Motivational Corner:

Winners are not people who never fail, but people who never quit.

Practical exam revision

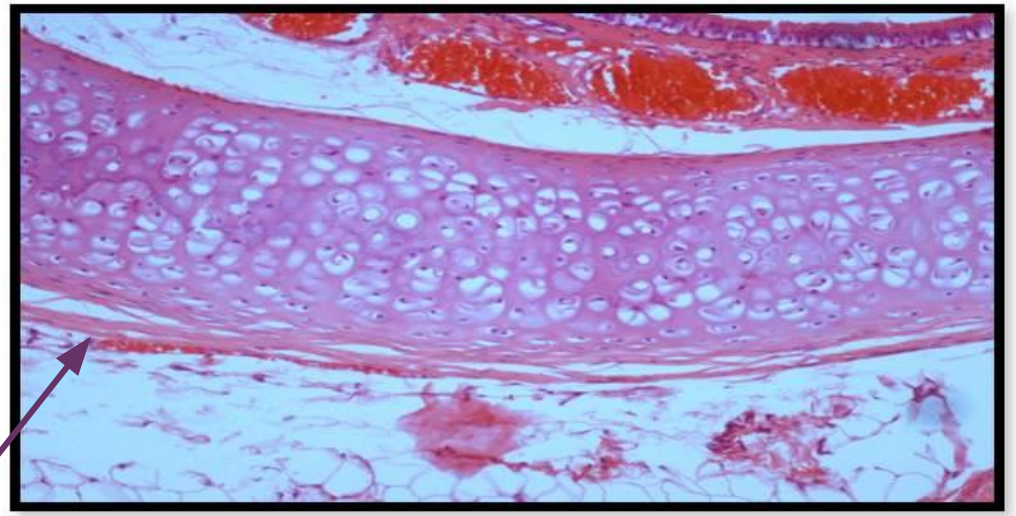
hyaline cartilage

Features:

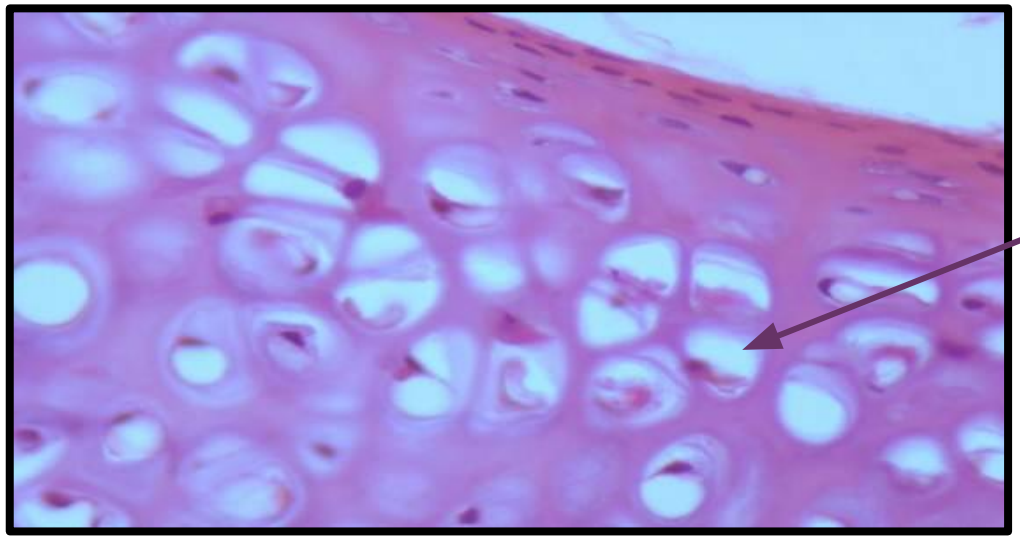
- -perichondrium
- -cells: chondrocytes (found in lacunae.)
- -matrix
  - Homogeneous and basophilic.
  - Contains collagen type II

Sites:

- -Foetal (fetal) skeleton.
- -Costal cartilages.
- -Articular surfaces of bones.
- -Nose, trachea & bronchi.



Perichondrium
(outer fiber layer)



Chondrocyte

Elastic cartilage

Features :

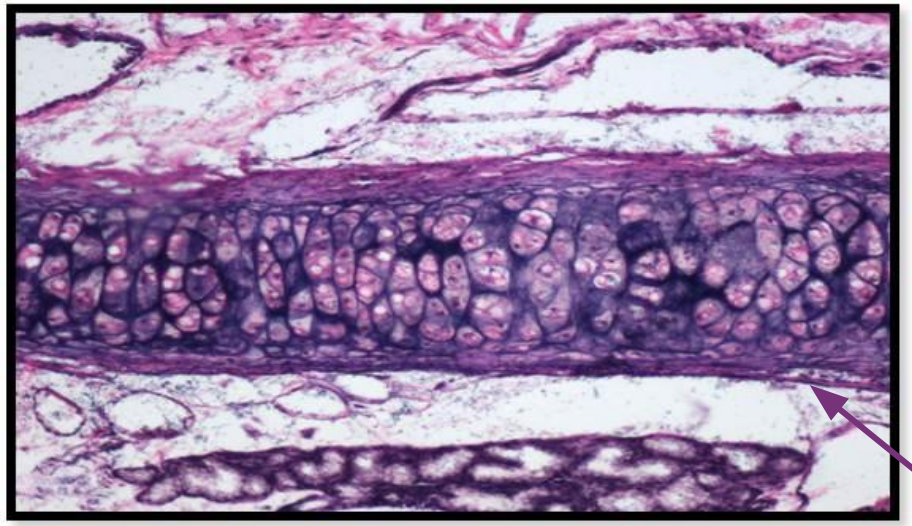
-perichondrium.
-cells: chondrocytes (found in lacunae).
-Elastic fiber in the matrix.

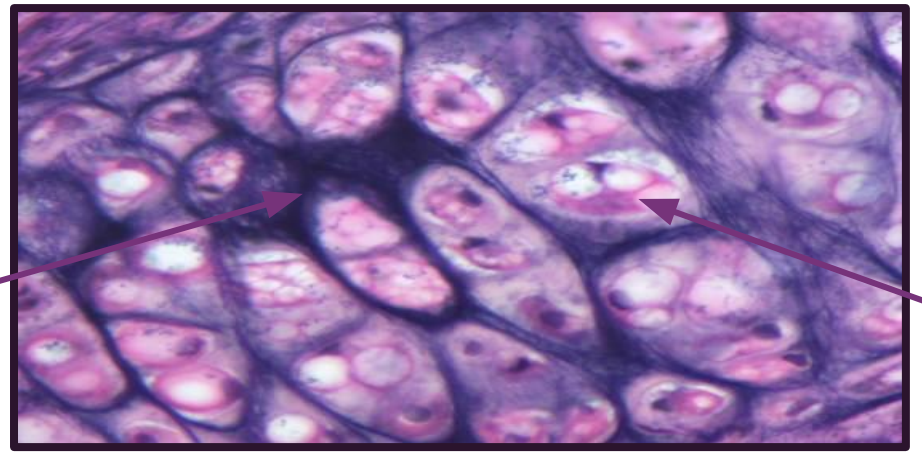
Sites :

-External ear.
-Epiglottis.

Remember:

Elastic fiber is similar to hyaline cartilage but with elastic fibers in the matrix





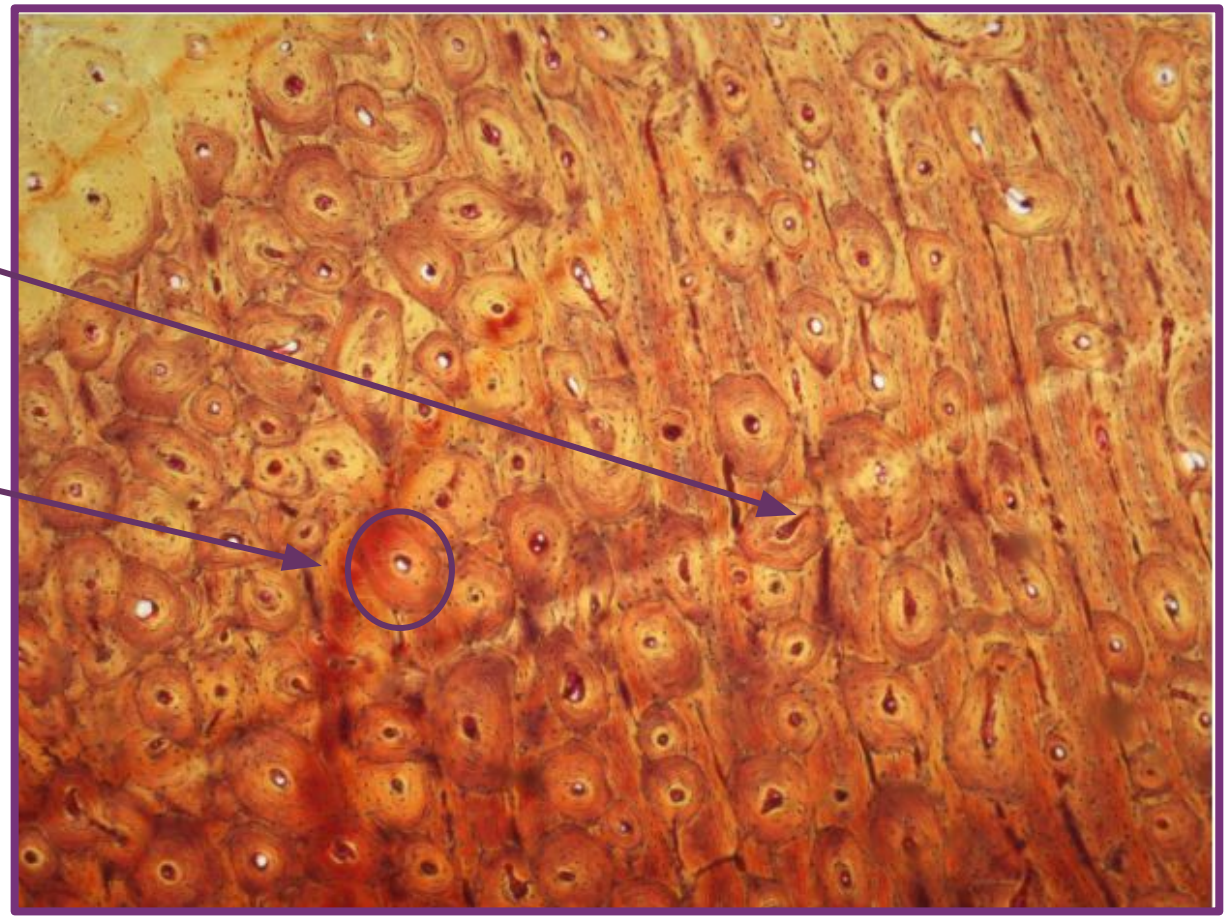
Compact Bone

Features:

- Haversian systems.
- volkmann's canals

Site:

- Diaphysis of long bones.



Osteons (Haversian system)

Features:

Concentric bone lamellae.
Haversian canal.
Osteocyte inside lacunae.

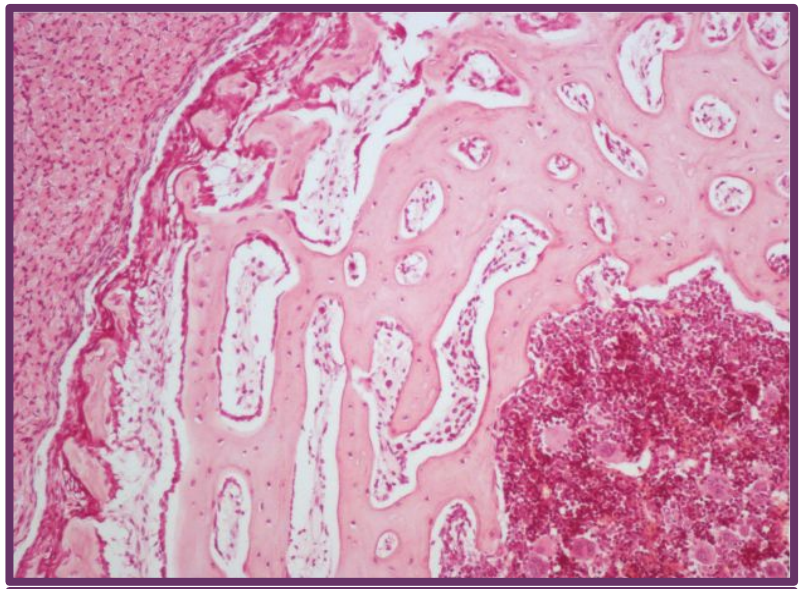
Site:

- Inside compact bone in the diaphysis of long bones.

Spongy (Cancellous) bone

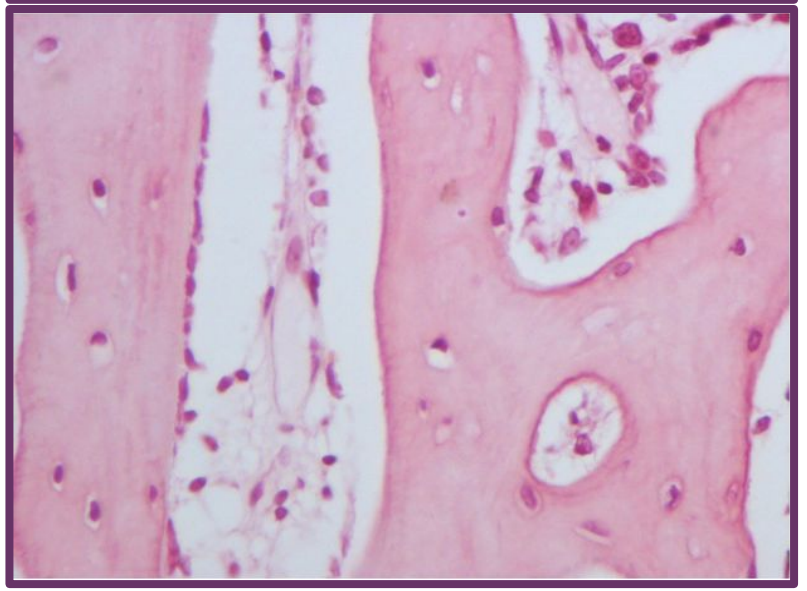
Features:

- Irregular bone trabeculae.
- Irregular bone marrow spaces.
- NO Haversian system.



Site:

- Flat bones.
- Epiphysis of long bone.

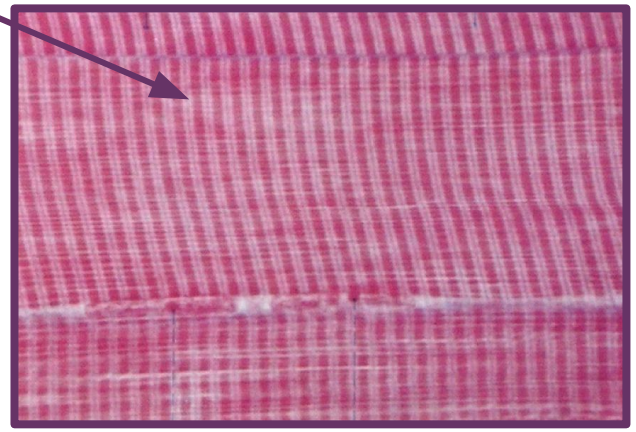


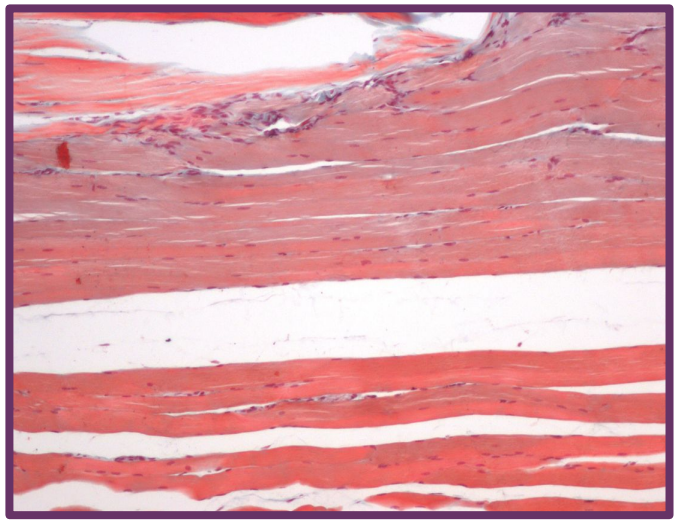
Skeletal muscles L.S.

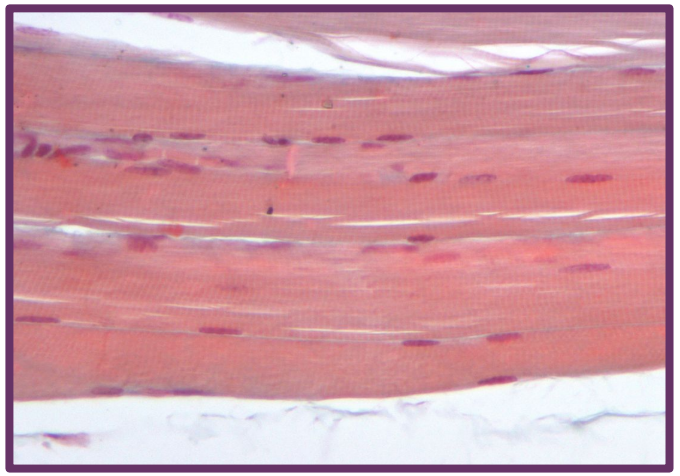
Features:

- Cylindrical in shape.
- Non-branched.
- clear sarcolemma. (cell membrane)
- Multinucleated, flat nuclei on periphery. (located close to sarcolemma)
- Acidophilic sarcoplasm shows clear transverse striations.

transverse striations







Extra:
transverse alternating light and dark bands of skeletal muscles that result from differences in light absorption. The light bands contain actin and are called “I” bands because they are isotropic to polarized light. The dark areas contain myosin filaments and are called “A” bands because they are anisotropic to polarized light.

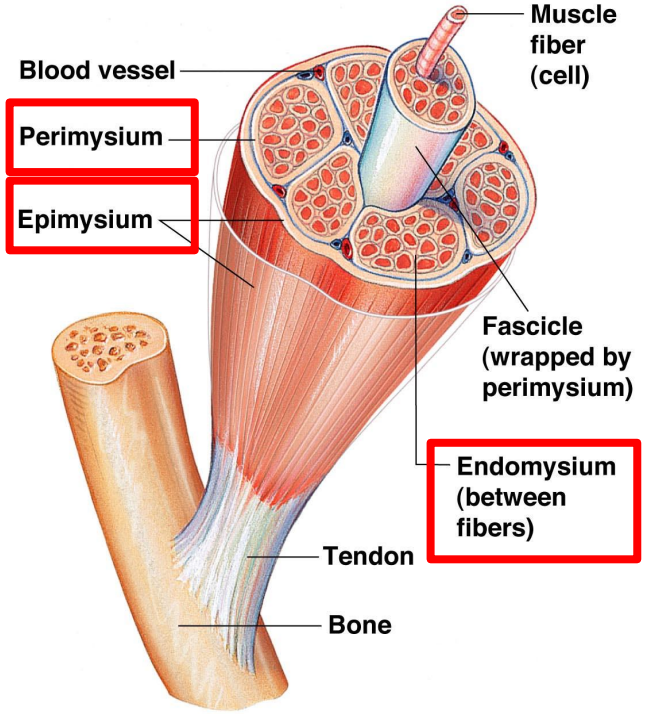
Site:

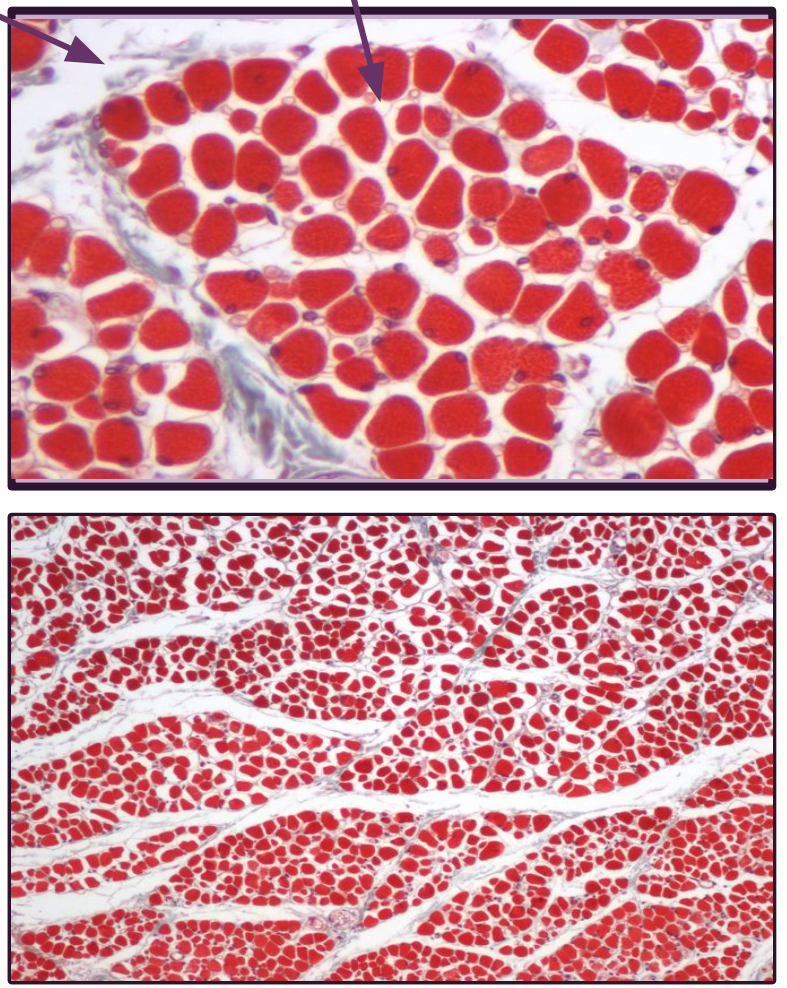
- Skeletal system (all voluntary muscles).

Skeletal muscles T.S.

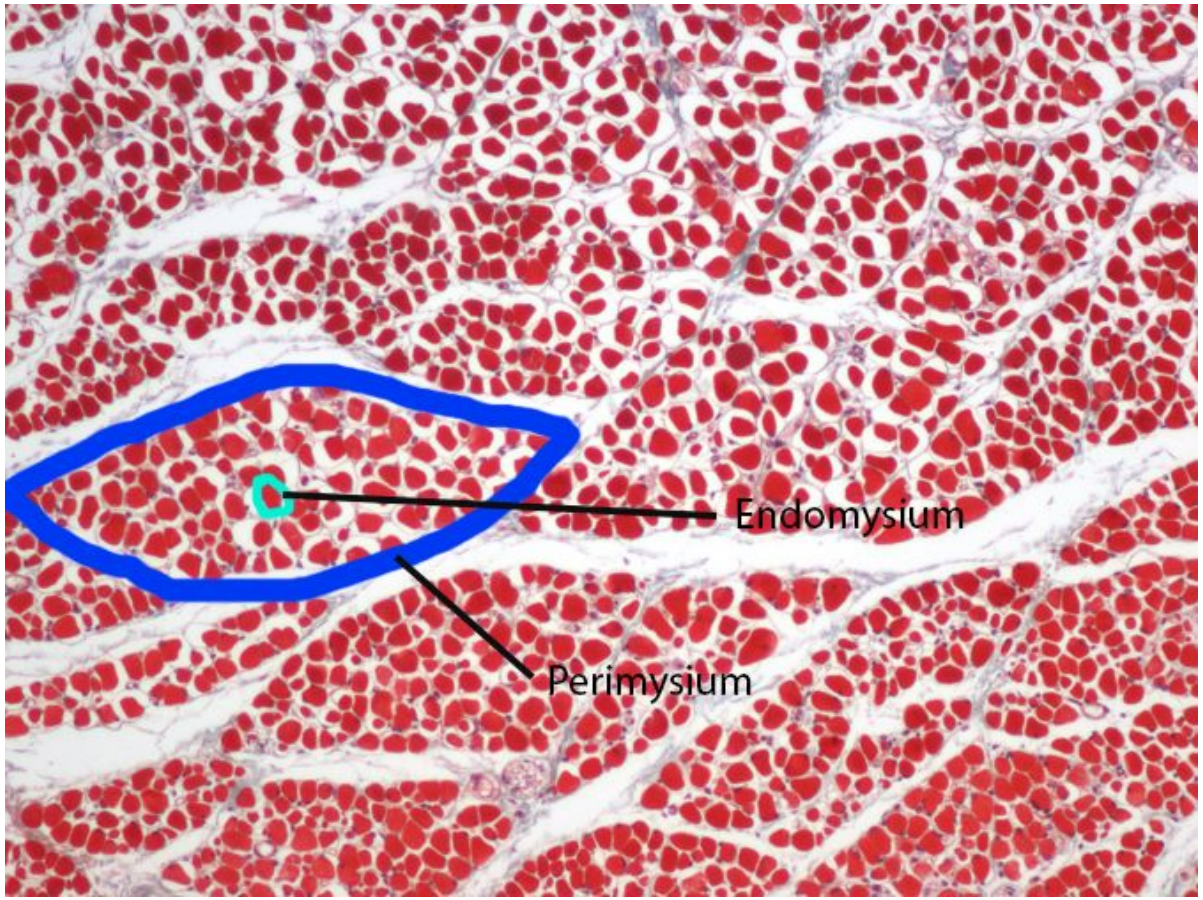
Features:

- Endomysium: Separates individual fibers.
- Perimysium: Separated bundles.
- Epimysium: CT covering the whole muscle.





Skeletal muscles T.S. (Extra notes)

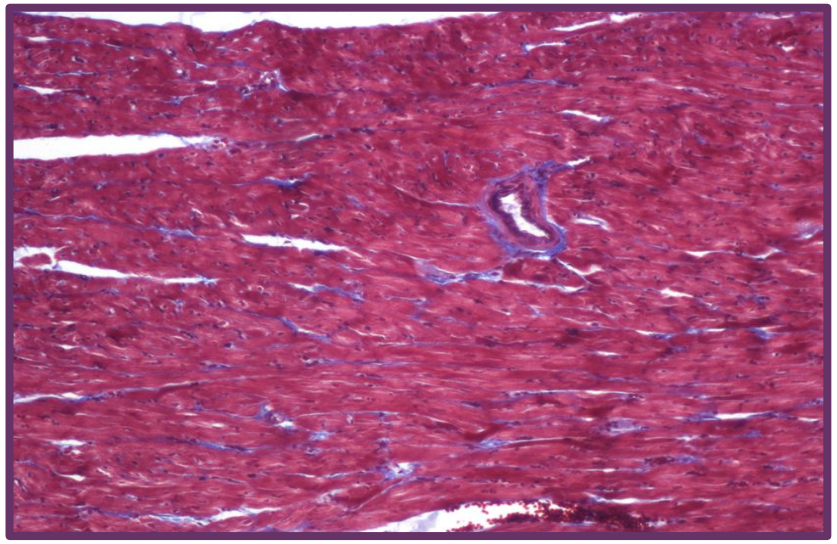


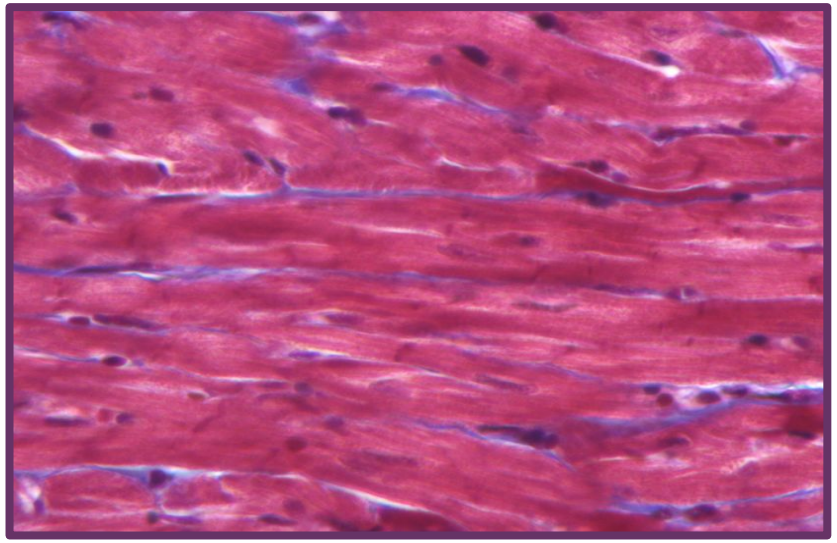
*الرسم للتوضيح فقط

Cardiac Muscle

Features:

- Mononucleated; oval and central nuclei.
- Intercalated discs.
- Striated (non-clear striations).
- Branch and anastomose*
- Cylindrical in shape.
- Intermediate in diameter. (*between skeletal and smooth muscle fibers*)
- Gap junction*





Extra:

*meaning of “anastomose” :
To join one structure into another directly or by connecting channels; to join by anastomosis.

Smooth Muscle (LS & TS)

Features:

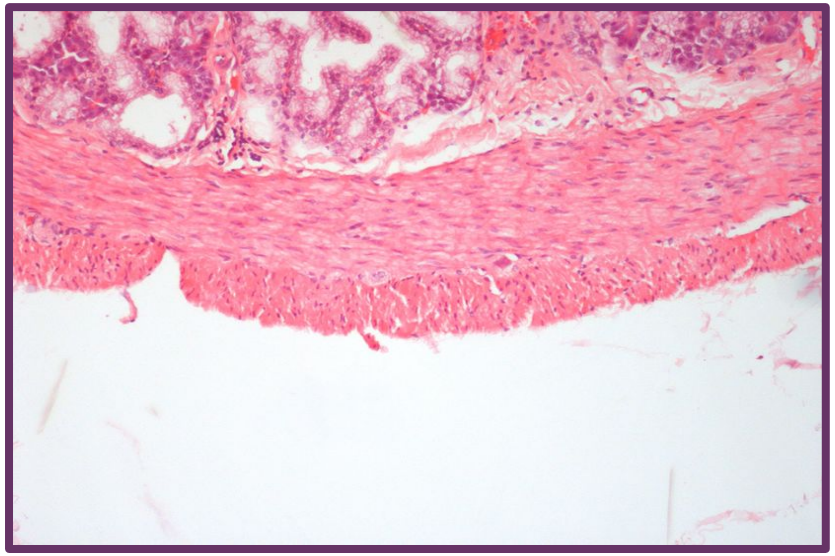
- Mononucleated; oval and central nuclei.
- Non striated.
- Non branched.
- Fusiform (spindle shaped).
- Small in diameter.
- Gap junction*

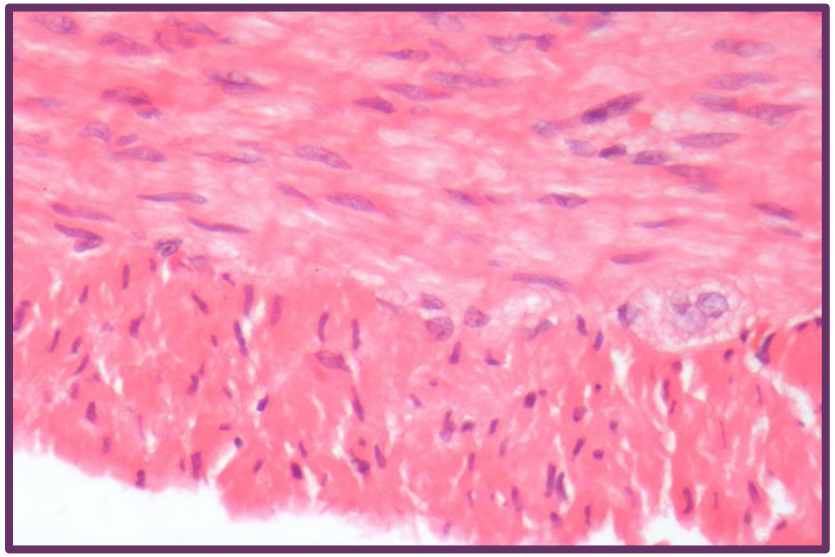
Site:

- Walls of blood vessels
- Viscera

Notice:

Gap junction is a feature that appears in cardiac and smooth muscles.





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Thanks for checking our work, Good luck.

-Team histology.

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