



# Female OSPE file

## Musculoskeletal block

Pictures from the slides

Pictures from the microscopes

★ Important

- Make sure to read the questions, and if the question is about the features do NOT write the site or examples.
- It is important to write L.S. & T.S.

# ★ Hyaline Cartilage

## Q1- Identify the structure?

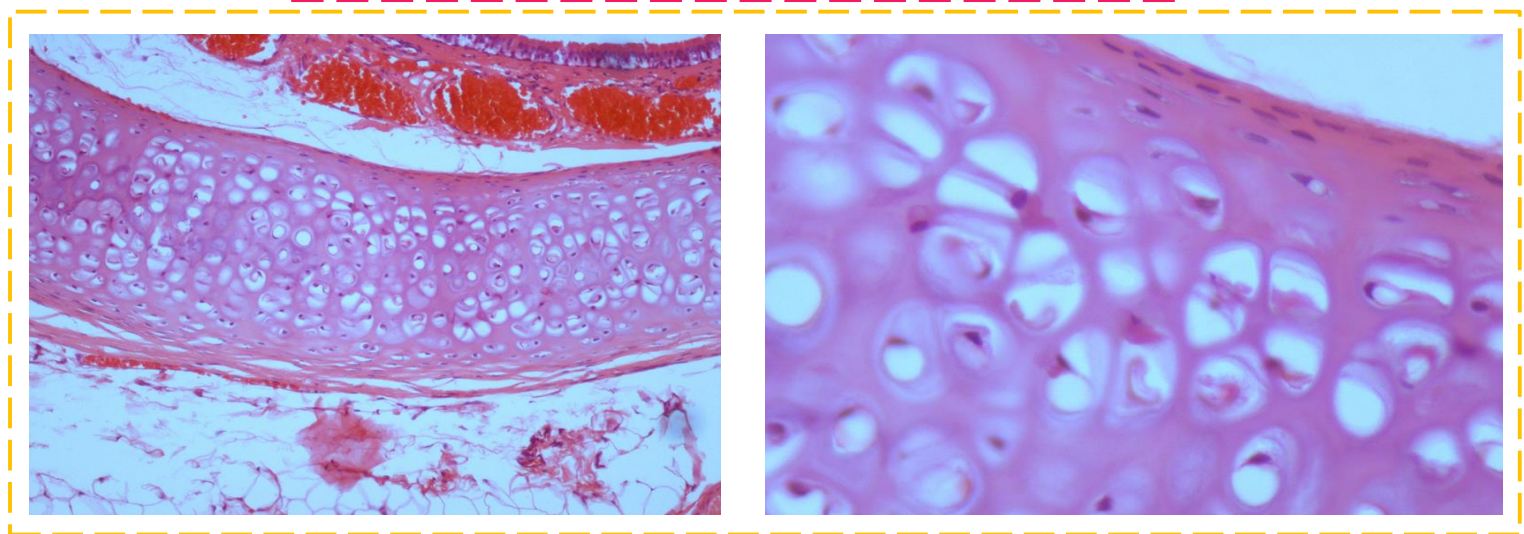
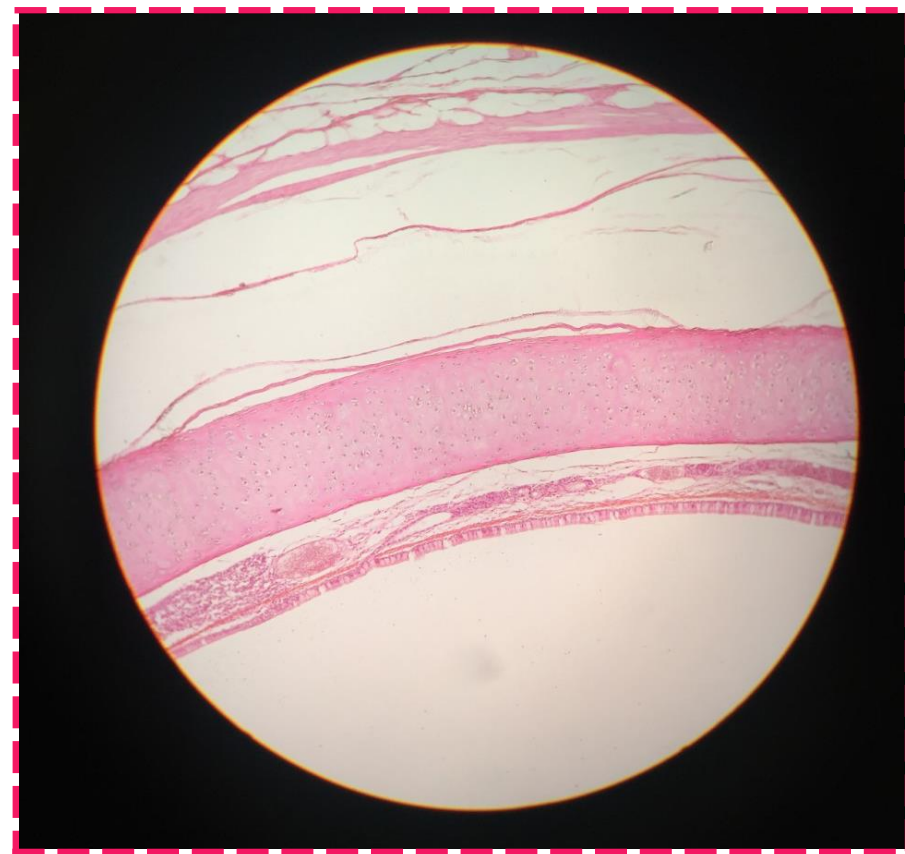
Hyaline Cartilage

### Features :

- Perichondrium.
- chondroblasts
- chondrocytes (found in lacunae).
- Matrix :
  - Homogeneous and Basophilic .
  - collagen fibers type II.

## Q2- mention the organs (distribution, site & example)?

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



# ★ Elastic Cartilage

## Q1- Identify the structure?

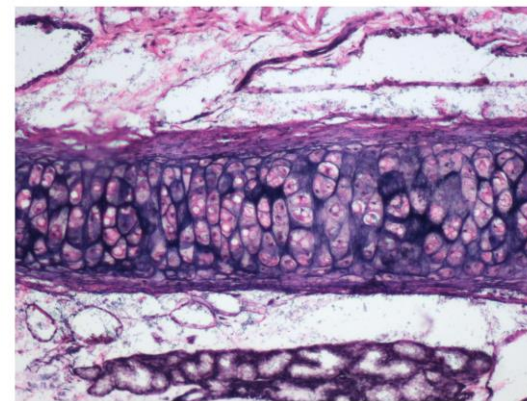
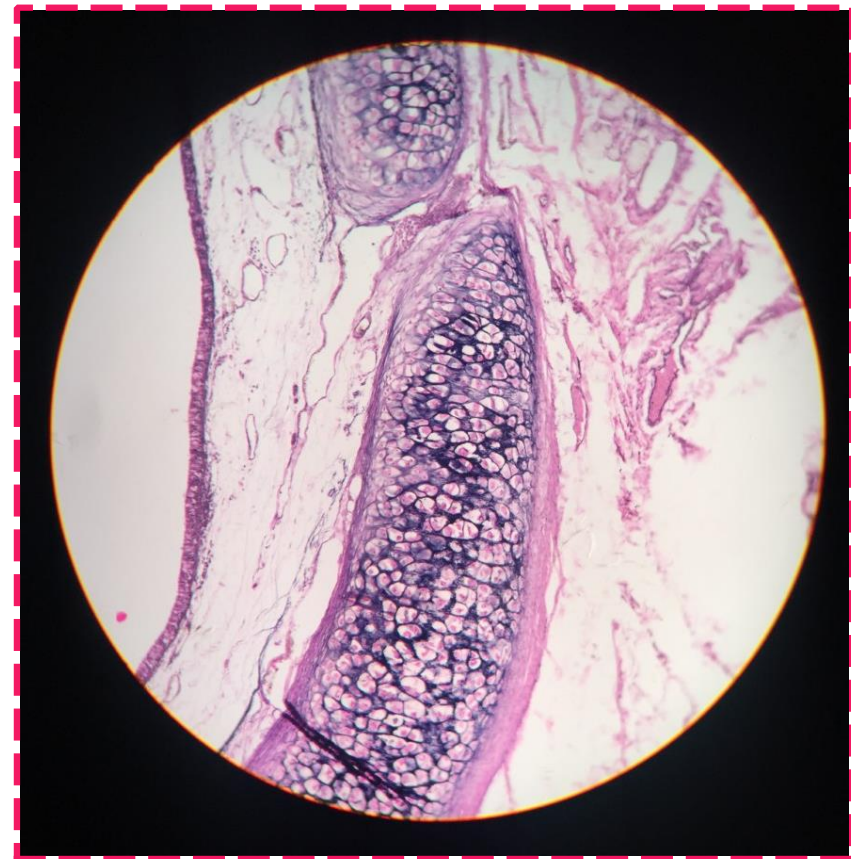
Elastic Cartilage

### Features :

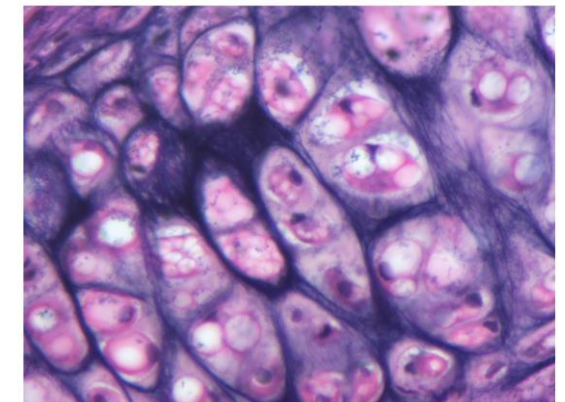
- Perichondrium
- Chondrocytes
- Matrix :
  - Contains elastic fibers

## Q2- mention the organs (distribution, site & example)?

- External ear
- Epiglottis



Elastic Cartilage



Elastic Cartilage



# ★ Compact (Cortical) Bone T.S.

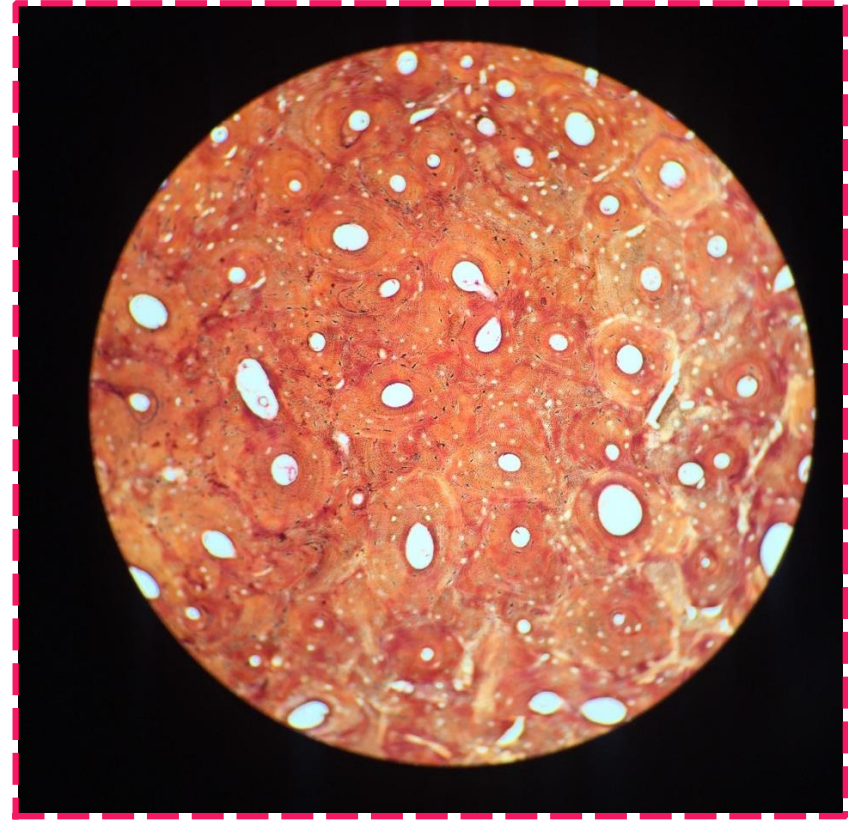
Remember to write T.S

## Q1- Identify the structure?

Compact bone (cortical)

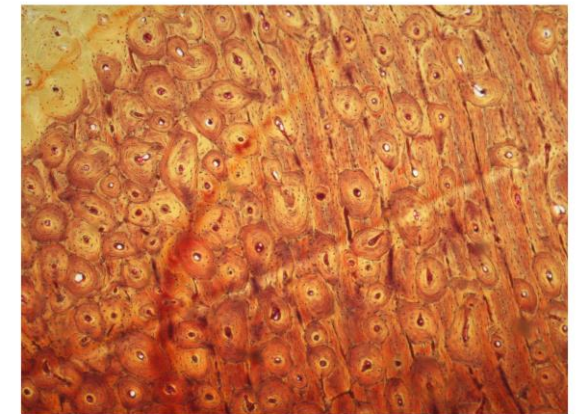
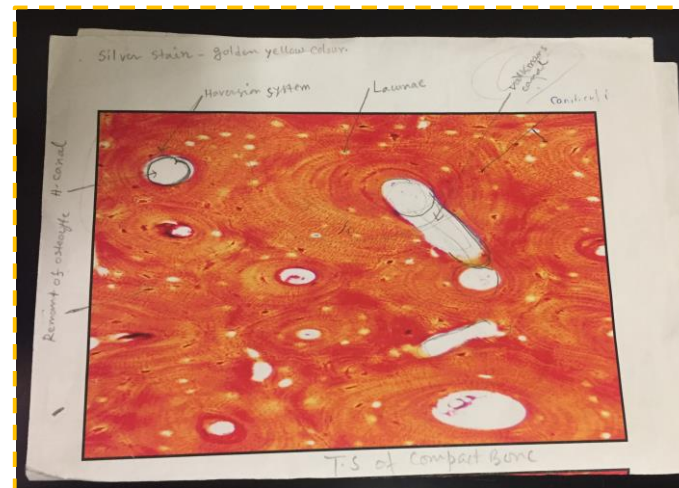
### Features:

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



## Q2- mention the organs (distribution, site & example)?

- Diaphysis of long bones.



Compact Bone

# Compact (Cortical) Bone (L.S.)

Remember to write L.S

## Q1- Identify the structure?

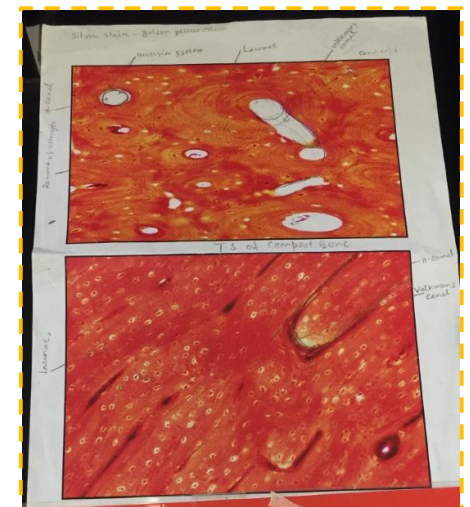
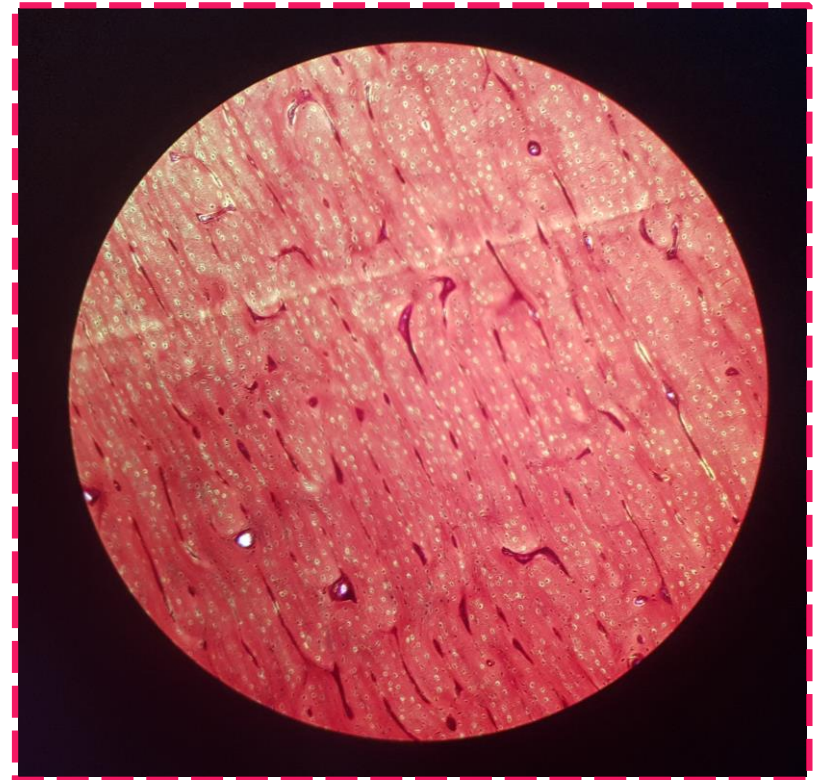
Compact bone (cortical)

### Features:

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

## Q2- mention the organs (distribution, site & example)?

- Diaphysis of long bones.





# ★ Spongy (Cancellous) Bone

## Q1- Identify the structure?

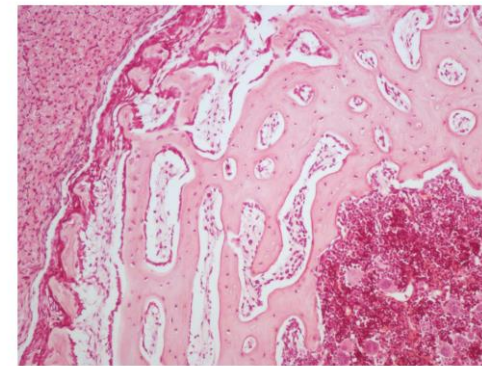
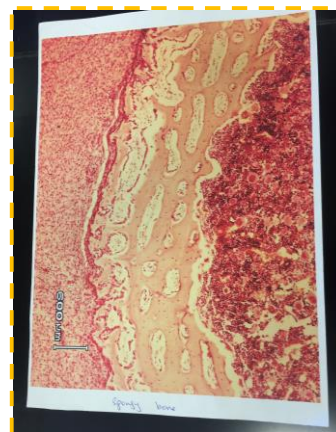
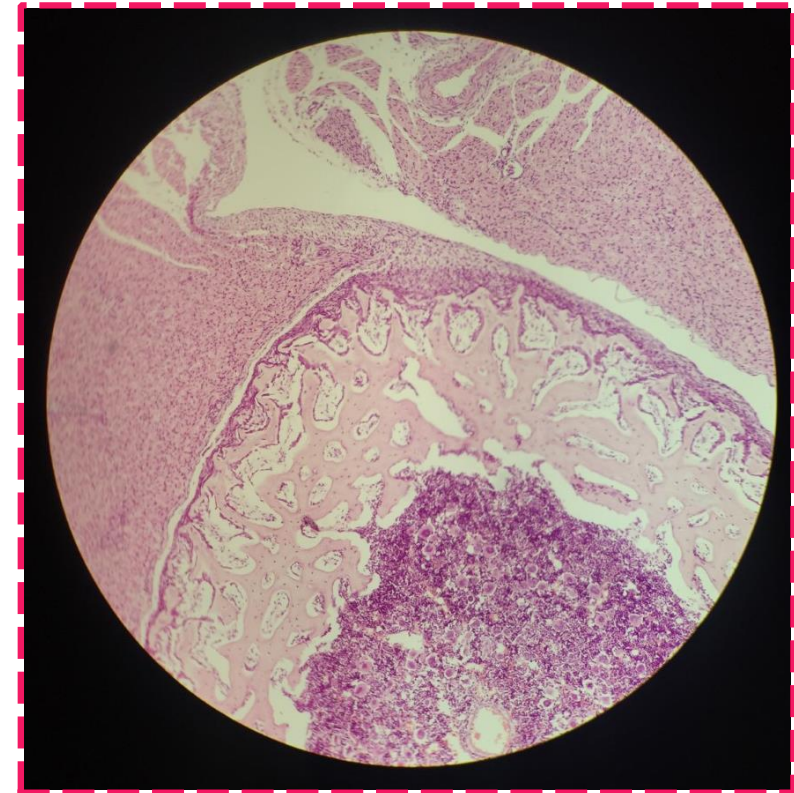
Spongy (Cancellous) Bone

### Features :

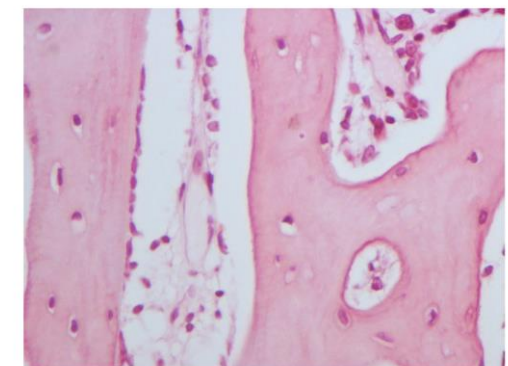
- Irregular bone trabeculae ( matrix ).
- Irregular bone marrow spaces contains bone marrow .
- NO Haversian systems .
- Osteoclasts ( multinucleated )

## Q2- mention the organs (distribution, site & example)?

- Flat bones.
- Epiphysis of long bone.



Spongy Bone



Spongy Bone

# ★ Skeletal Muscle ( L.S.)

Remember to write L.S

## Q1- Identify the structure?

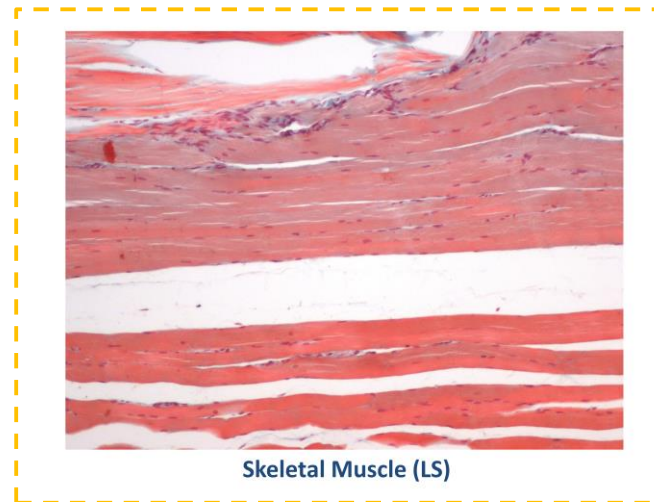
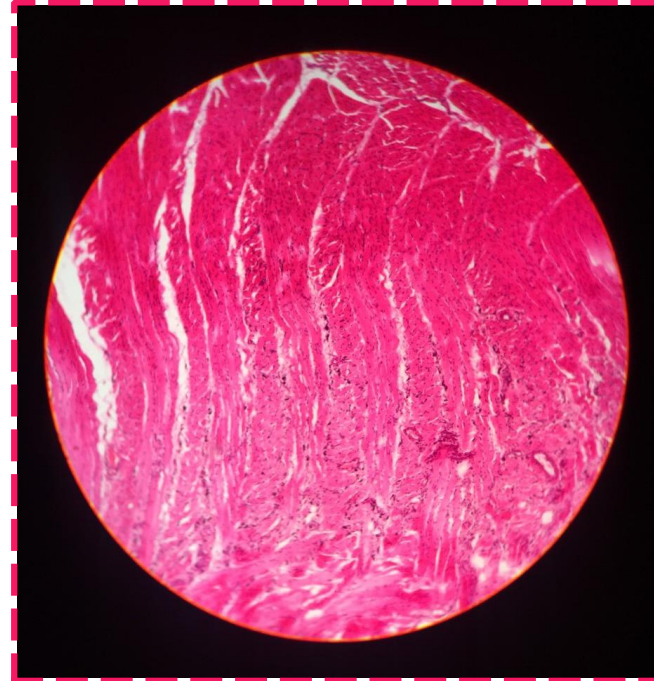
Skeletal muscle ( L.S.)

### Features :

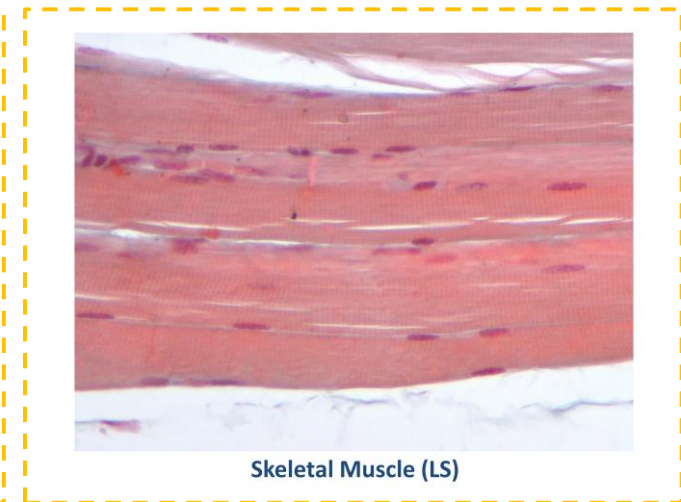
- Multinucleated, nuclei on periphery.
- Cylindrical in shape.
- Non-branched .
- Cytoplasm (**sarcoplasm**) is acidophilic and shows clear transverse striations.

## Q2- mention the organs (distribution, site & example)?

Skeletal system ( all voluntary muscles ).



Skeletal Muscle (LS)



Skeletal Muscle (LS)



# ★ Skeletal Muscle ( T.S.)

Remember to write T.S

## Q1- Identify the structure?

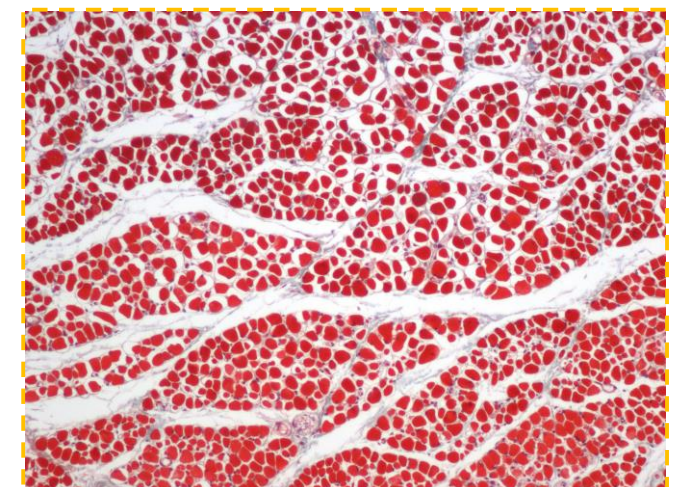
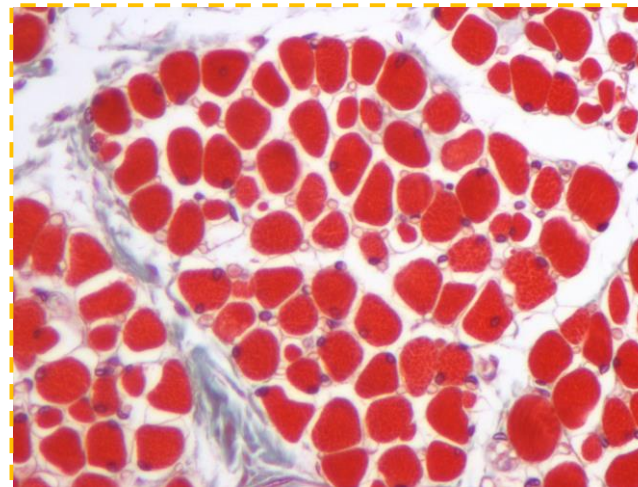
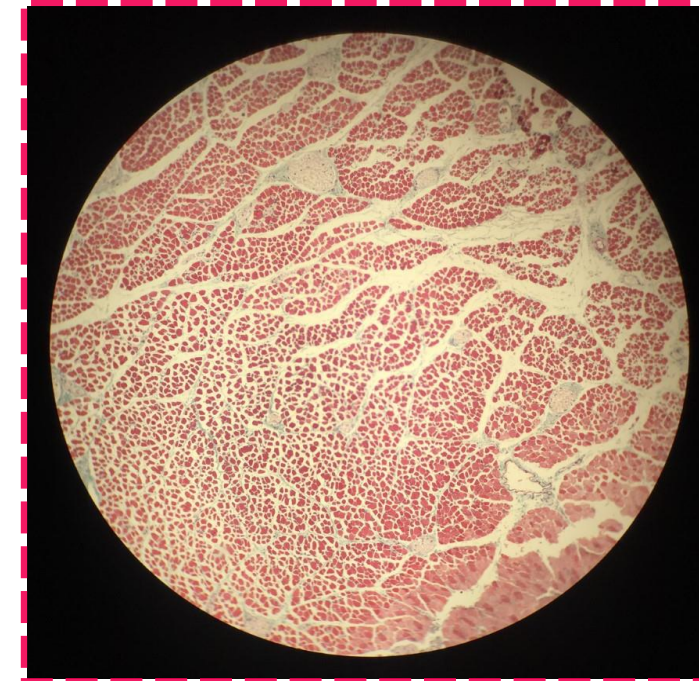
Skeletal muscle (T.S.)

### Features::

- Endomysium: **Loose C.T.** separates the **individual fibres**.
- Perimysium: **Separates the parallel bundles of muscle fibres.**
- Epimysium: **Thick CT** covering the **whole muscle**.
- Multinucleated, nuclei on periphery.
- Non-branched.

## Q2- mention the organs (distribution, site & example)?

Skeletal system ( all voluntary muscles ).





# ★ Cardiac Muscle

## Q1- Identify the structure?

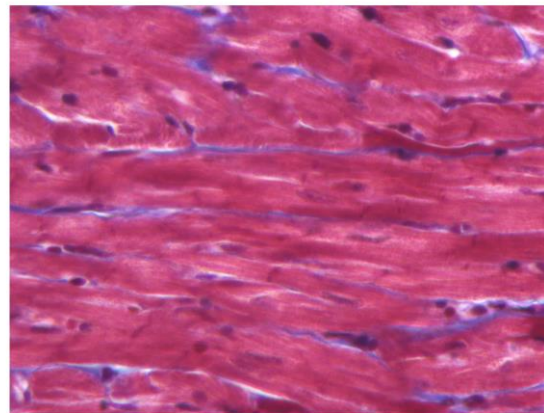
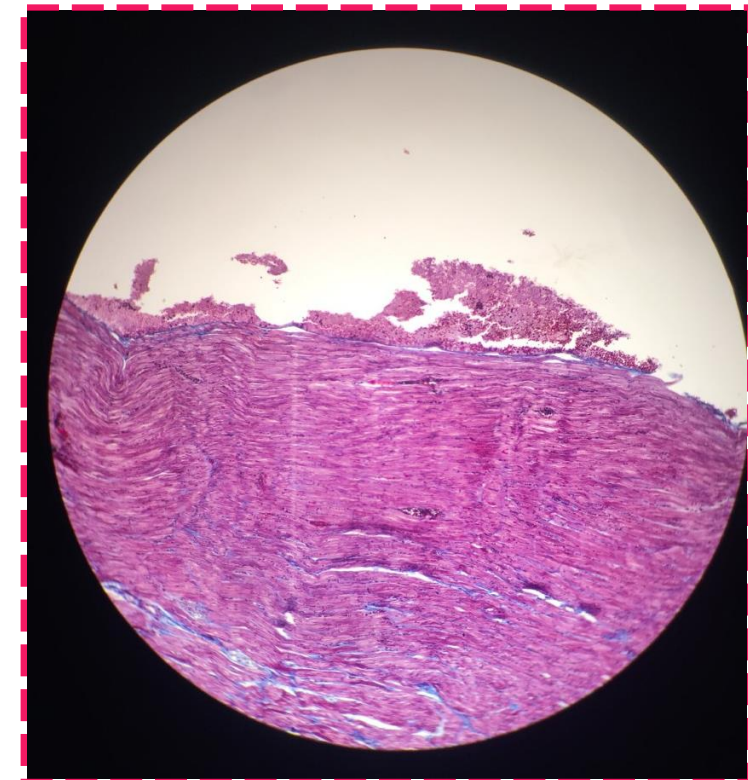
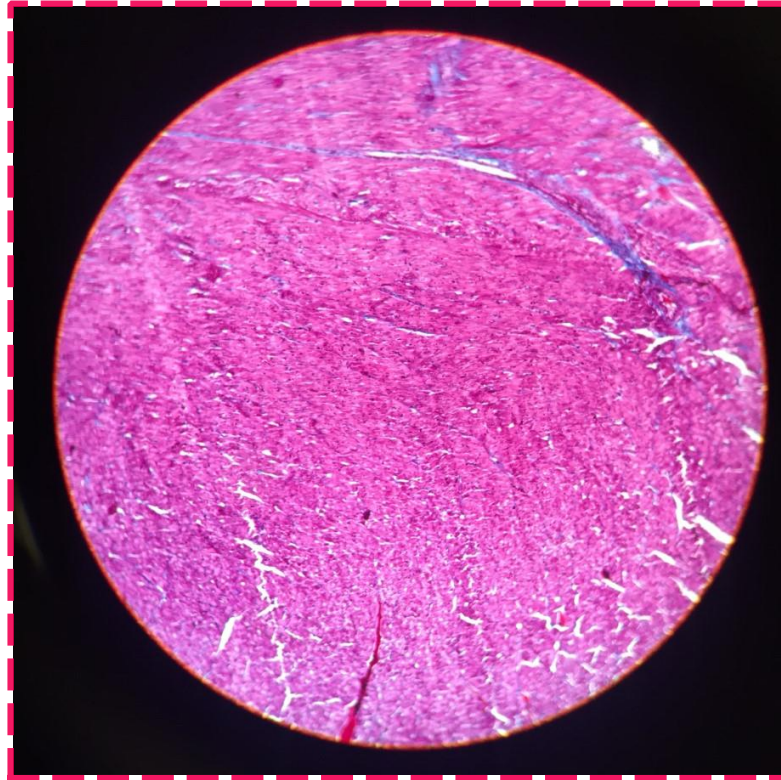
Cardiac muscle

### Features:

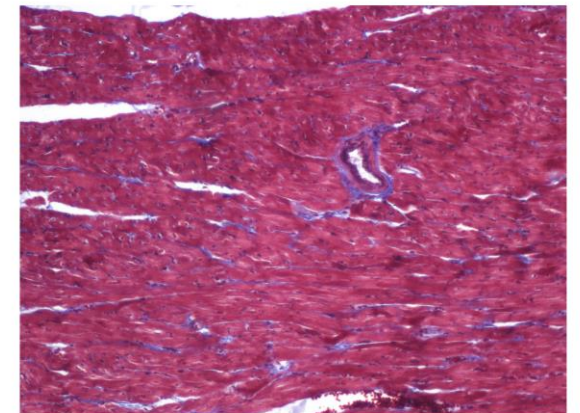
- Mononucleated.
- Oval and central nuclei.
- Branched and anastomose.
- Striated (not clear)
- Cylindrical in shape.
- Intermediate in diameter (in comparison to other muscles)
- Gap junctions are present .
- Intercalated discs.

## Q2- mention the organs (distribution, site & example)?

- Myocardium



Cardiac Muscle



Cardiac Muscle



# Smooth Muscle ( T.S & L.S )

## Q1- Identify the structure?

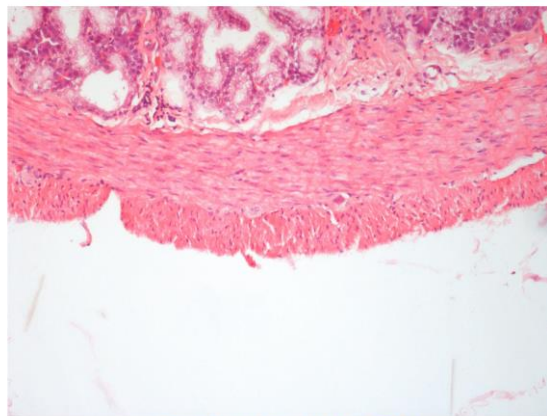
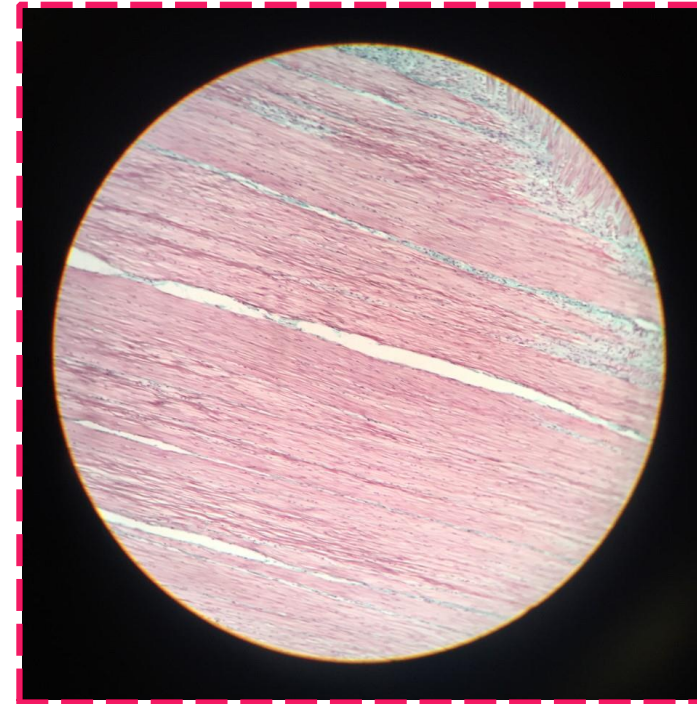
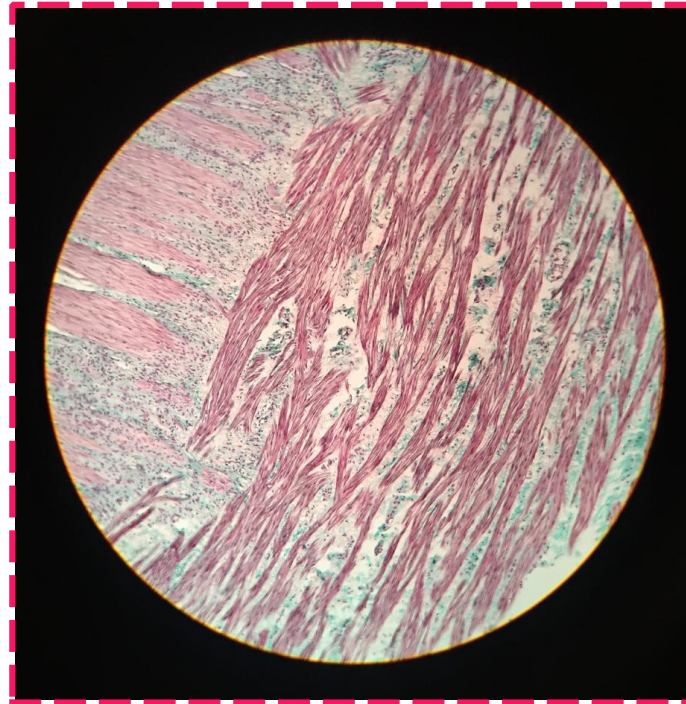
Smooth muscle ( T.S & L.S )

### Features:

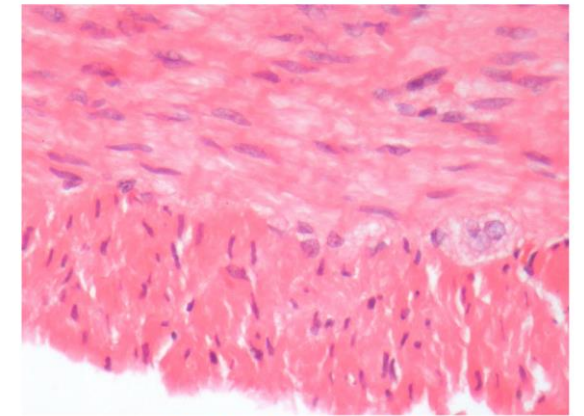
- Mononucleated; oval and central nuclei.
- Non striated.
- Non branched.
- Fusiform (spindle shaped).
- Small in diameter.
- Gap junctions are present.

## Q2- mention the organs (distribution, site & example)?

- Walls of blood vessels.
- Viscera.



Smooth Muscle (LS & TS)



Smooth Muscle (LS & TS)



# Comparison between different types of muscle fibers

	Skeletal	Cardiac	Smooth
<b>Site</b>	Muscle attached to skeleton	Myocardium of the heart	Viscera e.g. stomach
<b>Shape</b>	Cylindrical	Cylindrical	Fusiform
<b>Diameter</b>	Largest	Medium-sized	Smallest
<b>Branching</b>	Non-branched	Branched	Non-branched
<b>Striations</b>	Clear	Not clear	Absent
<b>Intercalated discs</b>	Absent	Present	Absent
<b>Nuclei</b>	Numerous and peripheral	One central nucleus	One central nucleus
<b>Action</b>	Voluntary	Involuntary	Involuntary
<b>Regeneration</b>	Limited	No	active

[Useful for revision](#)

A special thanks goes to  
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