

# Specialized Connective Tissue

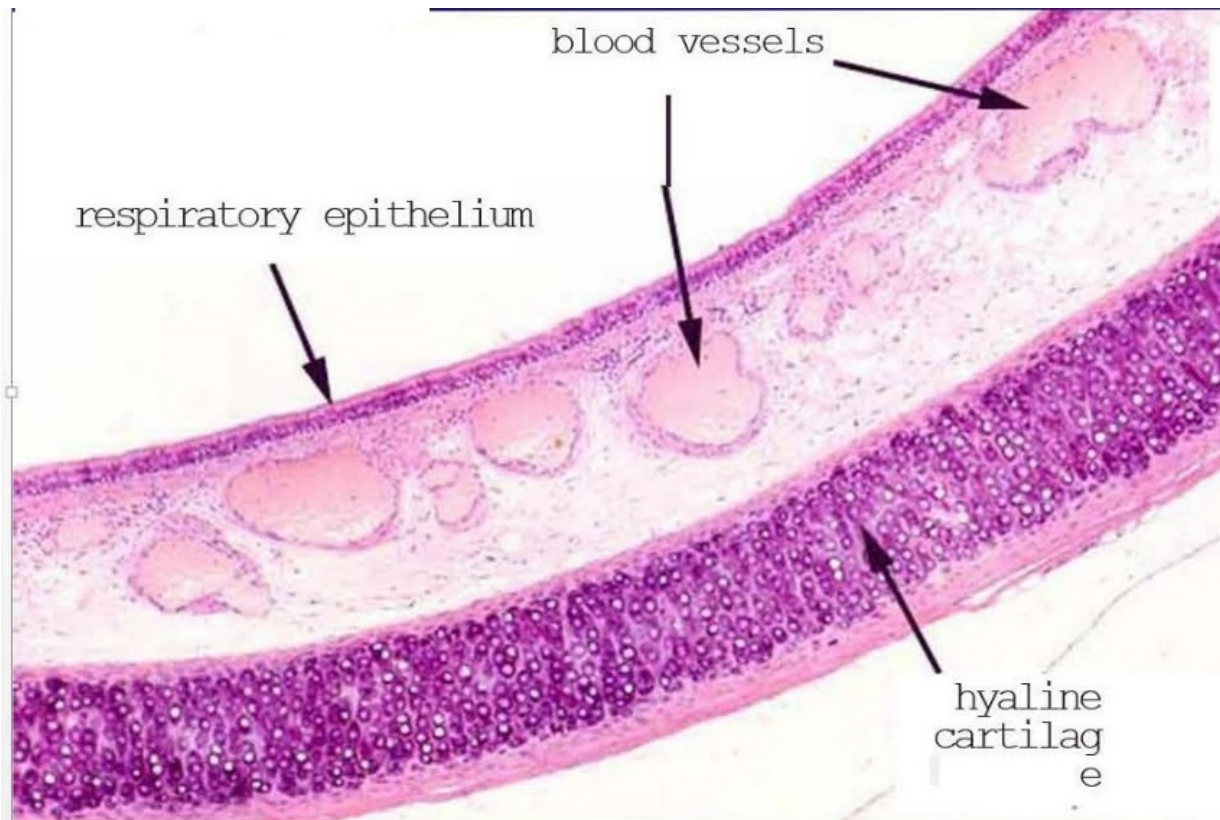
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- Cartilage: special form of connective tissue, non vascular and receive nutrition via diffusion through the extracellular matrix . it's consist mainly of cell called chondrocytes occure within spaces in the matrix called lacunae ,A group of chondrocytes called (cell nest).Most cartilage is surrounded by a membrane called perichondrium, there are three type of cartilage:

# 1- Hyaline cartilage (most common type)

- Fine collagen fiber embedded in a gel -type matrix, Occasional chondrocytes inside lacunae, Contain perichondrium, Found in embryo and replaced by bone in adult ,in the nose ,larynx ,trachea ,end of rib and bronchi.



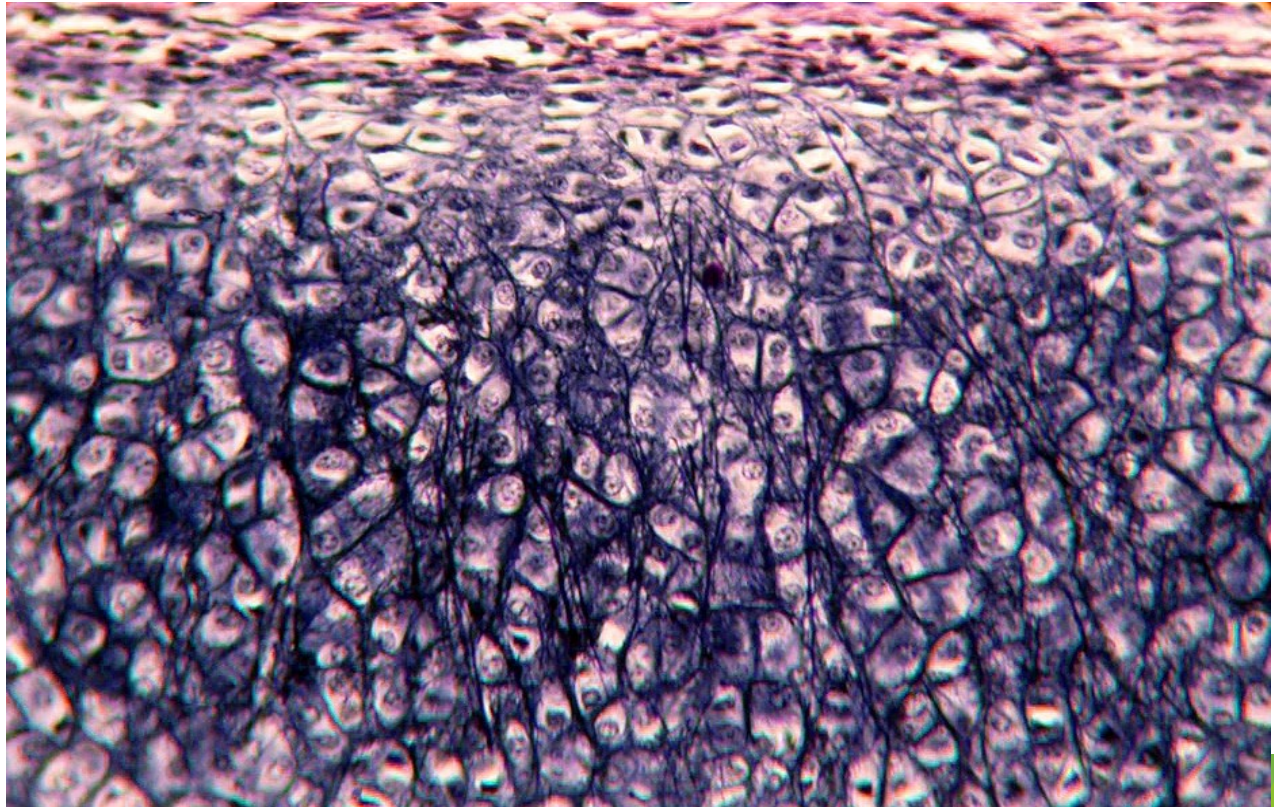
## 2- Elastic cartilage

- Possesses a perichondrium, The matrix in addition to collagen fiber contains elastic fiber, occure in external ear ,epiglottis ,wall of auditory tube.

Perichondrium

Chondroblasts

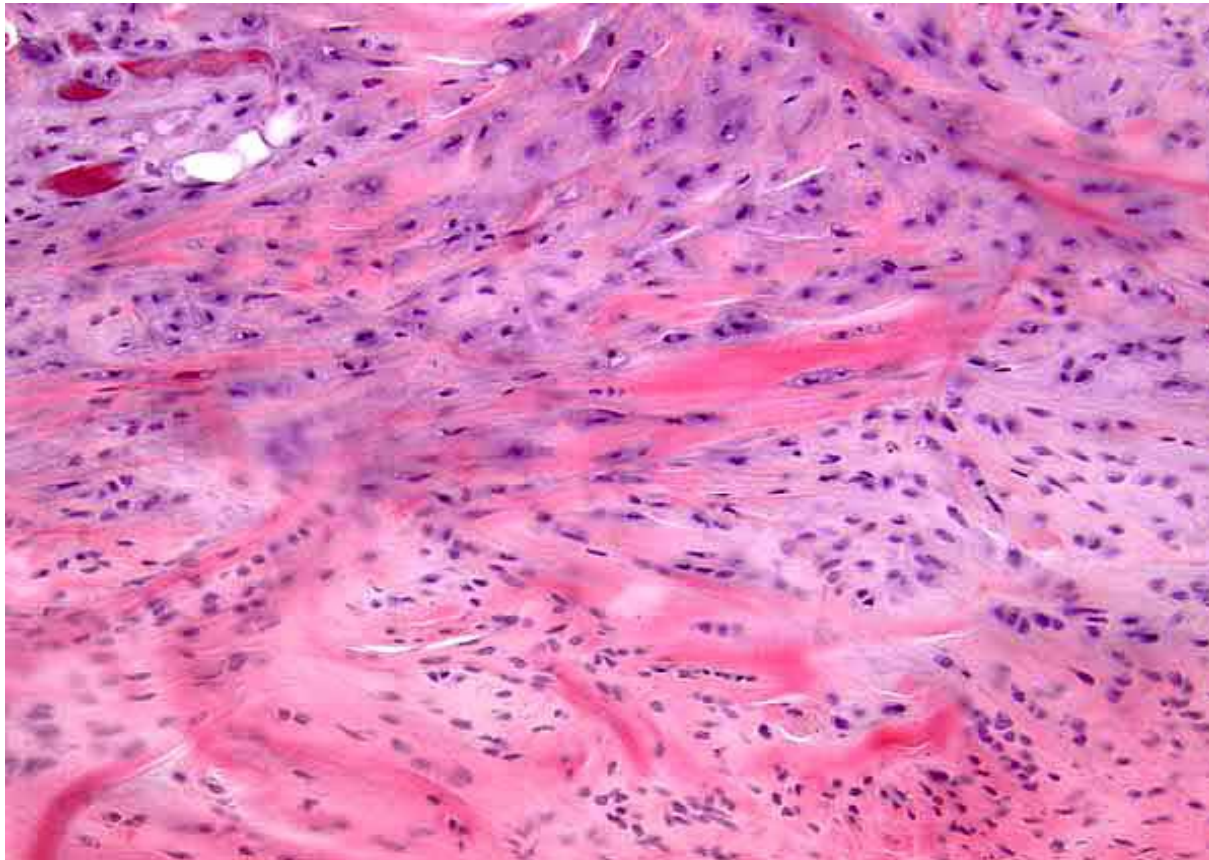
Chondrocytes





### 3- Fibro cartilage

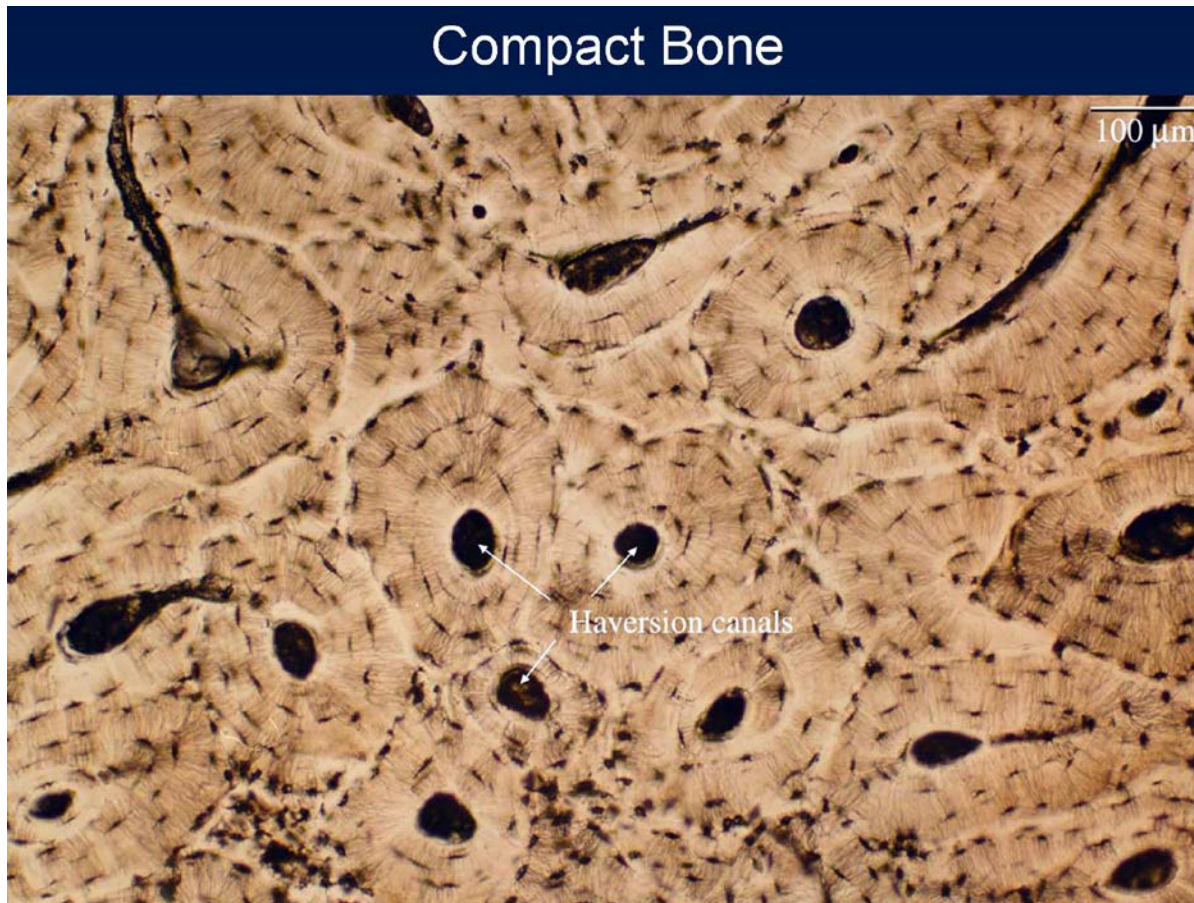
Differ from elastic and hyaline cartilage it has no perichondrium, the matrix contain a bundle of collagen fiber, the chondrocyte are smaller and oriented in a parallel longitudinal rows, found in the intervertebral disk.



Bone :

The unit structure of bone are lamella ,thin layer of bony tissue contain osteocyte or bone cell in lacuna, there are two type of bone:

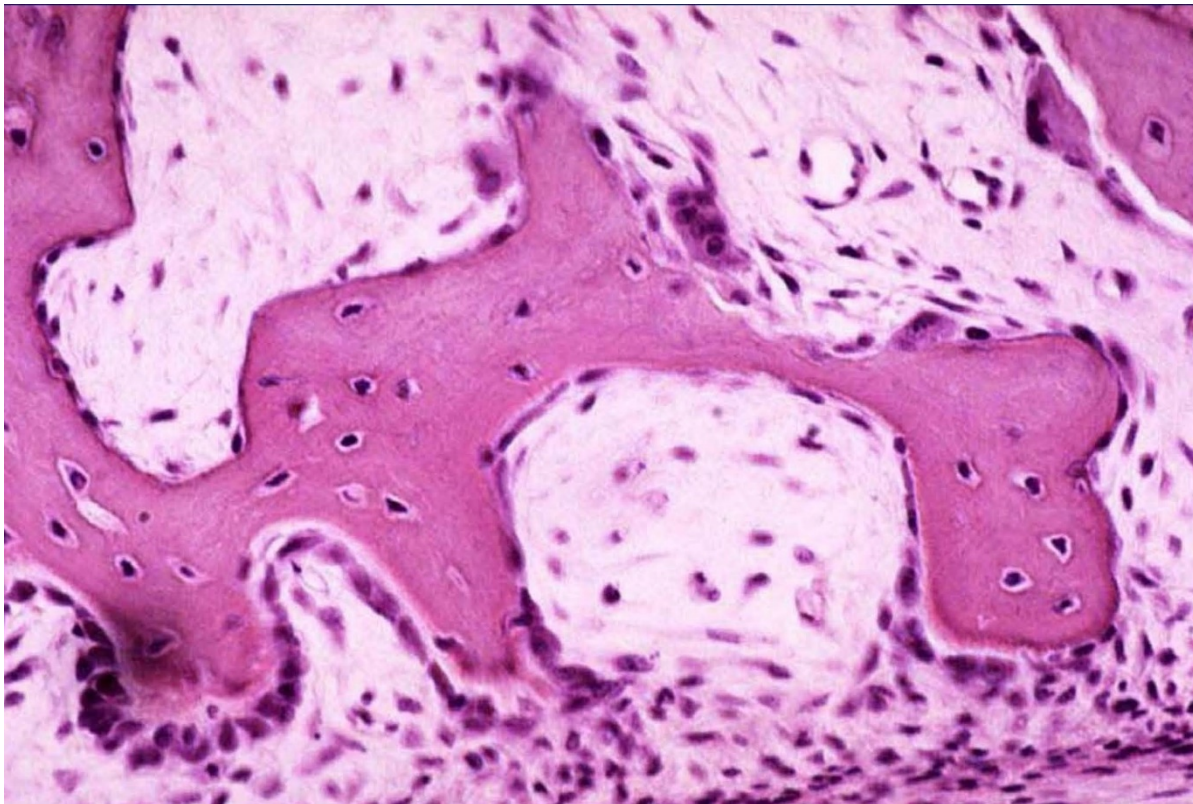
A-Compact bone: composed of cylindrical unit called haversian system consist of concentric lamella surrounding a central canal (haversian canal) which contain vascular and nervous supply ,between haversian there are interstitial lamella ,haversian system connect with each other by volkmans canal.





## B- Spongy bone

It composed of numerous bone trabeculae separated by marrow cavity ,osteoblast found in the surface of trabeculae, osteocyte found in the bone trabecula ,osteoclast between osteoblast giant cell multinucleated.



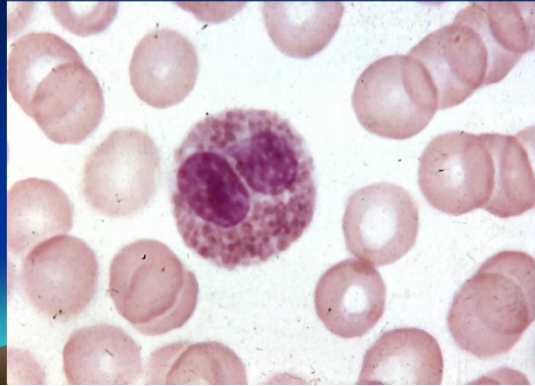


## ● Blood:

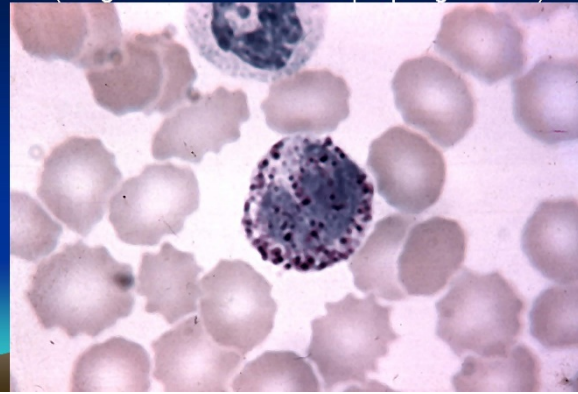
is specialized body fluid, it has four main component, plasma, platelets, red and white blood cell.

- Erythrocyte is biconcave and non nucleated, stain pink with eosin,
- Leukocyte are two type granule and non-granule .
- Granule cells are three type: neutrophil which multilobule in nuclei.
- Eosinophil lobule nuclei with pinkish color.
- Basophil lobule with blue color granule.
- Agranular cells two type, lymphocyte circular nuclei with thin cytoplasm blue with stain
- Monocyte horse like nucleus with pinkish stain larger than lymphocyte.

Blood Smear with an Eosinophil  
(bilobed nucleus + red granules)



Blood Smear with a Basophil  
(irregular nucleus + dark purple granules)



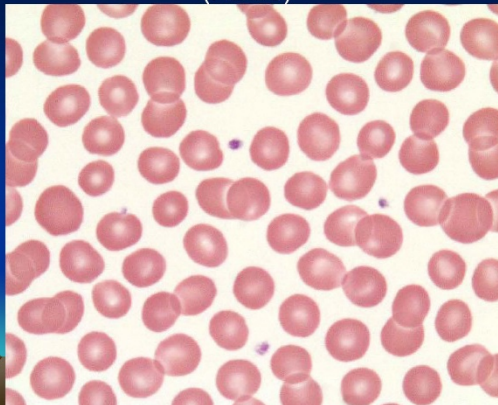
Blood Smear with two Monocytes



Blood Smear with a Lymphocyte



Blood Smear with Erythrocytes – Red Blood Cells  
(RBCs)



Blood Smear with a Neutrophil  
(Polymorphonuclear Leukocyte)

