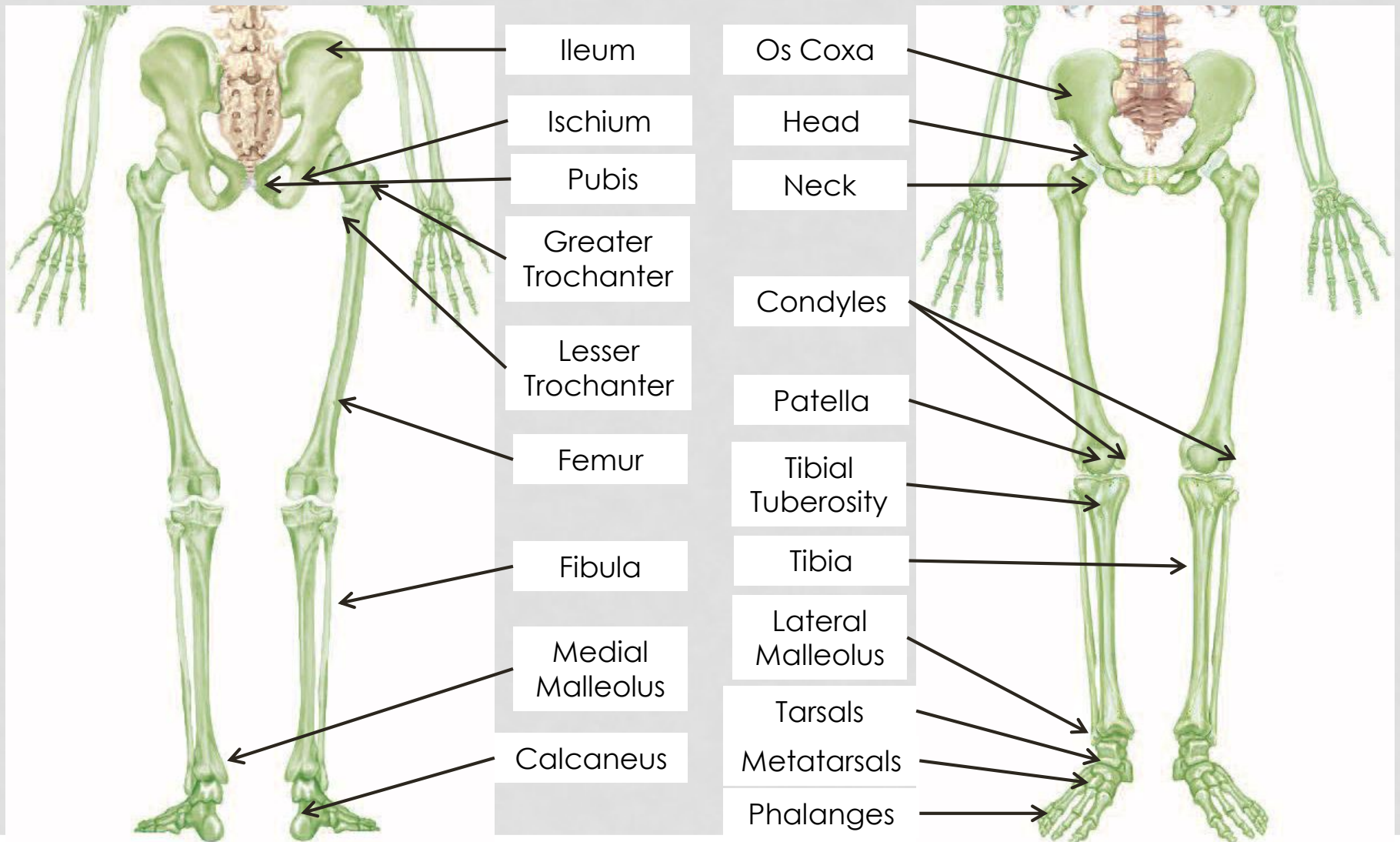
THE AXIAL SKELETON

- What are the 5 types of vertebrae and how many are there of each type?
 - 7 Cervical
 - 12 Thoracic
 - 5 Lumbar
 - 5 Fused Sacral Vertebrae
 - 3-5 Small Coccal Vertebrae (coccyx)
- How many pairs of ribs are there and what type of vertebra does each pair anchor to?
 - 12, Thoracic
- How many of each type of rib are there?
 - 7 true
 - 5 false

THE APPENDICULAR SKELETON



THE APPENDICULAR SKELETON





DAYTONA STATE COLLEGE

Questions



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