

Histology Practical

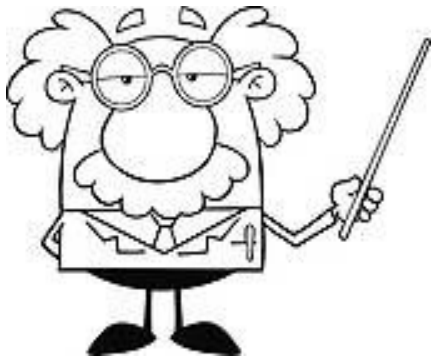
Musculoskeletal Block



وَمَنْ يَتَوَكَّلْ عَلَى اللَّهِ فَهُوَ حَسْبُهُ

Things you need to know before the exam :

- The pictures in the exam will be the same as the ones included in the slides.
- Don't try to take short cuts during the exam so avoid using abbreviations so you don't lose marks.
- Please keep in mind that this work is done by students , so if there are any mistakes please inform us .
- This work is not by any means a reference.
- Please study hard and don't worry the exam will be easy!!



Hyaline Cartilage

Features :

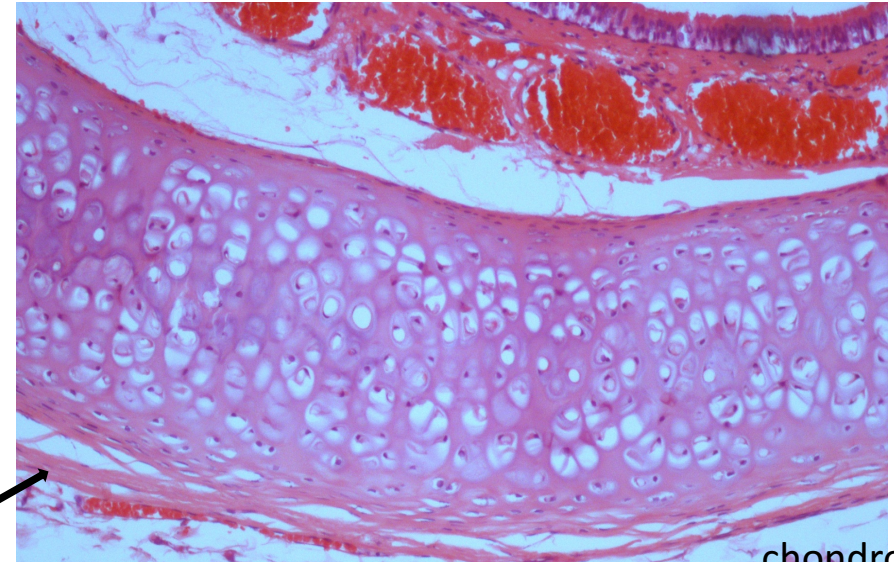
- Perichondrium.
- chondrocytes (found in lacunae) .
- chondroblasts

Matrix :

- Homogeneous and Basophilic .
- collage fibers type II.

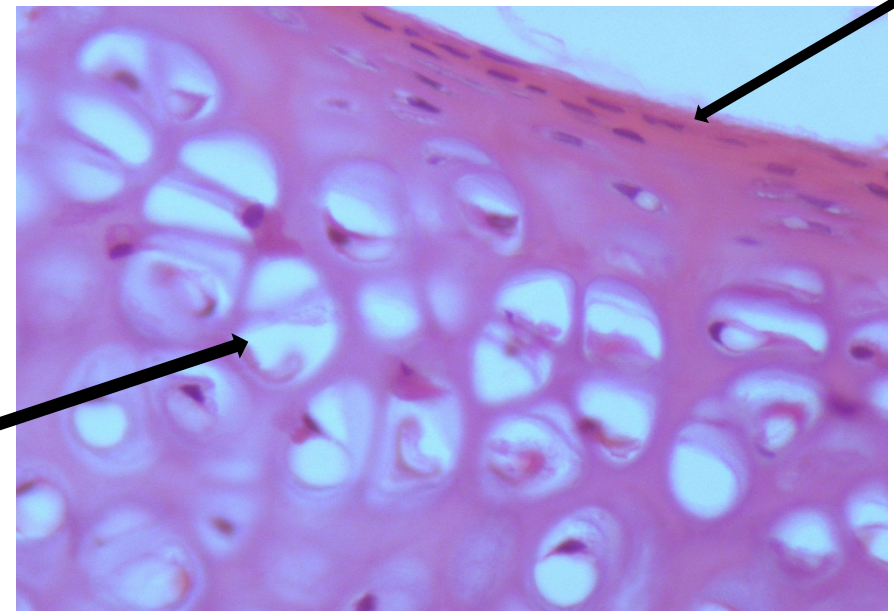
Sites :

- Articular surfaces of bones.
- Foetal (fetal) skeleton.
- Costal cartilage.
- Nose , Trachea & Bronchi.



Perichondrium
(the outer fiber layer)

chondroblasts



Chondrocytes

Elastic Cartilage

Features :

- Perichondrium
- Chondrocytes

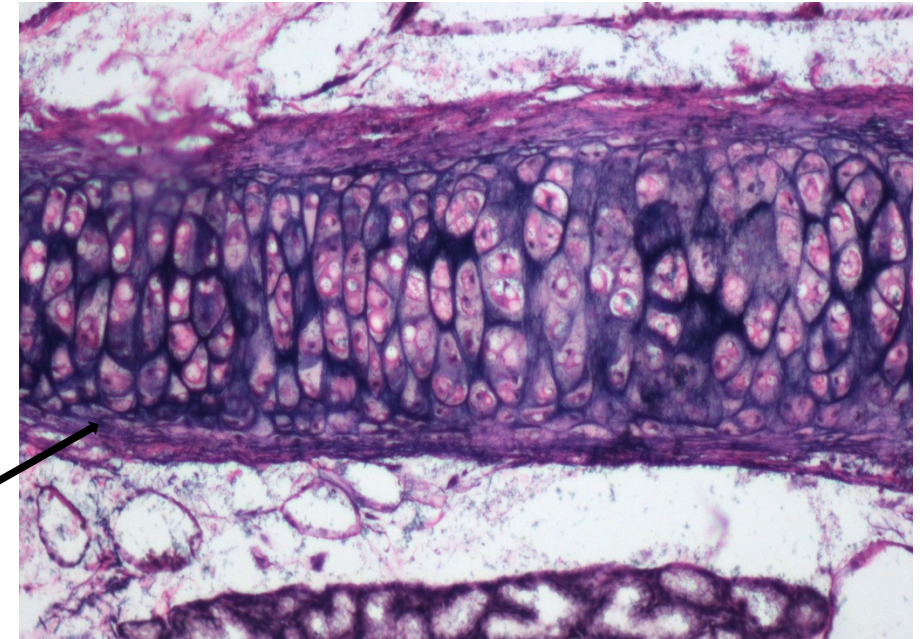
Matrix :

- Contains elastic fibers

Sites :

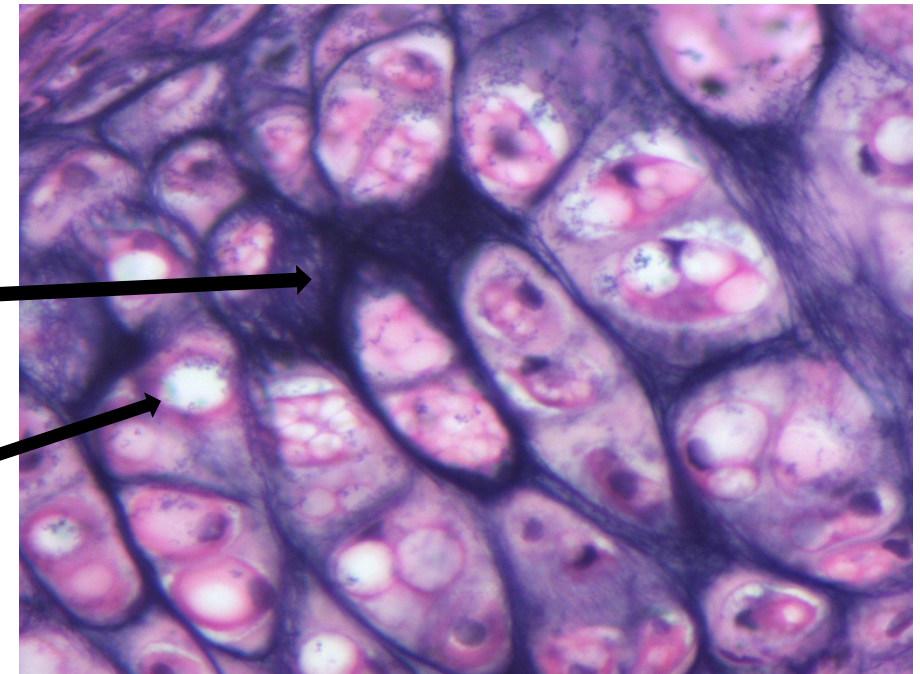
- External ear
- Epiglottis

Perichondrium
(the outer fiber layer)



Elastic fibers

Chondrocytes



Compact bone (cortical)

Features:

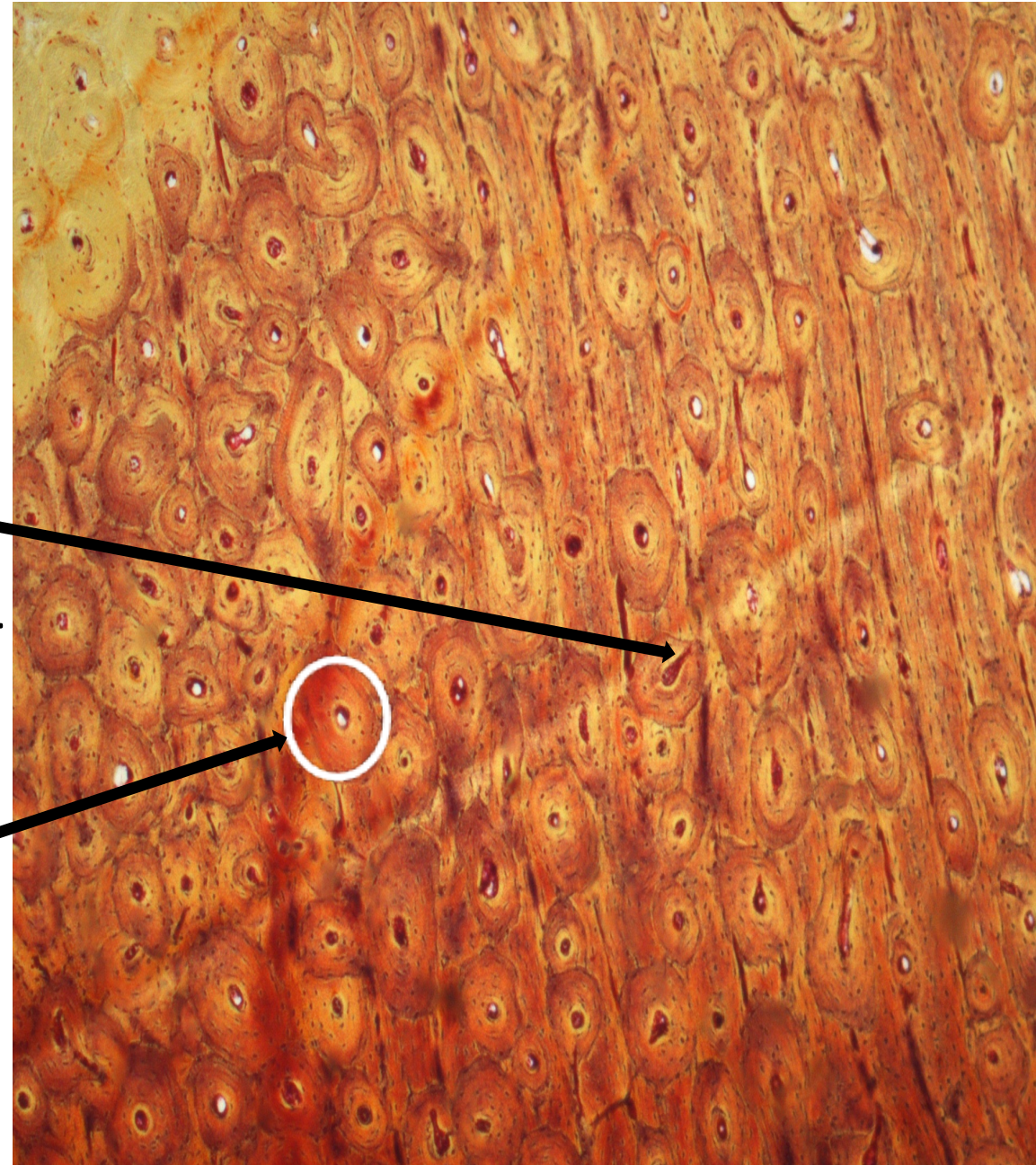
- Bone Lamellae.
- Haversian systems.
- Osteocyte inside lacunae that have canaliculi.

Site:

- Diaphysis of long bones.

Volkman's canal

Haversian system



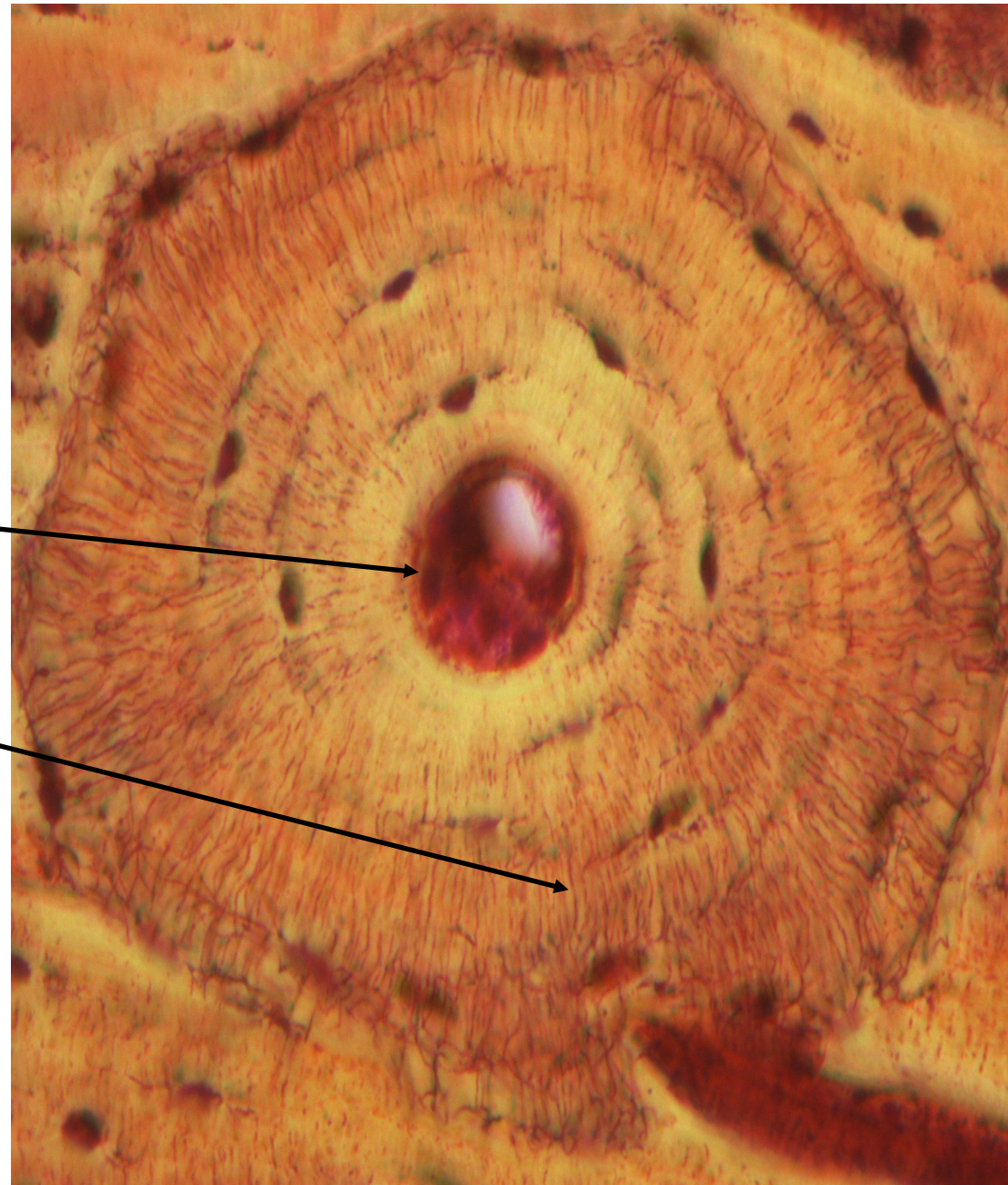
Haversian Systems (Osteons)

Features:

- Concentric bone lamellae.
- Haversian canal.
- Osteocyte inside lacunae.
- Canaliculi (fine lines)

Site:

- Inside the compact bone in diaphysis of long bone.



Spongy (Cancellous) Bone

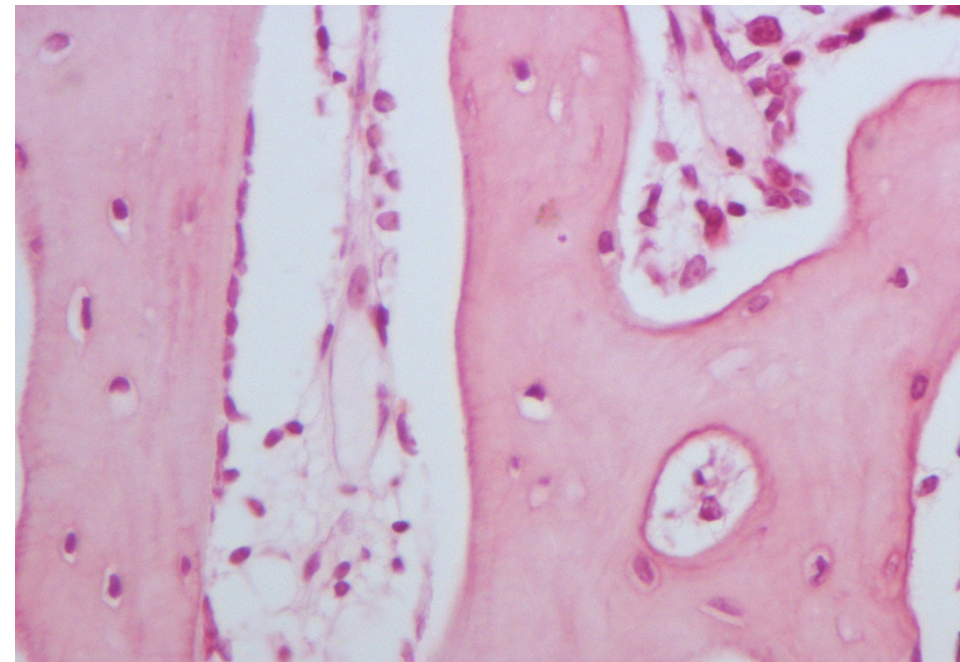
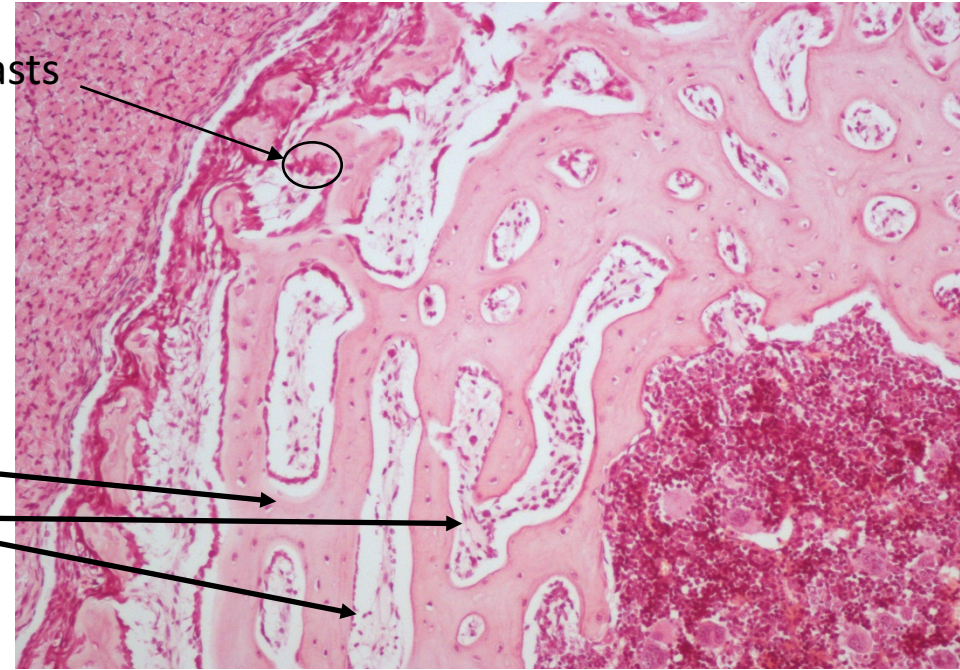
Features :

- Irregular bone trabeculae (matrix).
- Irregular bone marrow spaces contains bone marrow .
- NO Haversian systems .
- Osteoclasts (multinucleated)

Sites:

- Flat bones.
- Epiphysis of long bone.

Osteoclasts



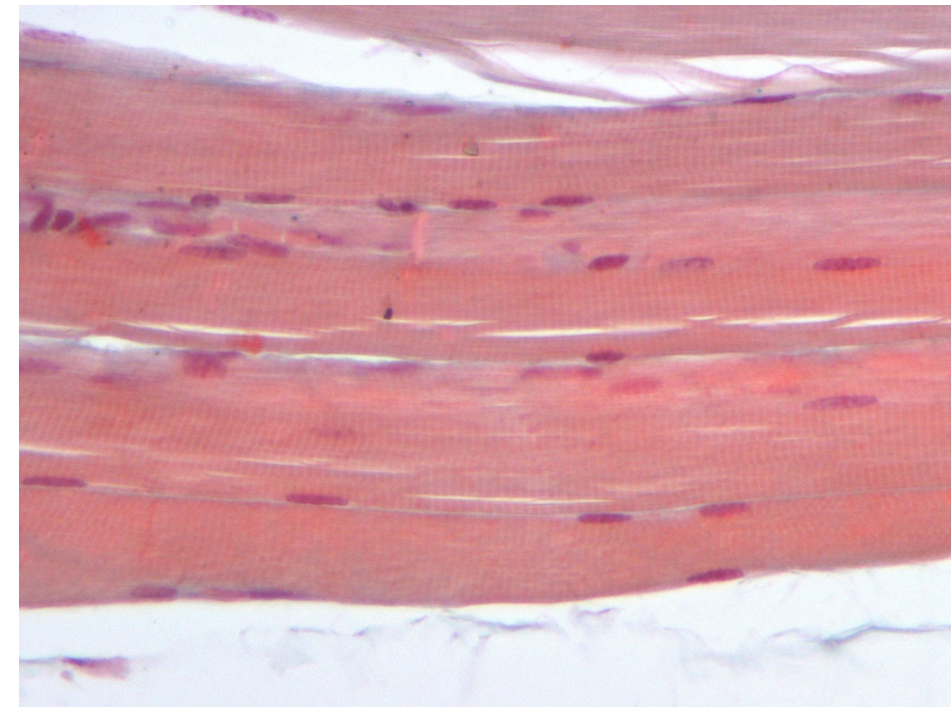
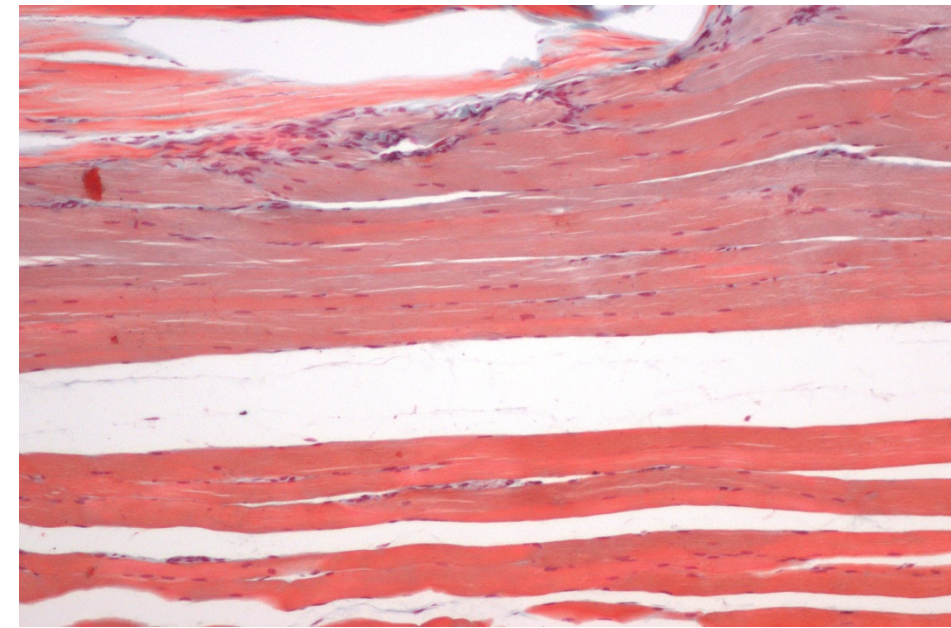
Skeletal muscle (L.S.) *Longitudinal section

Features :

- Multinucleated, nuclei on periphery.
- Cylindrical in shape.
- Non-branched .
- Cytoplasm (**sarcoplasm**) is acidophilic and shows clear transverse striations.

Sites :

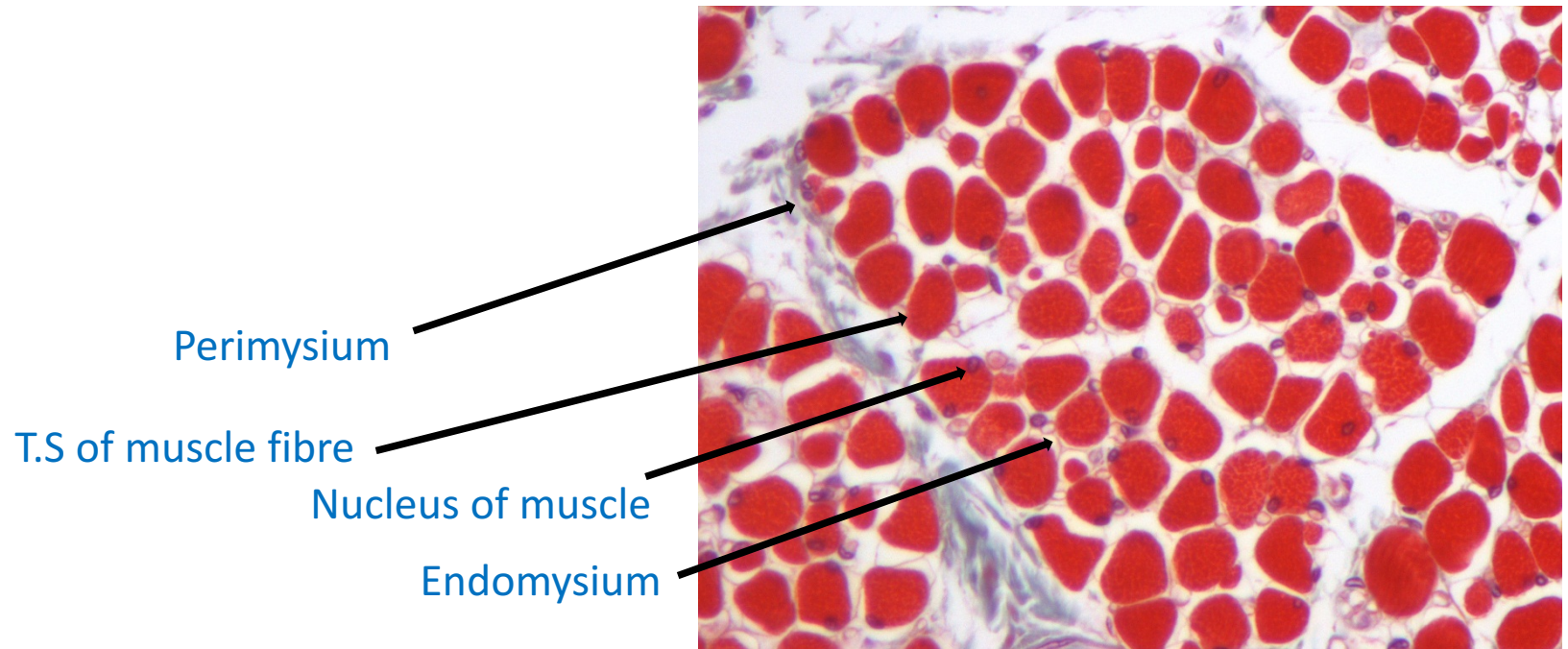
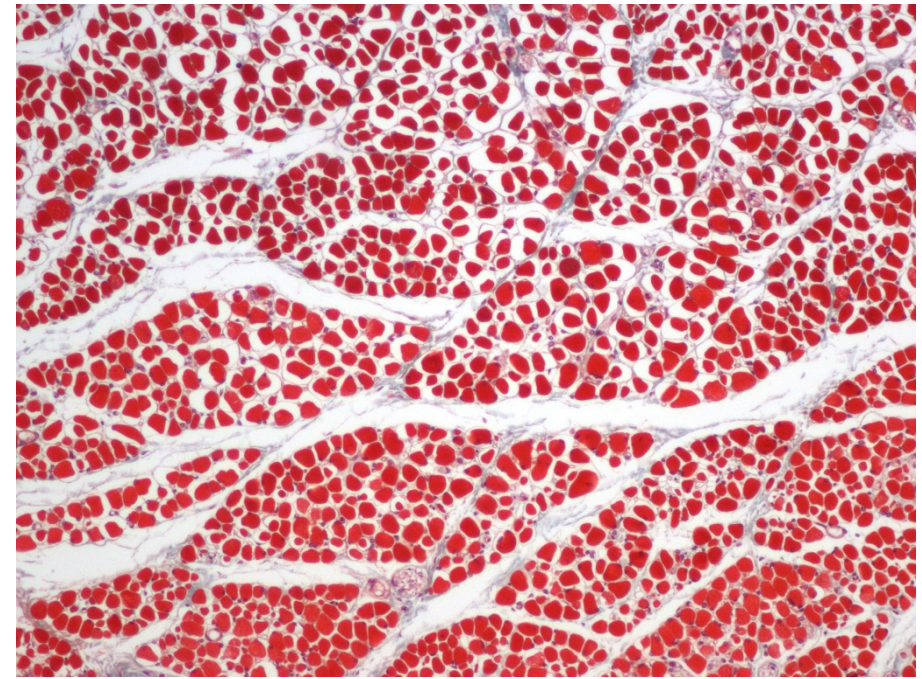
Skeletal system (all voluntary muscles).



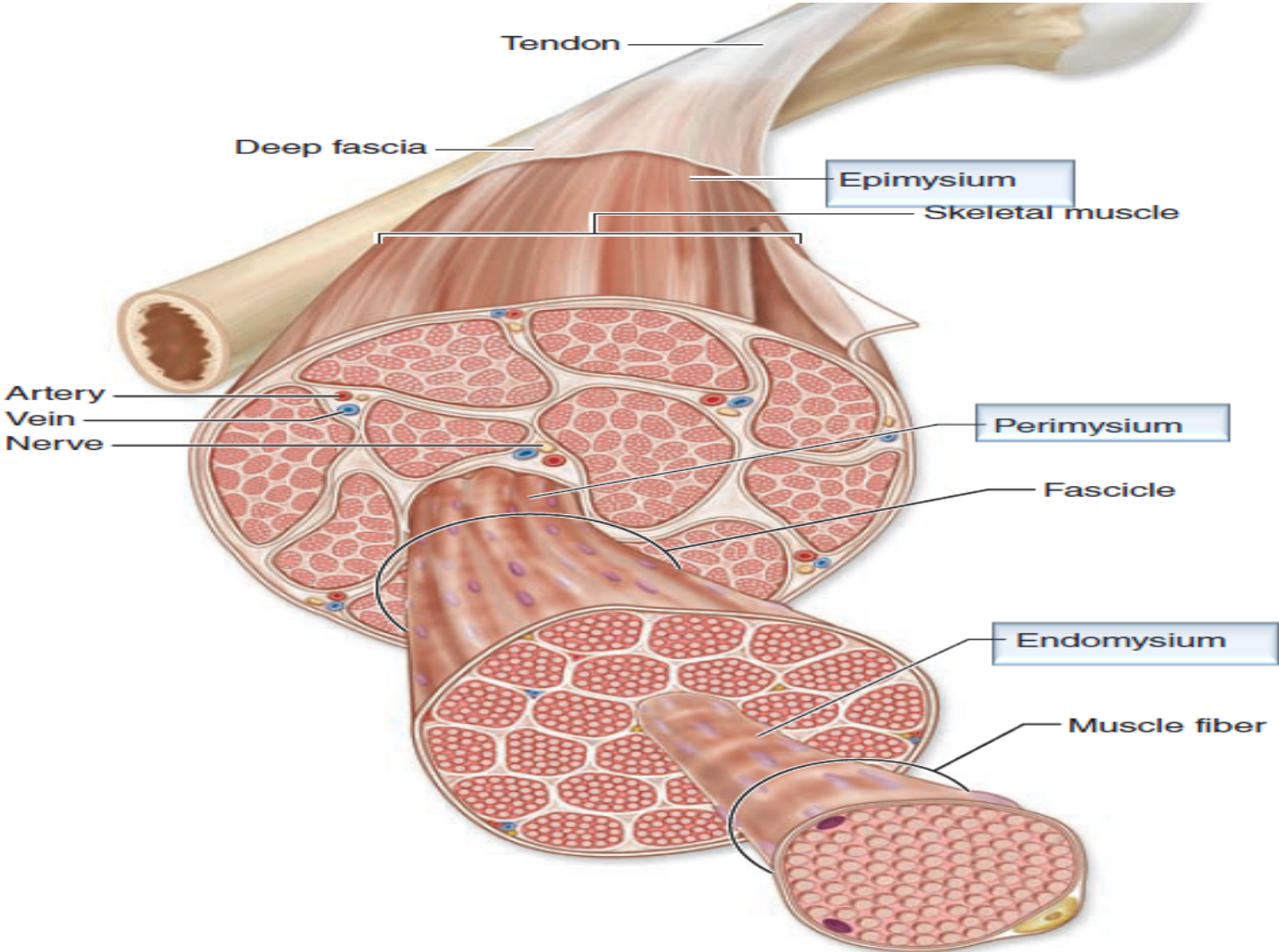
Skeletal muscle (T.S.) Transverse section

Features:

- Endomysium: Loose C.T. separates the individual fibres.
- Perimysium: Separates the parallel bundles of muscle fibres.
- Epimysium: Thick CT covering the whole muscle.



EXTRA slide for understanding the skeletal muscle connective tissues



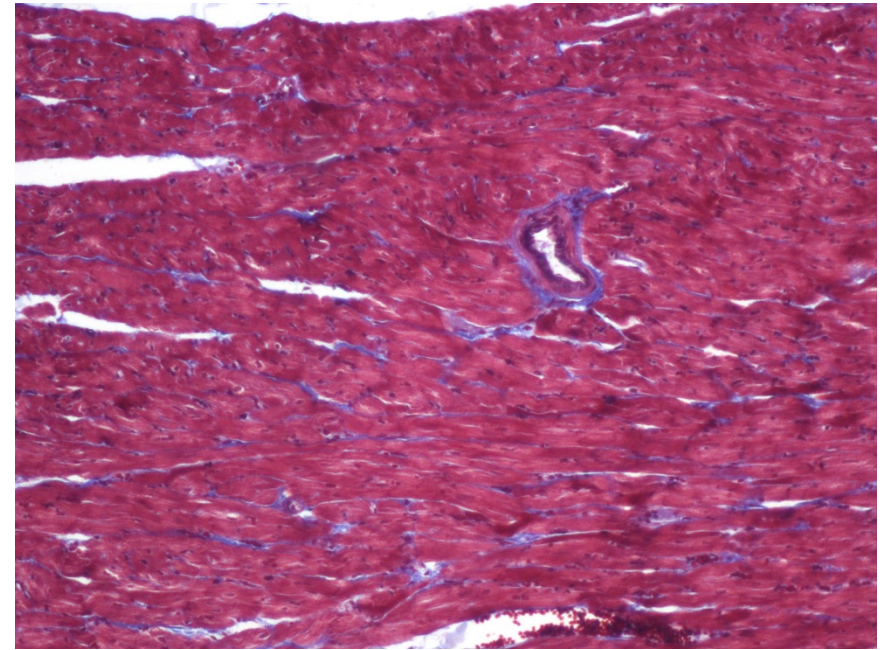
Cardiac muscle

Features:

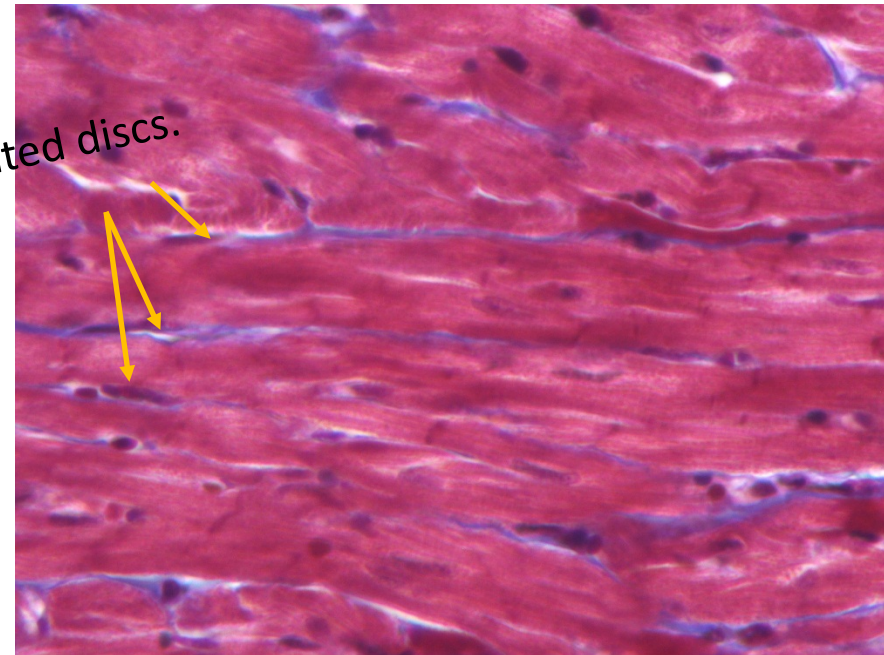
- Mononucleated.
- Oval and central nuclei.
- Branched and anastomose.
- Striated (not clear)
- Cylindrical in shape.
- Intermediate in diameter (in comparison to other muscles)
- Gap junctions are present .
- Intercalated discs.

Site:

- Myocardium.



Intercalated discs.



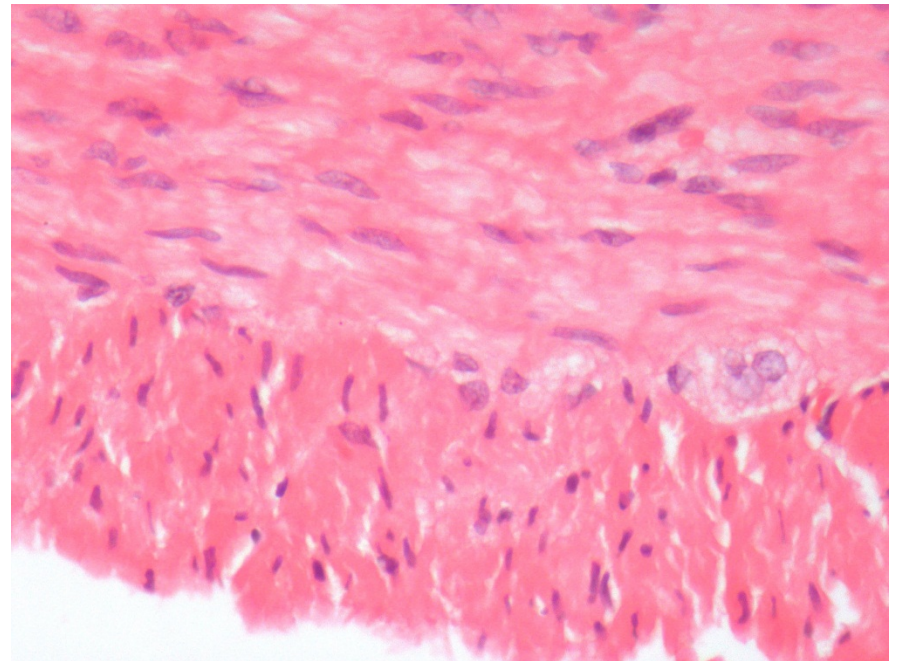
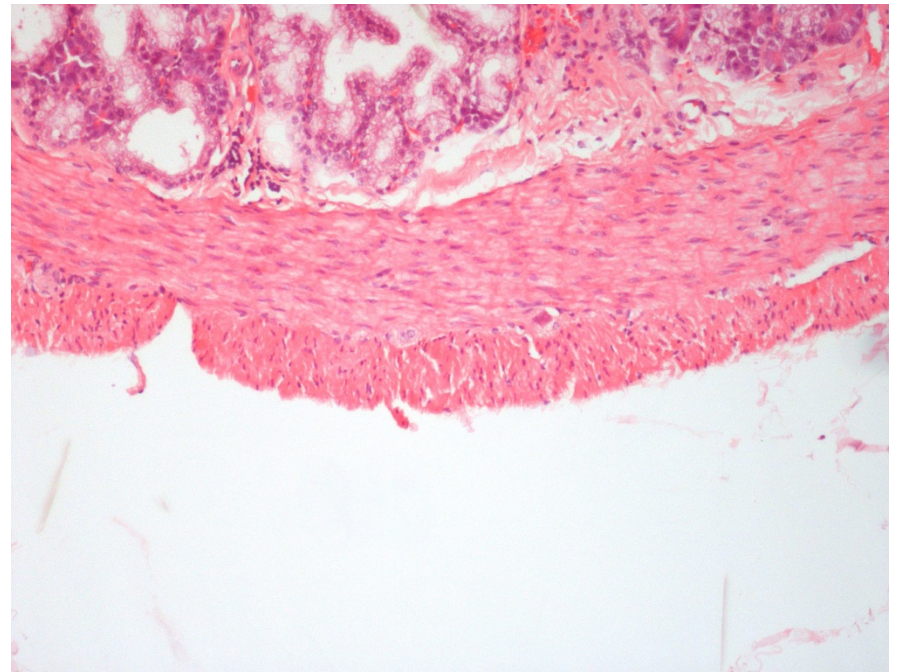
Smooth muscle (T.S & L.S)

Features:

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

Site :

- Walls of blood vessels.
- Viscera.



Best of luck

-histology team

THANK YOU !

Done by:

Team Leaders

Team Leaders :

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