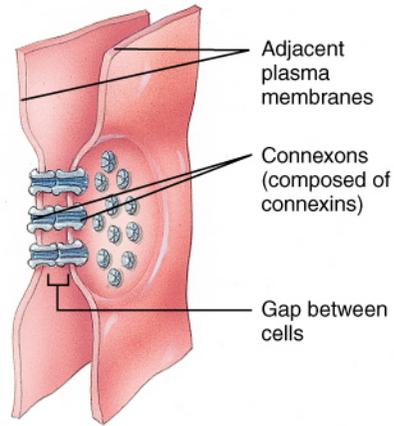
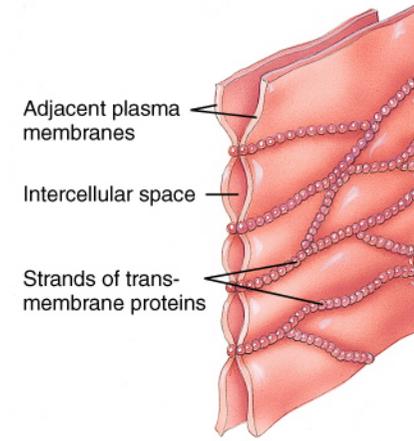
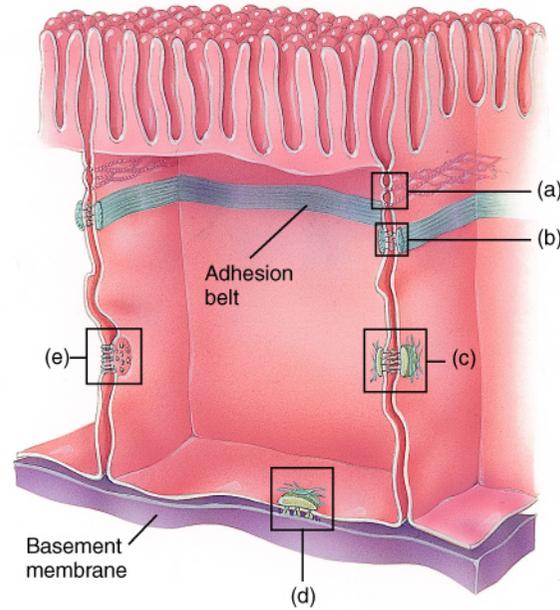


Tissues

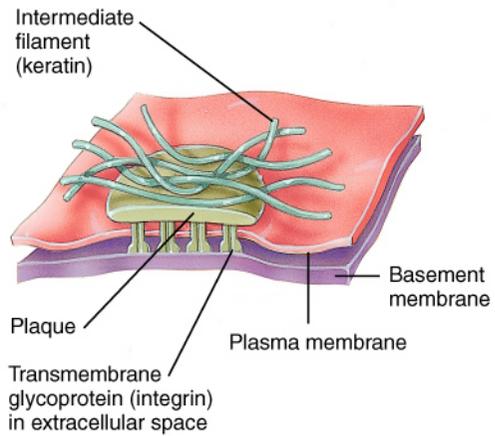
www.fisiokinesiterapia.biz



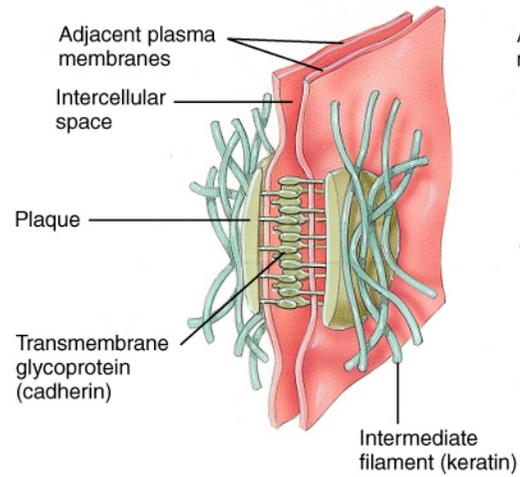
(e) Gap junction



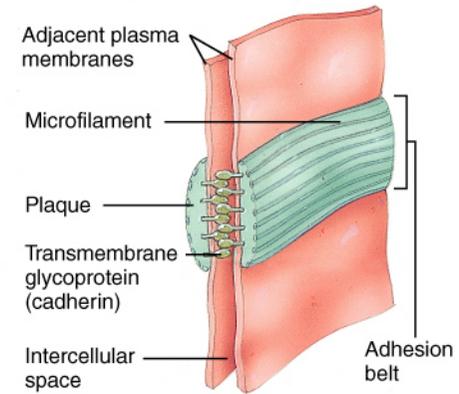
(a) Tight junction



(d) Hemidesmosome



(c) Desmosome



(b) Adherens junction

Four Tissue Types

- Epithelia
- Connective
- Muscle
- Nervous

Epithelia

Cell Shapes

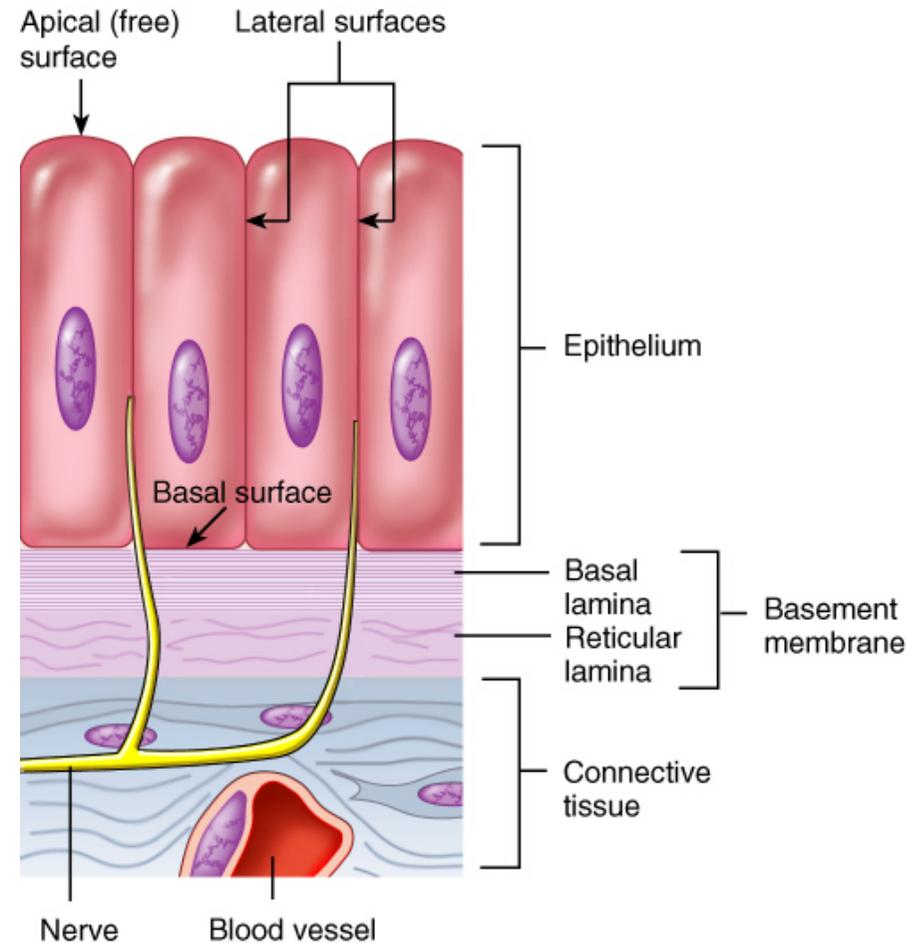
1. Squamous
2. Cuboidal
3. Columnar

Arrangement

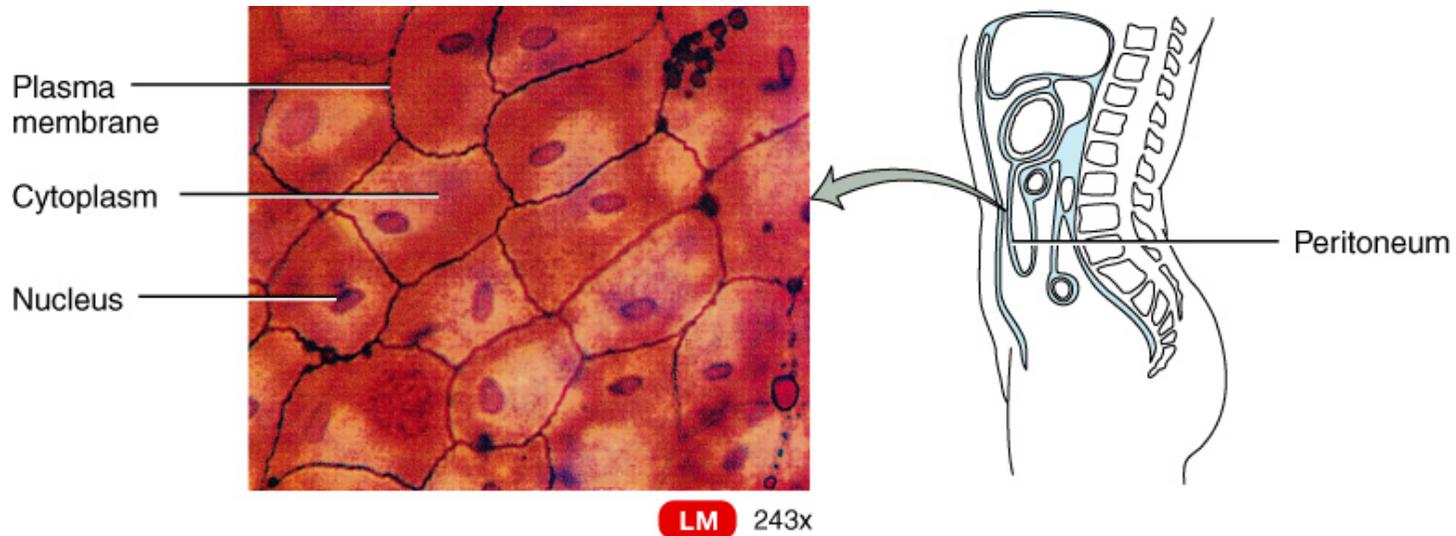
1. Simple
2. Stratified
3. Pseudostratified

Characteristics of Epithelia

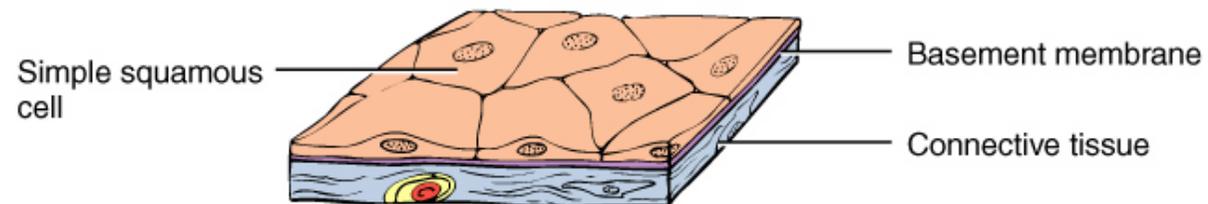
- Apical surface
- Basal surface
- Basement membrane
- Avascular
- Highly mitotic
- Minimal neural connections



Simple Squamous



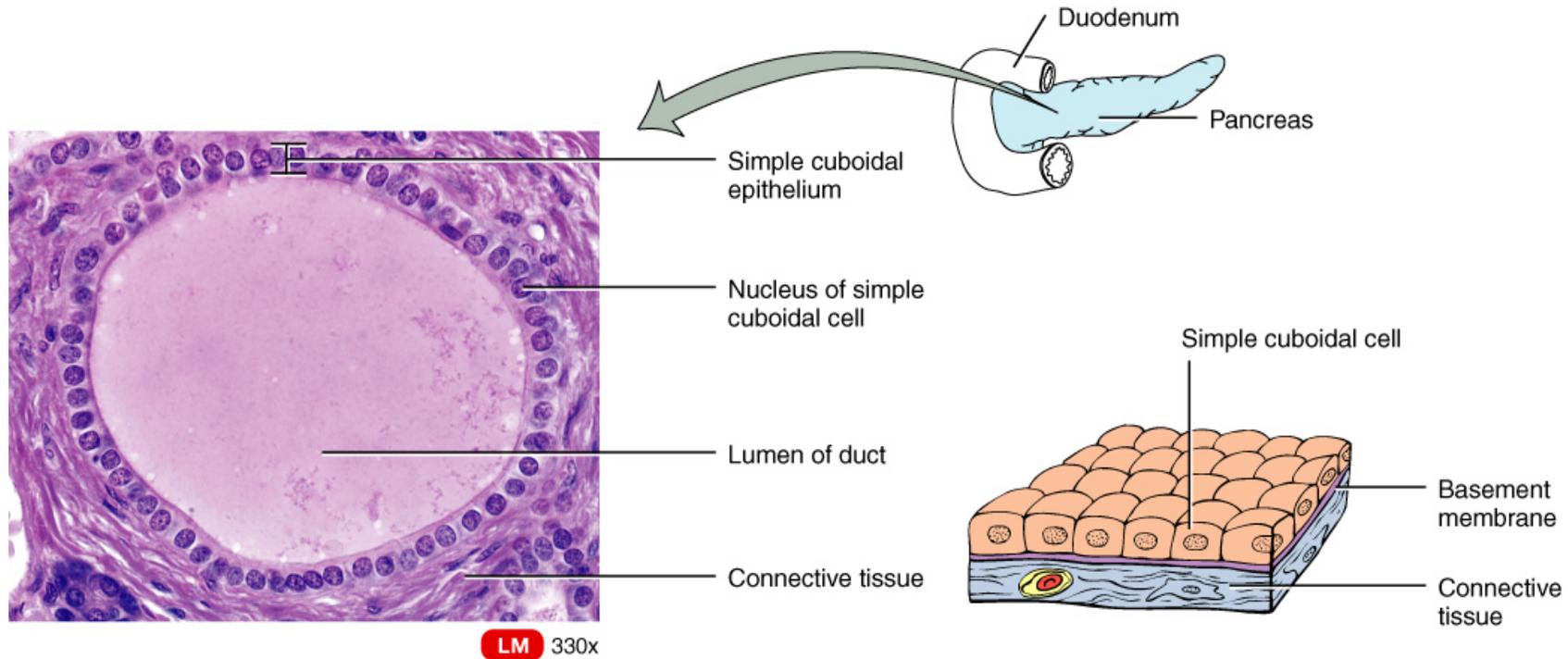
Surface view of simple squamous epithelium of mesothelial lining of peritoneum



Simple squamous epithelium

04.T01A

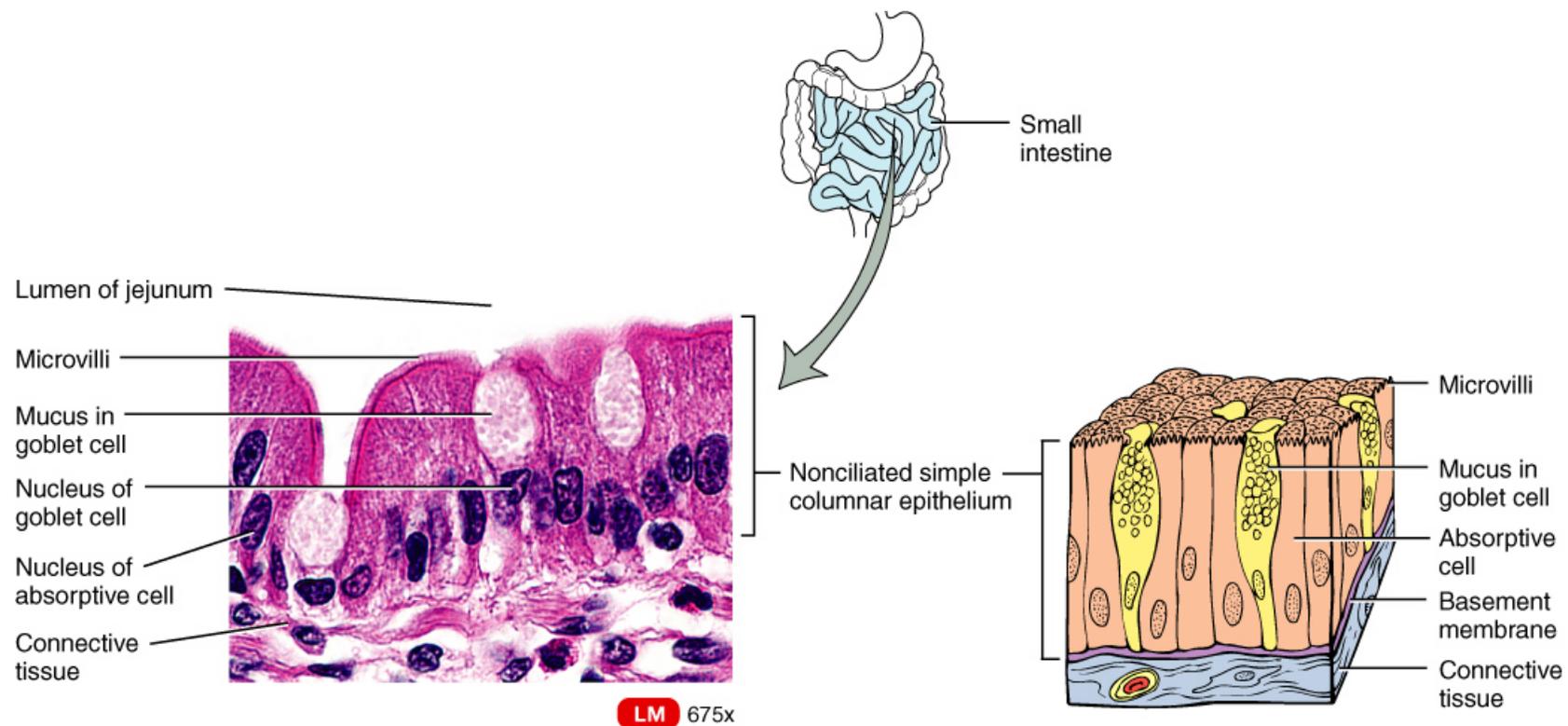
Simple Cuboidal



Sectional view of simple cuboidal epithelium of intralobular duct of pancreas

Simple cuboidal epithelium

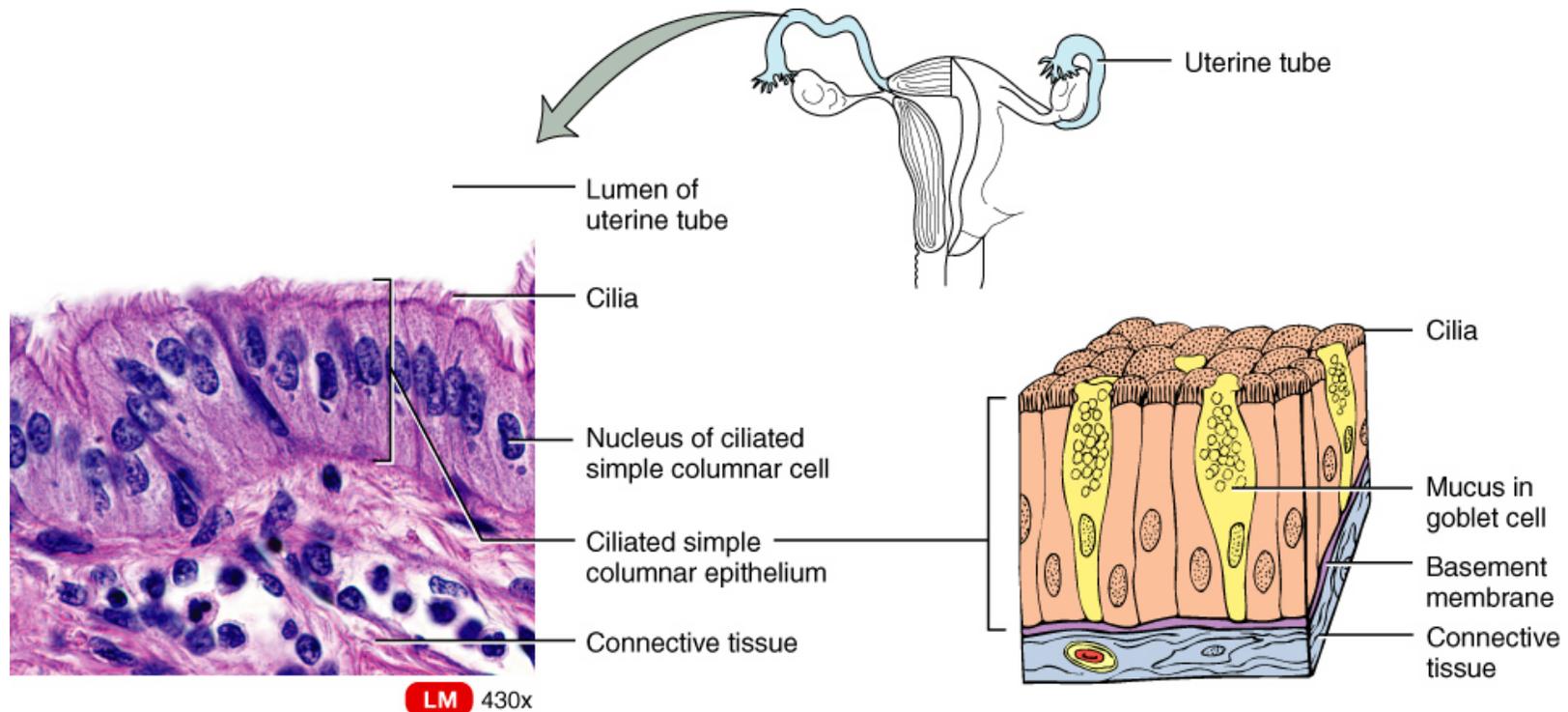
Simple Columnar Epithelium



Sectional view of nonciliated simple columnar epithelium of lining of jejunum of small intestine

Nonciliated simple columnar epithelium

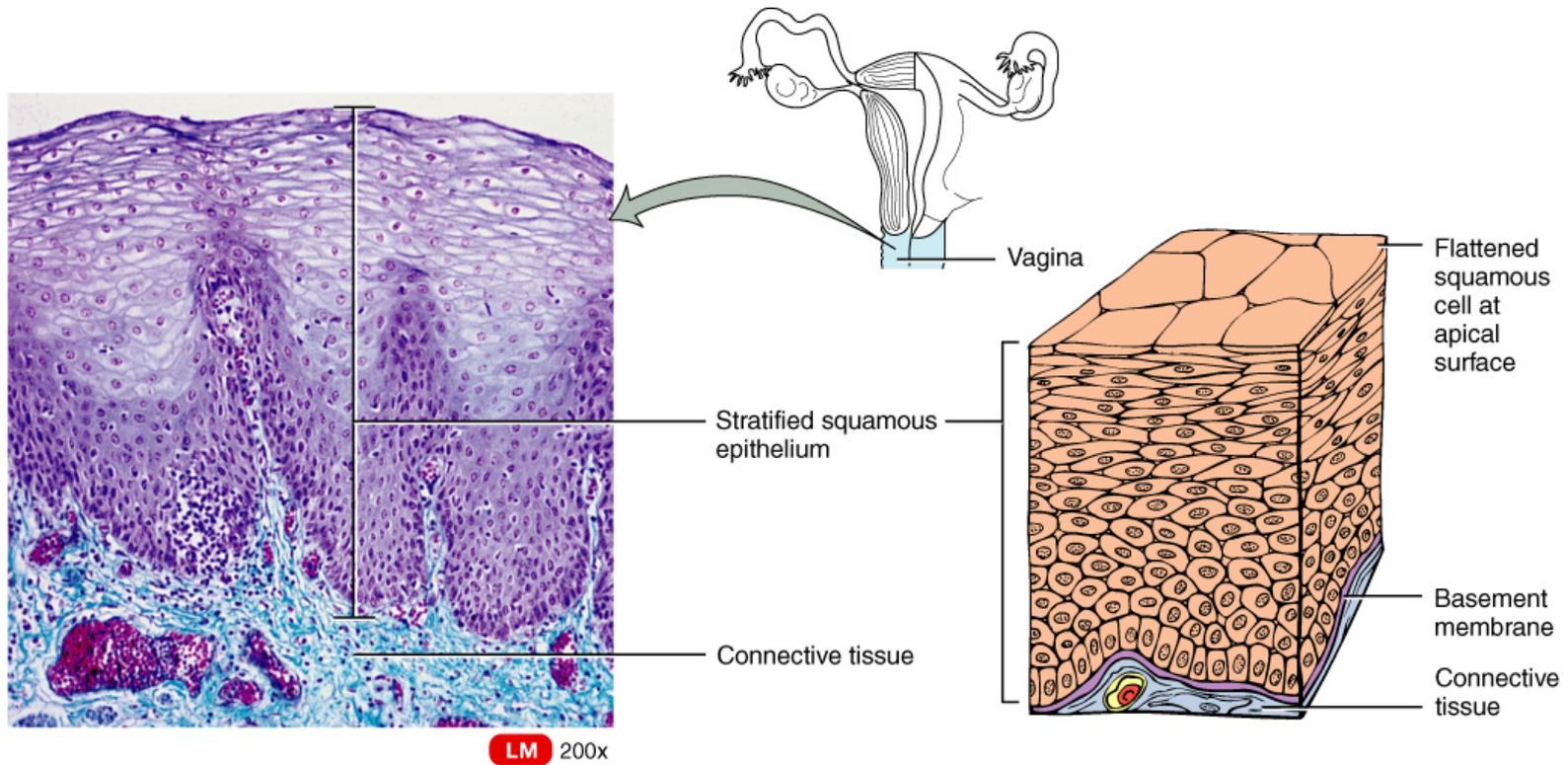
Simple Columnar Epithelium with cilia



Sectional view of ciliated simple columnar epithelium of uterine tube

Ciliated simple columnar epithelium

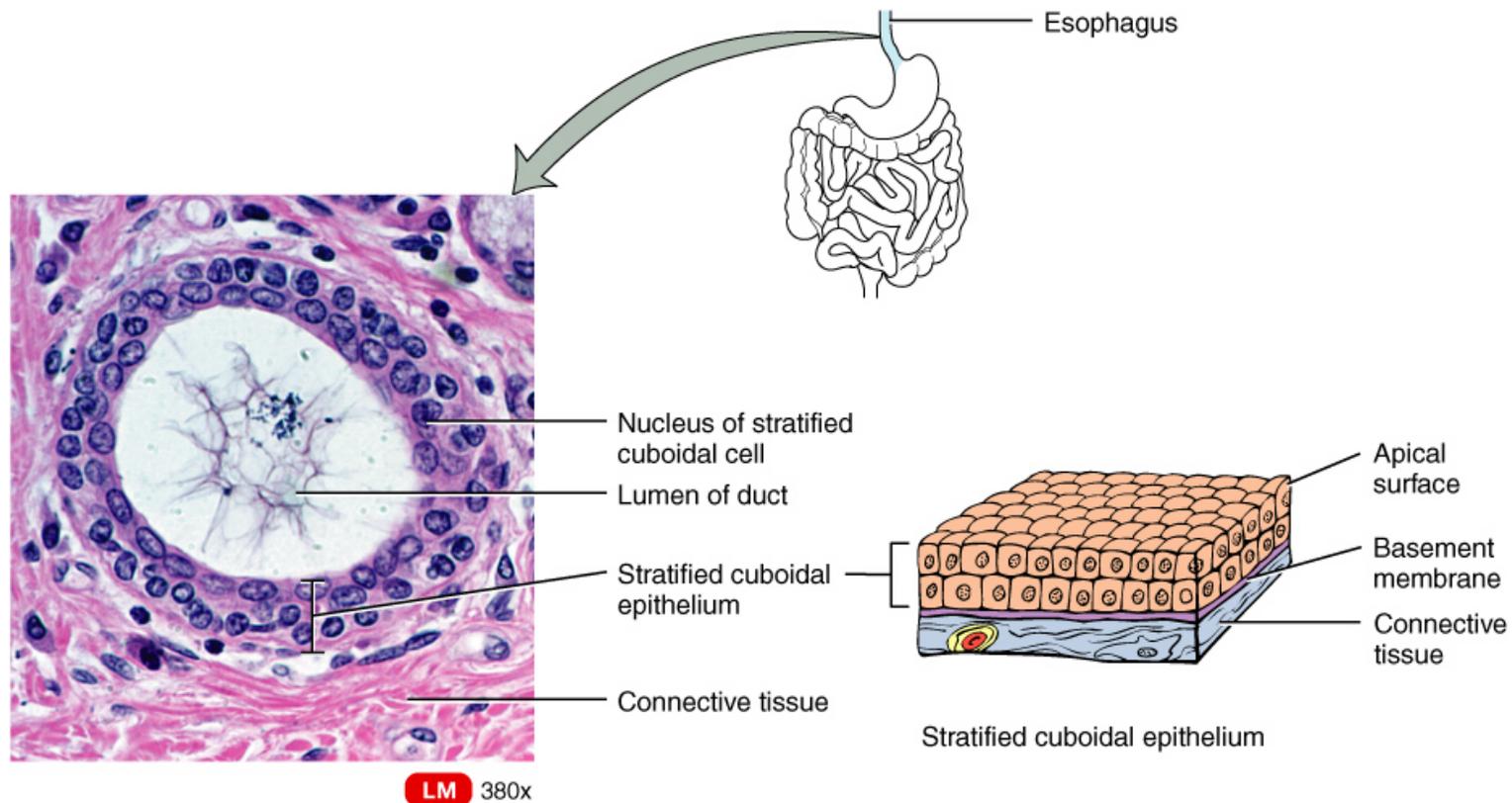
Stratified Squamous Epithelium



Sectional view of stratified squamous epithelium of vagina

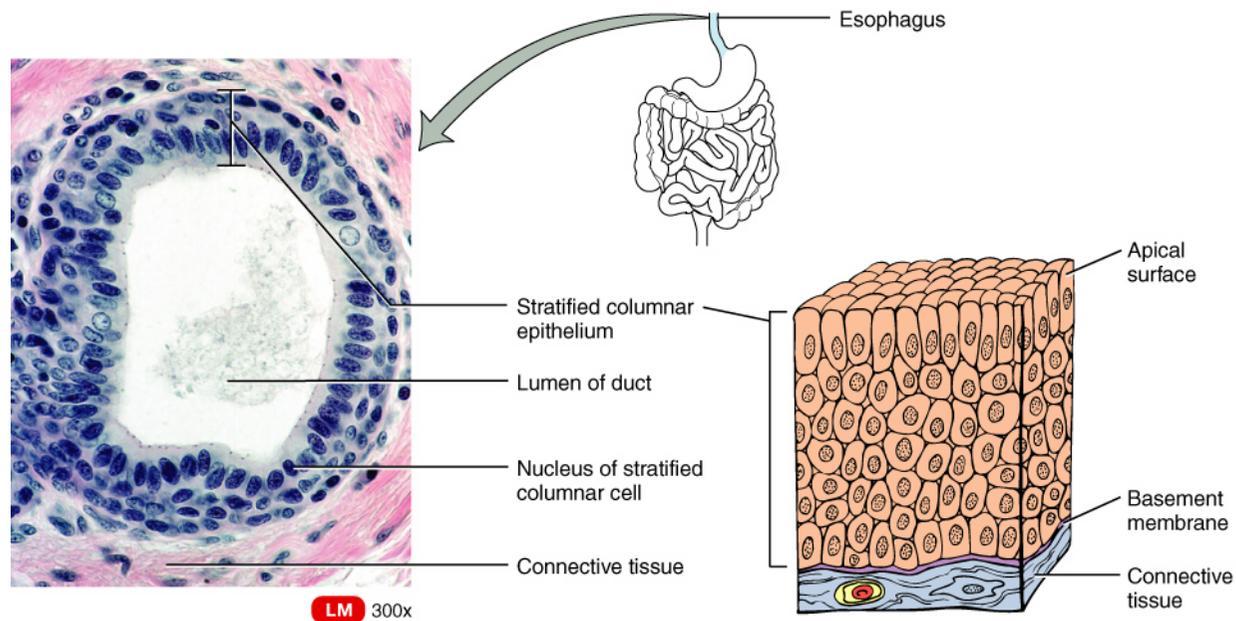
Stratified squamous epithelium

Stratified Cuboidal Epithelium



Sectional view of stratified cuboidal epithelium of the duct of an esophageal gland

Stratified Columnar Epithelium

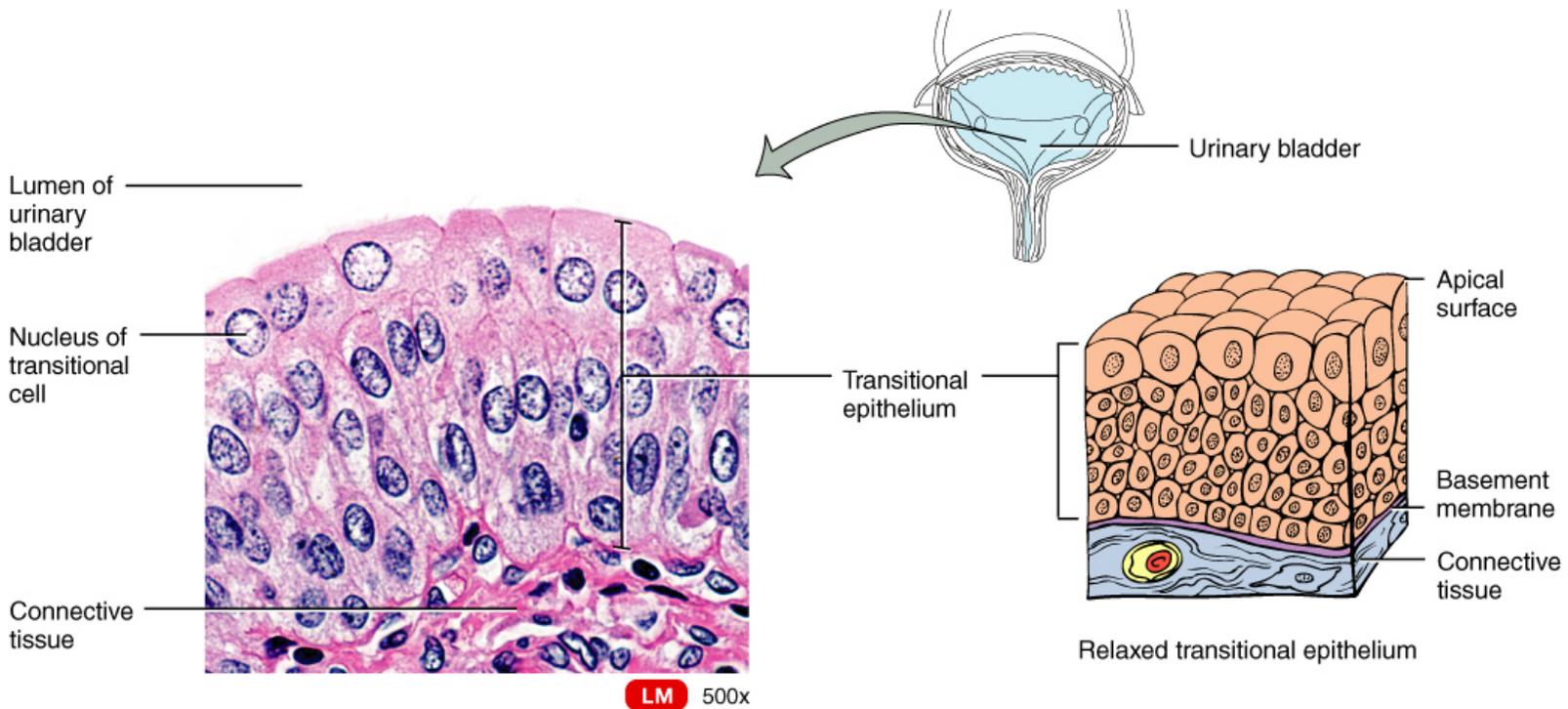


Sectional view of stratified columnar epithelium of the duct of an esophageal gland

Stratified columnar epithelium

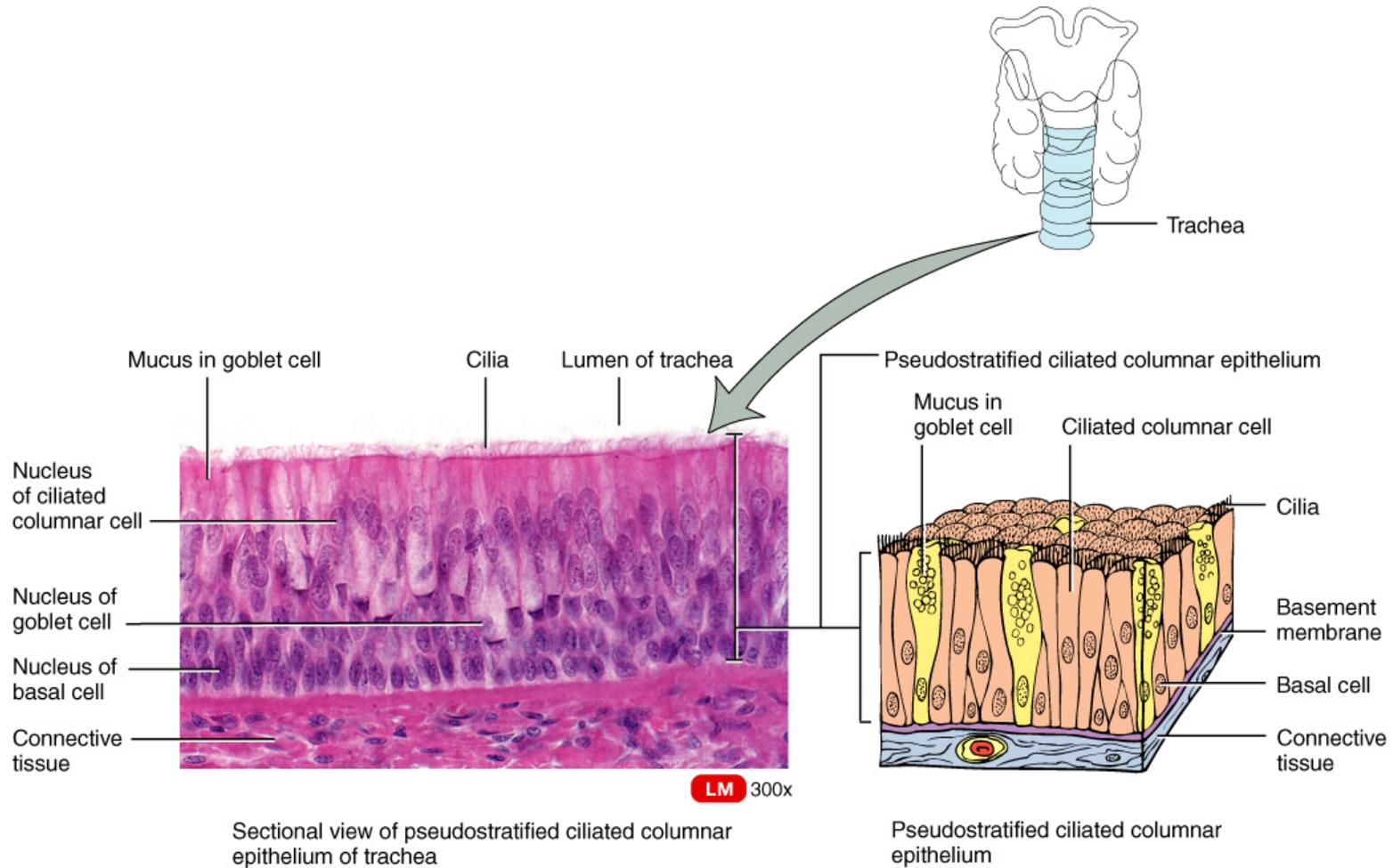
04.T01G

Transitional Epithelium

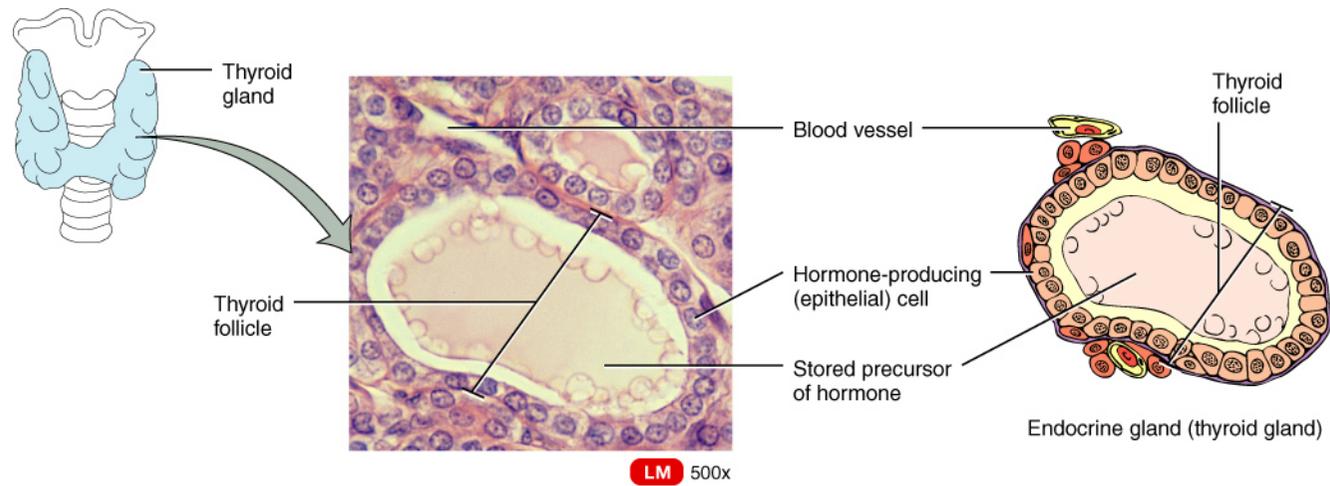


Sectional view of transitional epithelium of urinary bladder in relaxed state

Pseudostratified Columnar Epithelium



Endocrine Glands

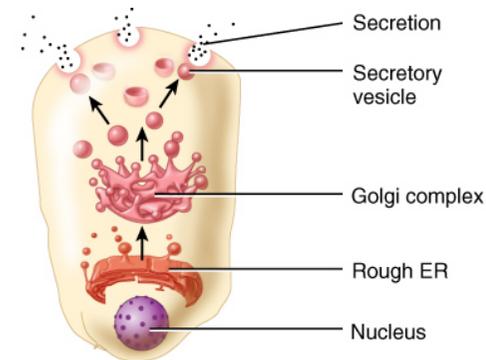


Sectional view of endocrine gland (thyroid gland)

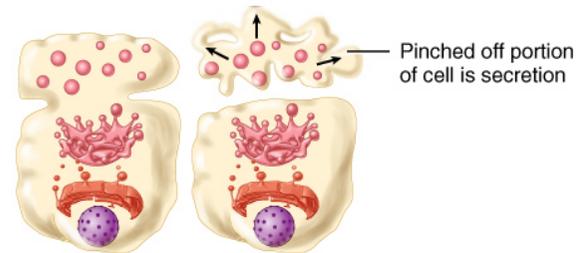
04.T01J

Exocrine Glands

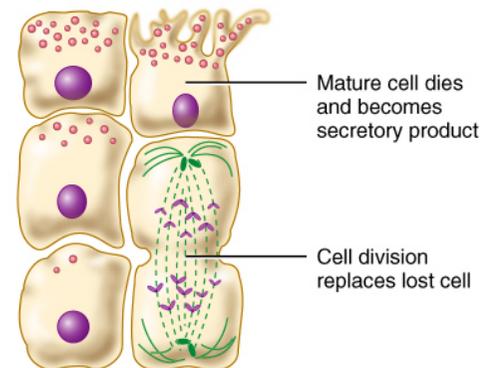
- Merocrine – chemical release – salivary glands.
- Apocrine – Pinch off portions of cells – Mammary glands
- Holocrine – slough off the whole cell – sebaceous glands.



(a) Merocrine secretion



(b) Apocrine secretion

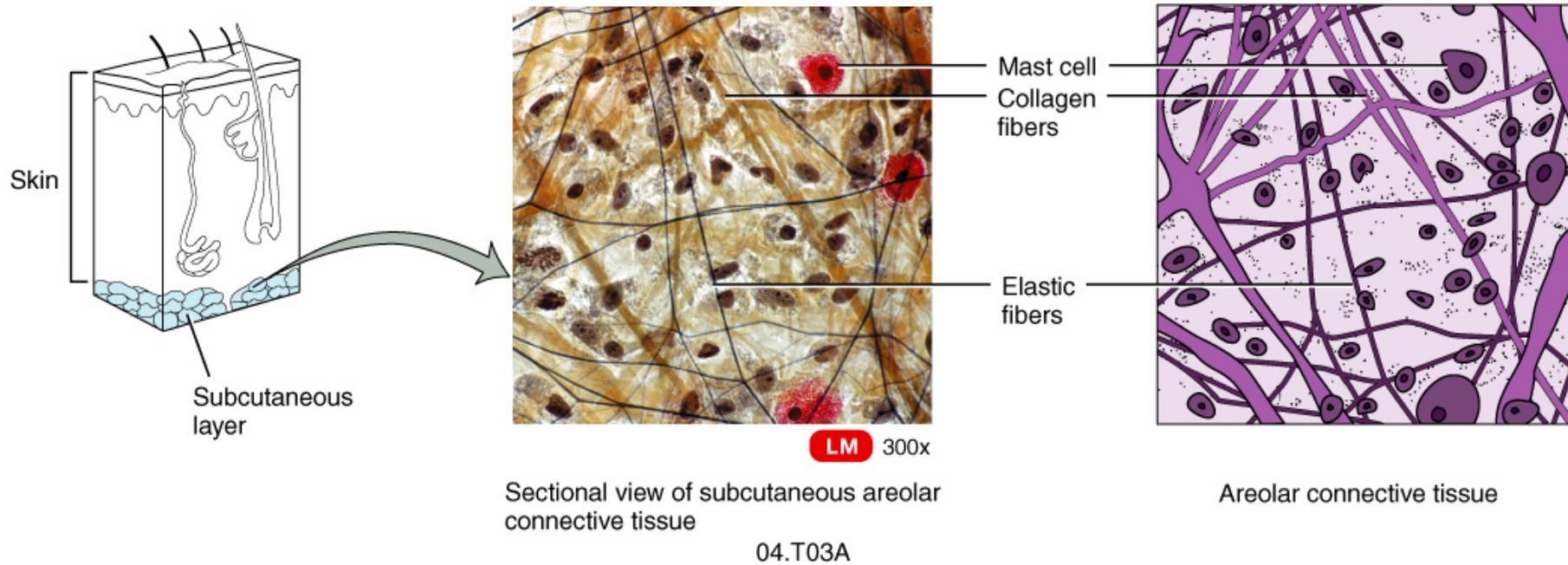


(c) Holocrine secretion

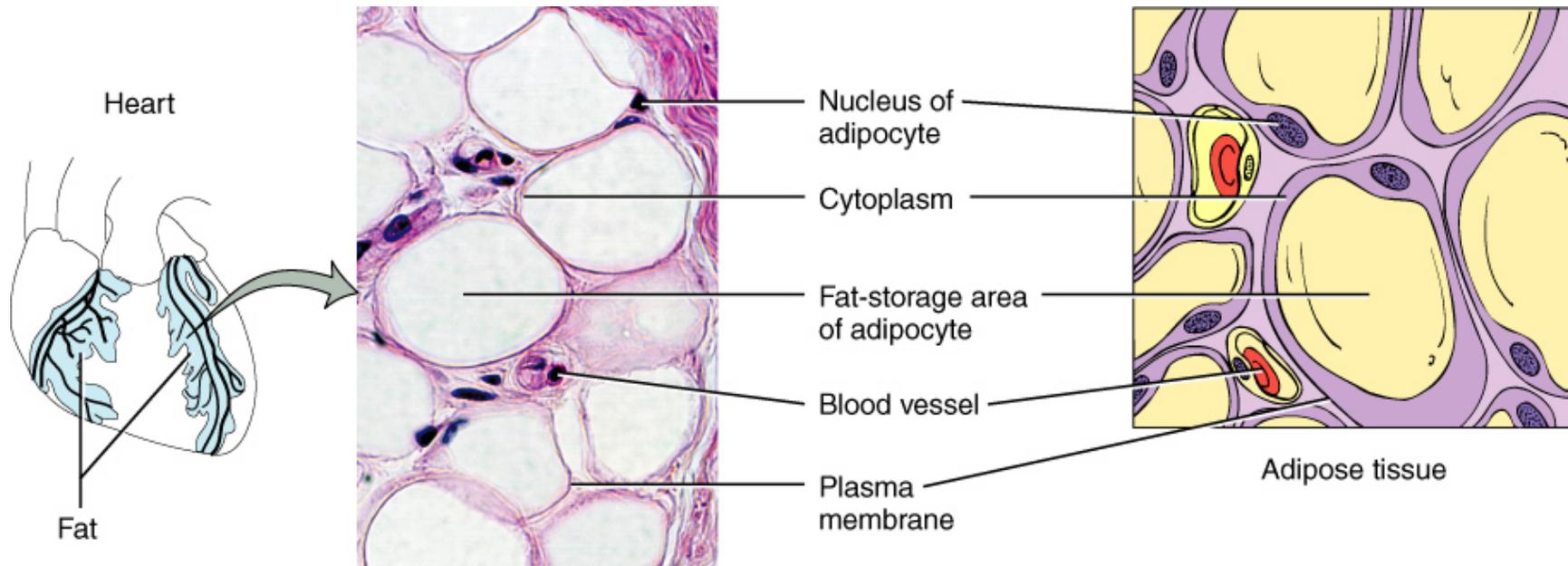
Connective Tissues

- Contain a matrix
- Some contain fibers
- Have a variety of functional cells
- Most are vascular
- Most have neural connections

Areolar Connective



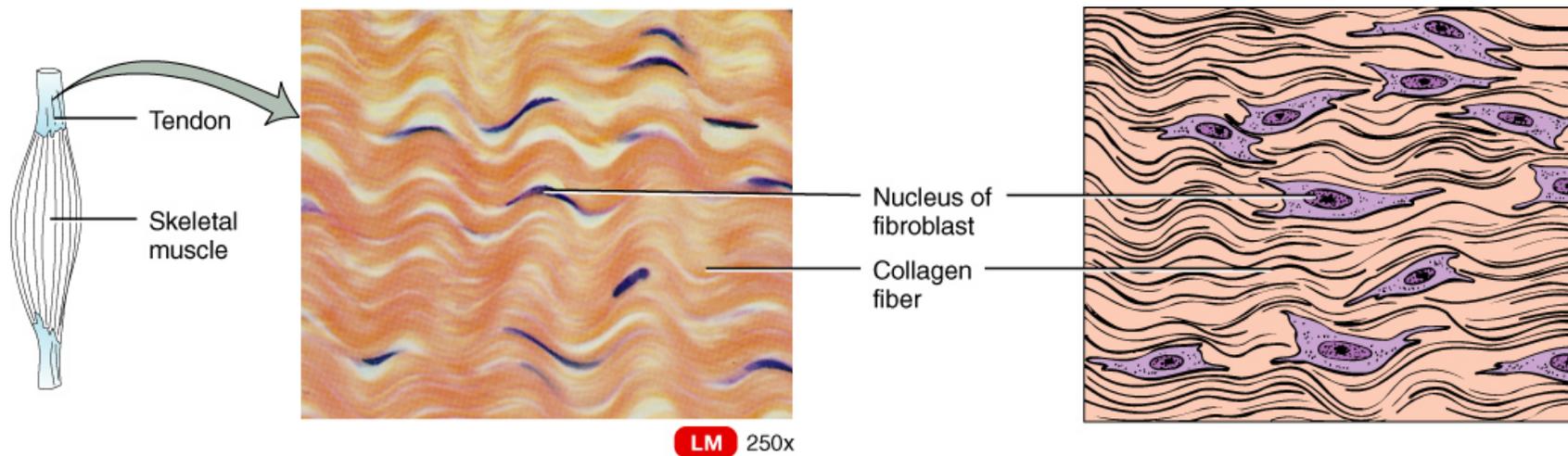
Adipose Connective



LM 300x

Sectional view of adipose tissue showing adipocytes of white fat

Dense Regular Connective

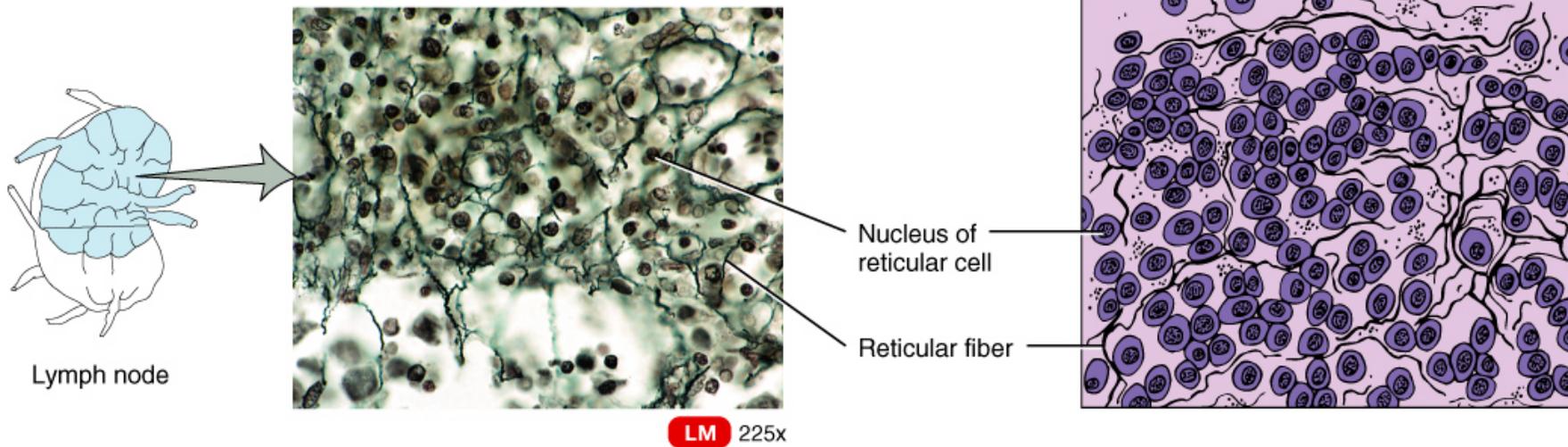


Sectional view of dense regular connective tissue of a tendon

Dense regular connective tissue

04.T03D

Reticular Connective



Lymph node

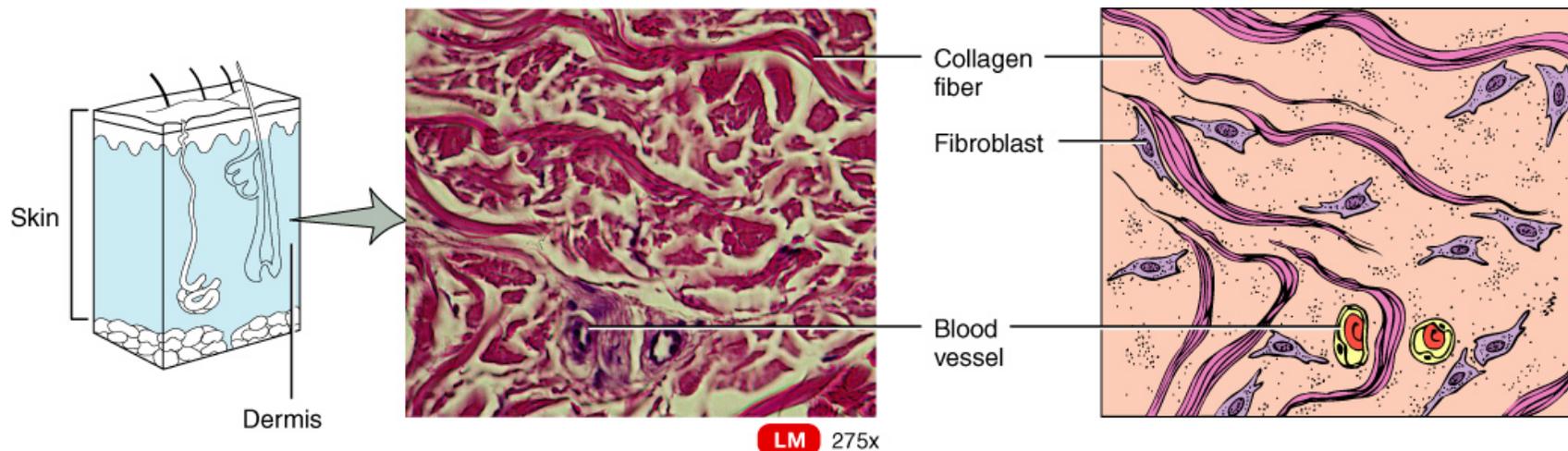
LM 225x

Sectional view of reticular connective tissue of a lymph node

Reticular connective tissue

04.T03C

Dense Irregular Connective

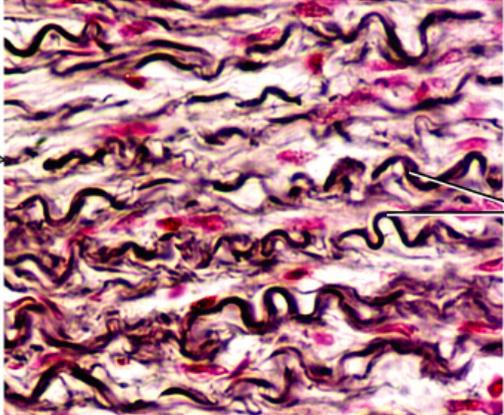


Sectional view of dense irregular connective tissue of reticular region of dermis

Dense irregular connective tissue

04.T03E

Elastic Connective

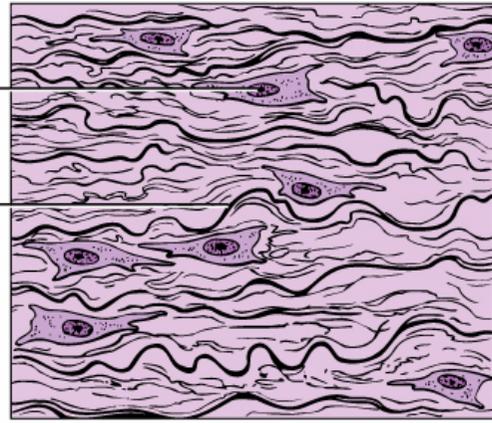


LM 435x

Sectional view of elastic connective tissue of aorta

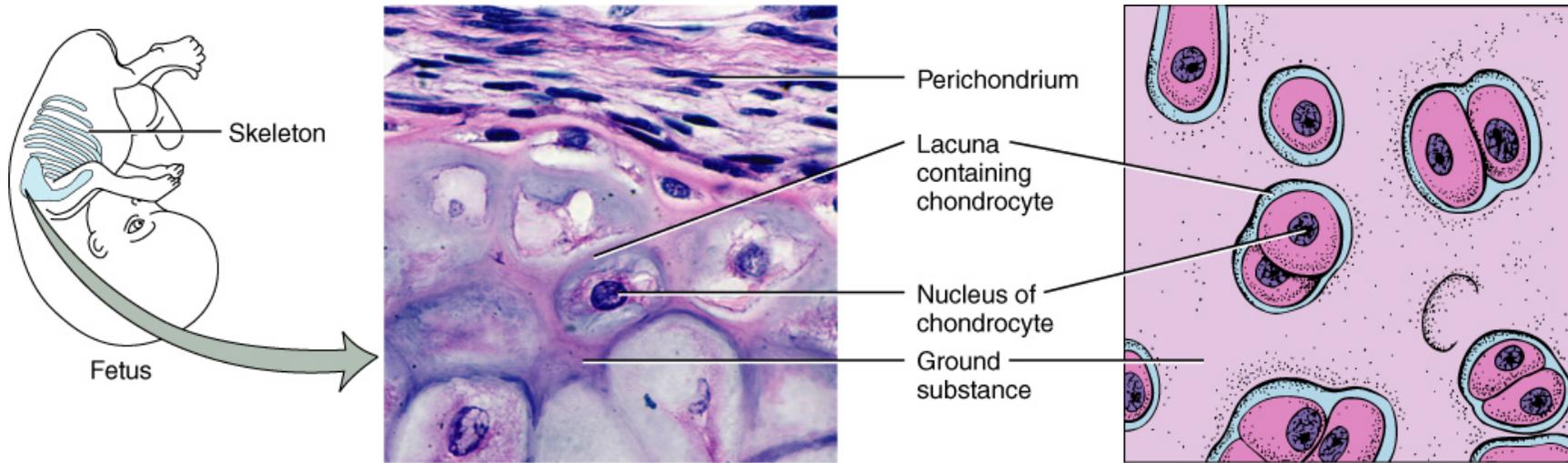
Nucleus of fibroblast

Elastic lamellae (sheets of elastic material)



Elastic connective tissue

Hyaline Cartilage



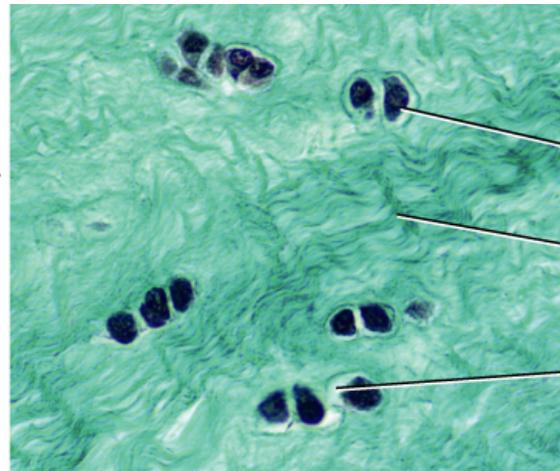
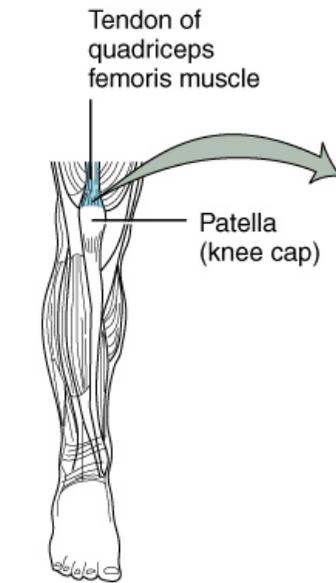
LM 450x

Sectional view of hyaline cartilage of a developing fetal bone

Hyaline cartilage

04.T03G

Fibrocartilage



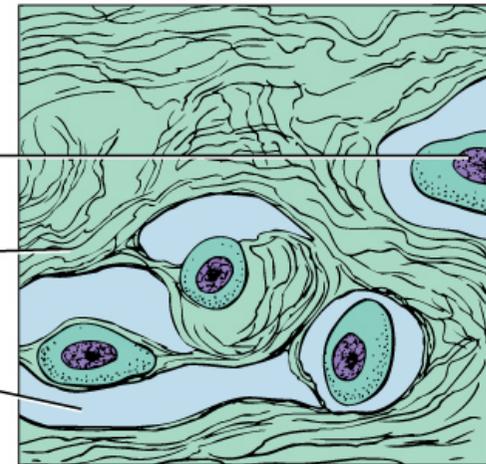
LM 300x

Sectional view of fibrocartilage of tendon

Nucleus of chondrocyte

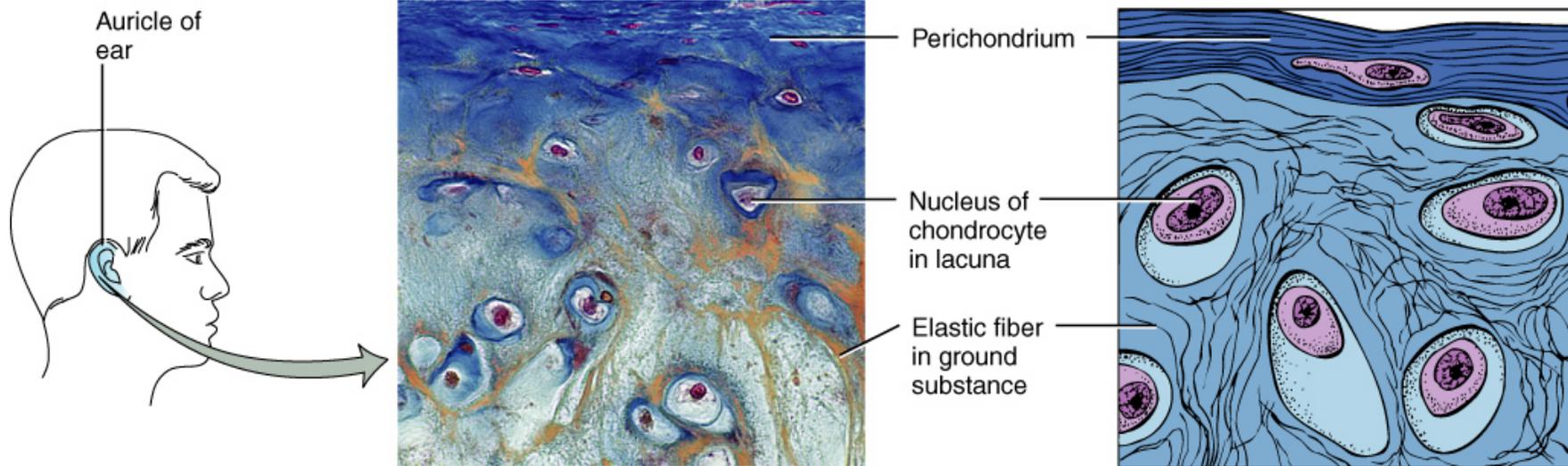
Collagen fibers in ground substance

Lacuna containing chondrocyte



Fibrocartilage

Elastic Cartilage

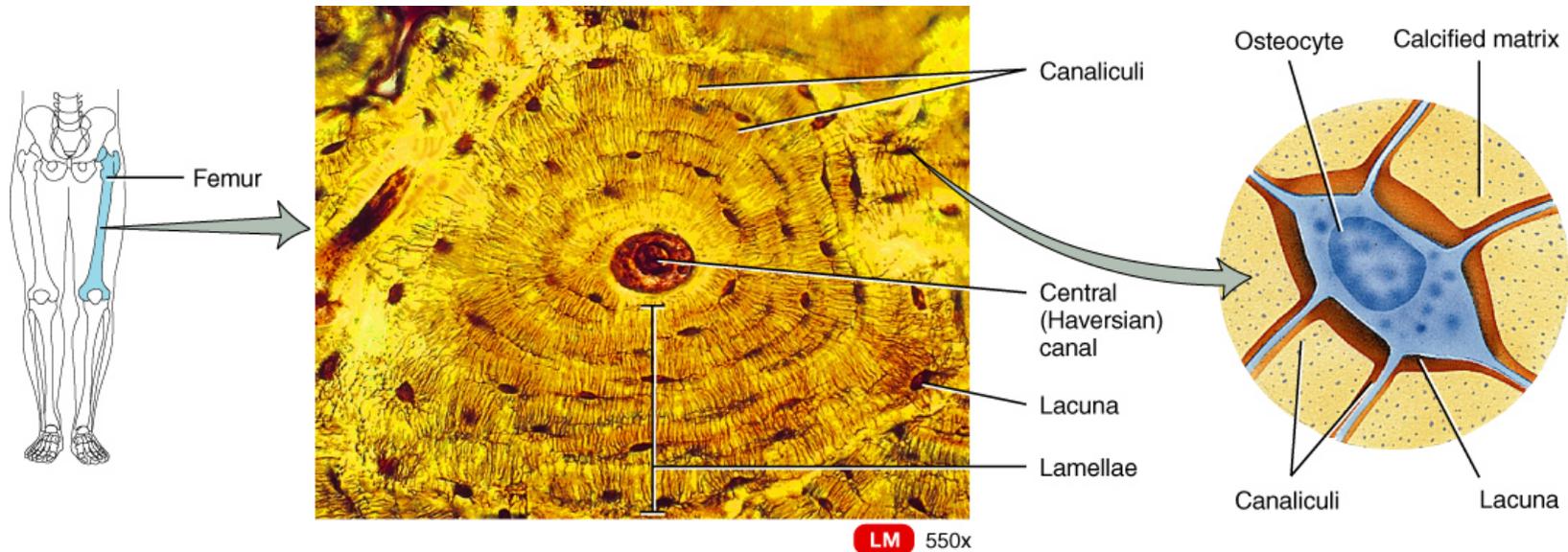


Sectional view of elastic cartilage of auricle of ear

Elastic cartilage

04.T03I

Bone

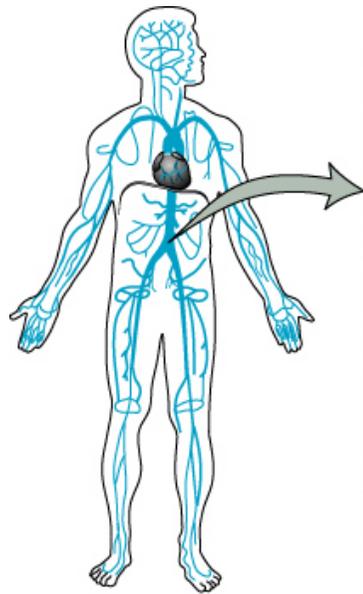


Sectional view of an osteon (Haversian system) of femur (thigh bone)

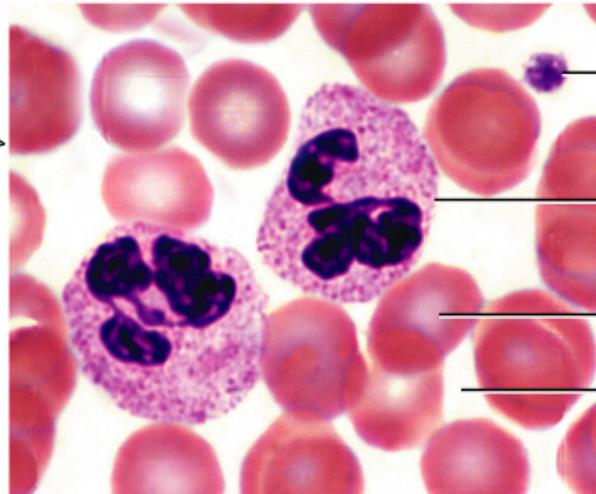
Details of an osteocyte

Blood

Erythrocytes, Leukocytes & Thrombocytes)



Blood in blood vessels



LM 1230x

Blood smear

Platelet

White blood cell (leukocyte)

Red blood cell (erythrocyte)

Blood plasma



Red blood cells



White blood cells



Platelets

04.T03K

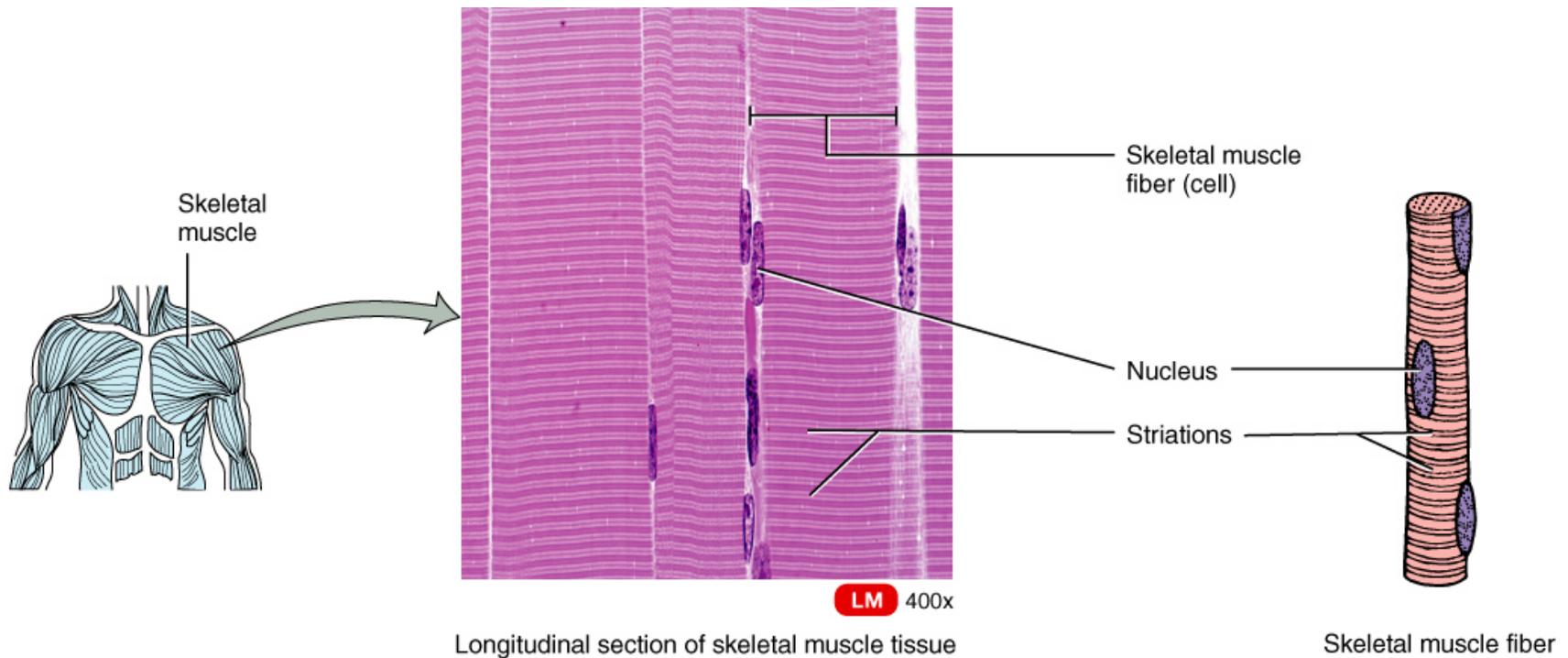
Membranes

- Mucous
- Serous
- Synovial

Muscles Tissue Types

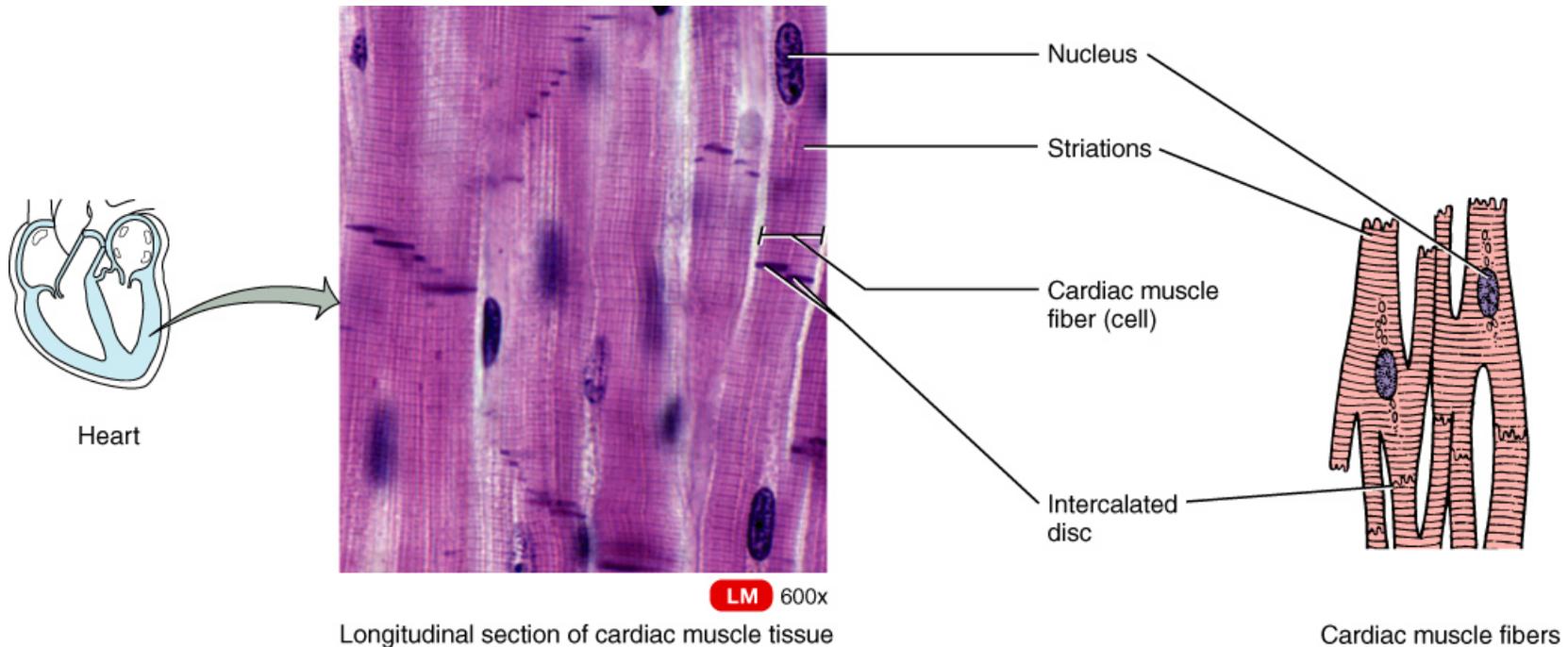
- Skeletal (striated)
- Cardiac
- Smooth

Striated Muscle



04.T04A

Cardiac Muscle

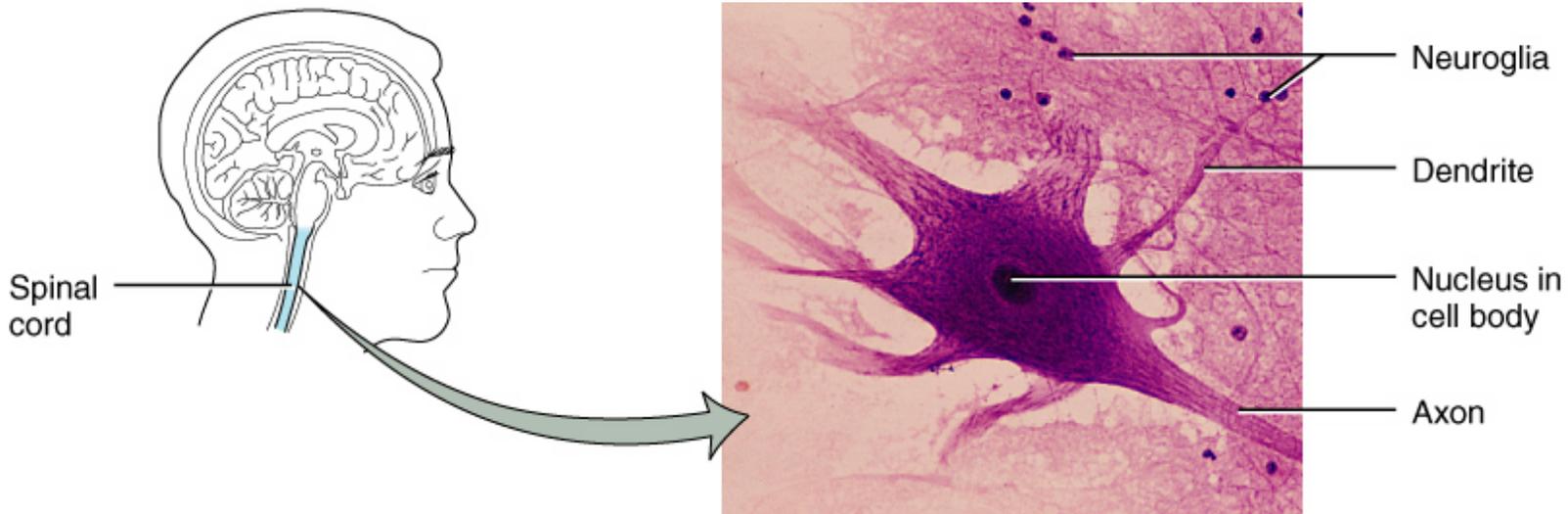


LM 600x

Longitudinal section of cardiac muscle tissue

04.T04B

Nervous Tissue

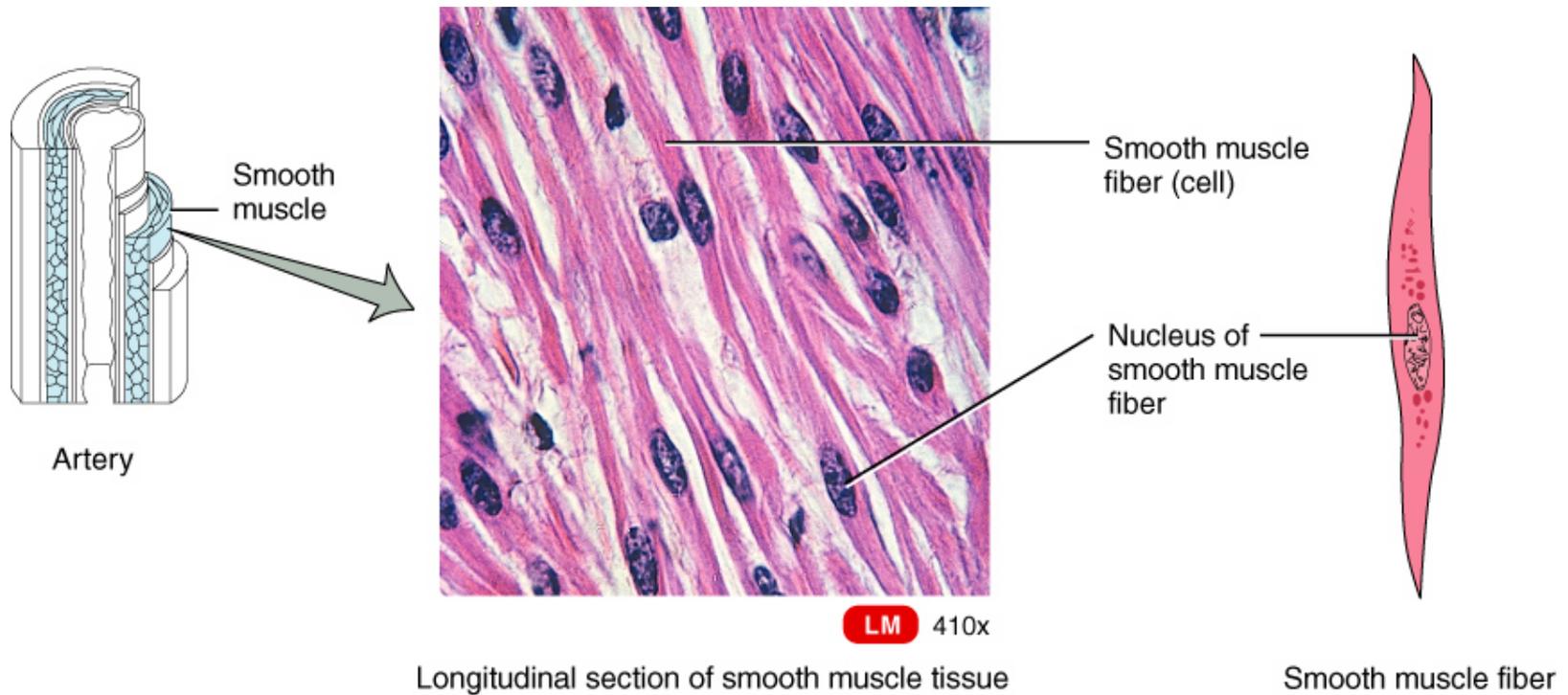


LM 225x

Neuron of spinal cord

04.T05

Smooth Muscle



LM 410x

Longitudinal section of smooth muscle tissue

Smooth muscle fiber

04.T04C

Terms to Know

- Autoimmune disease
- Lupus
- Sjogren's syndrome
- Atrophy
- Hypertrophy
- Tissue rejection
- Xenotransplantation
- Adhesions