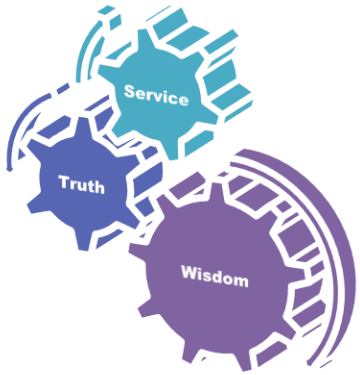
Vision; The Dream/Tomorrow

- **Motto**



- To impart evidence based research oriented medical education
- To provide best possible patient care
- To inculcate the values of mutual respect and ethical practice of medicine

MSK-1 Module(LGIS)
Connective Tissue

Dr. Mohtasham Hina

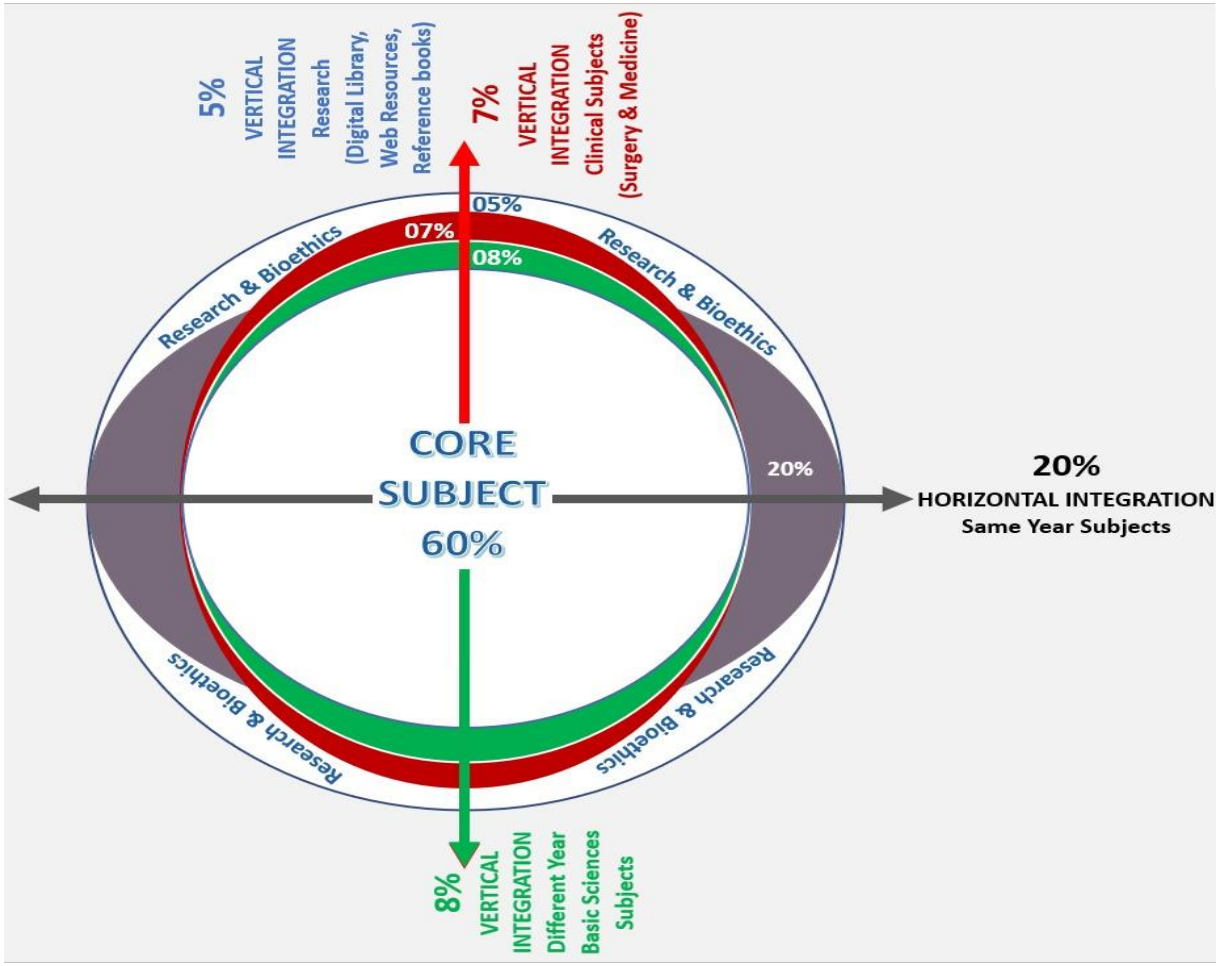
23- 04-2023

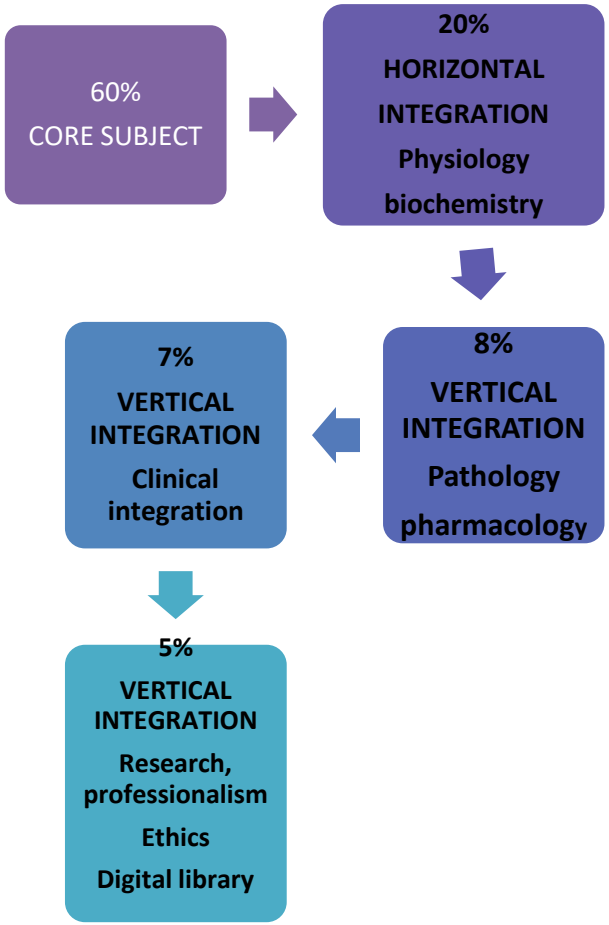
Learning Objectives

At the end of lecture 1st year students should be able to

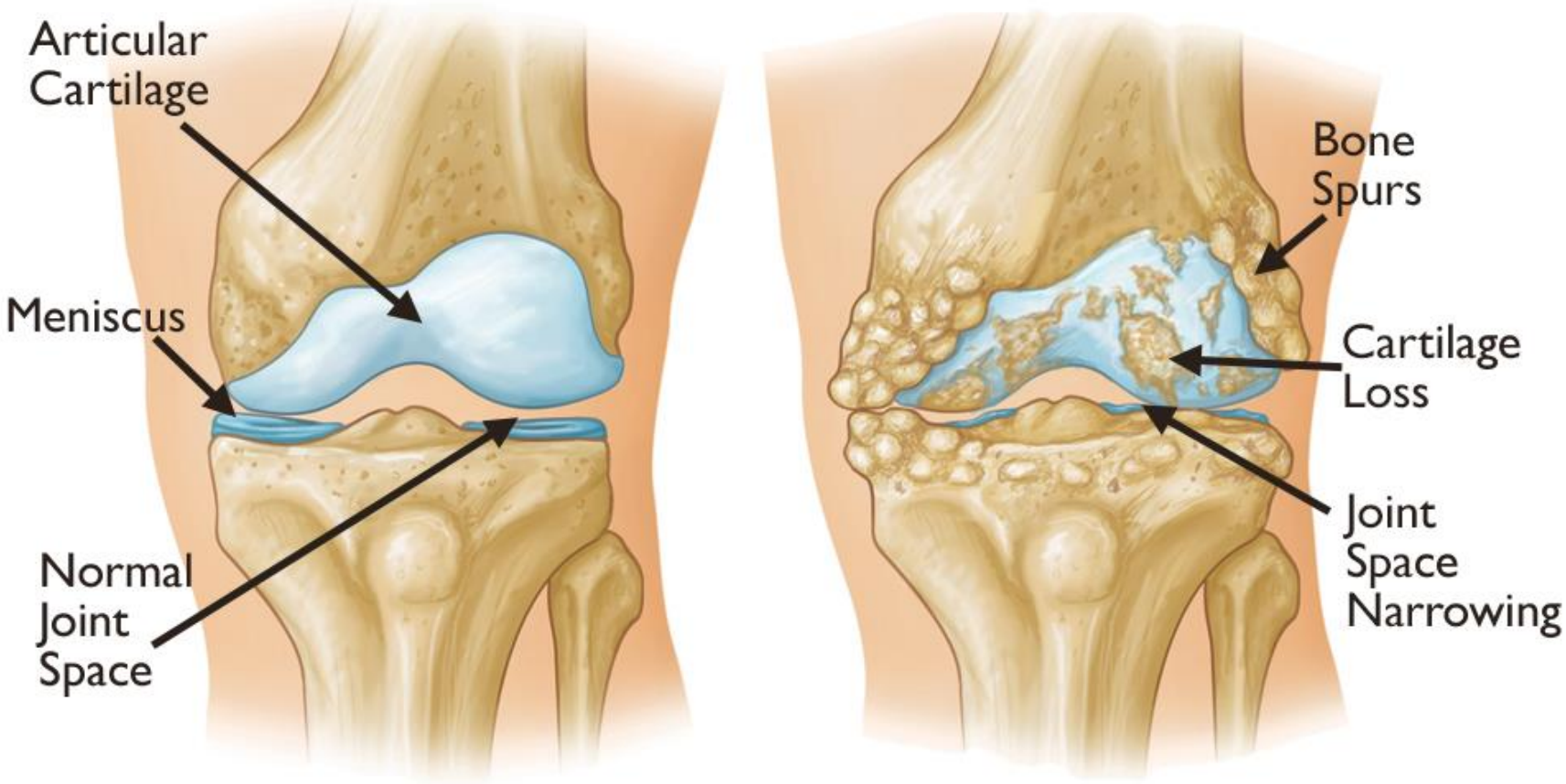
- Classify cartilage
- Location and functions of different types cartilage
- Histological features of various types of cartilage
- correlate clinical aspects
- To understand bio-physiological aspect connective tissue
- Read a research article
- Use digital library

Professor Umar Model of Integrated Lecture





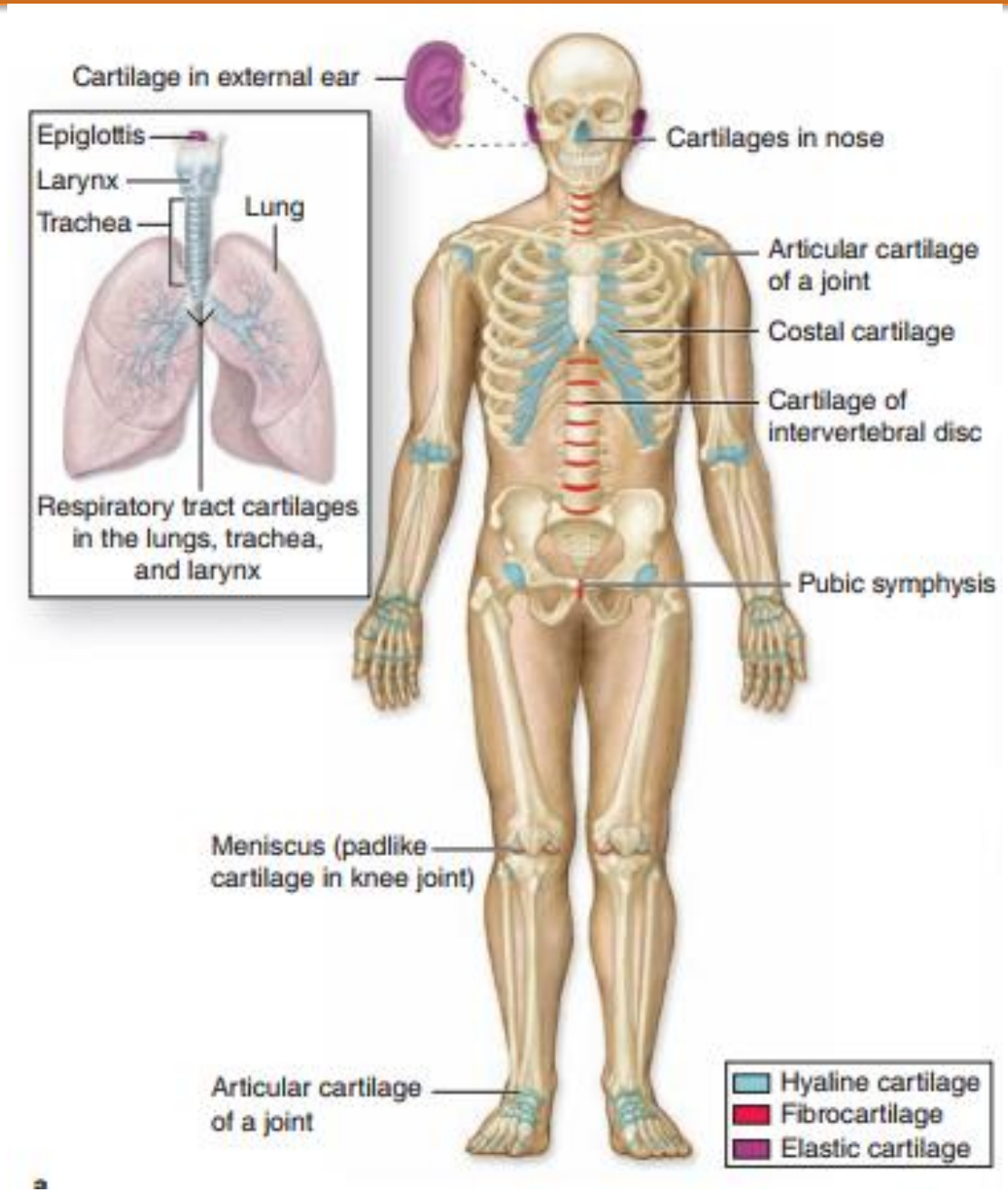
Osteoarthritis



Types

- Hyaline cartilage
- Elastic cartilage
- Fibrocartilage

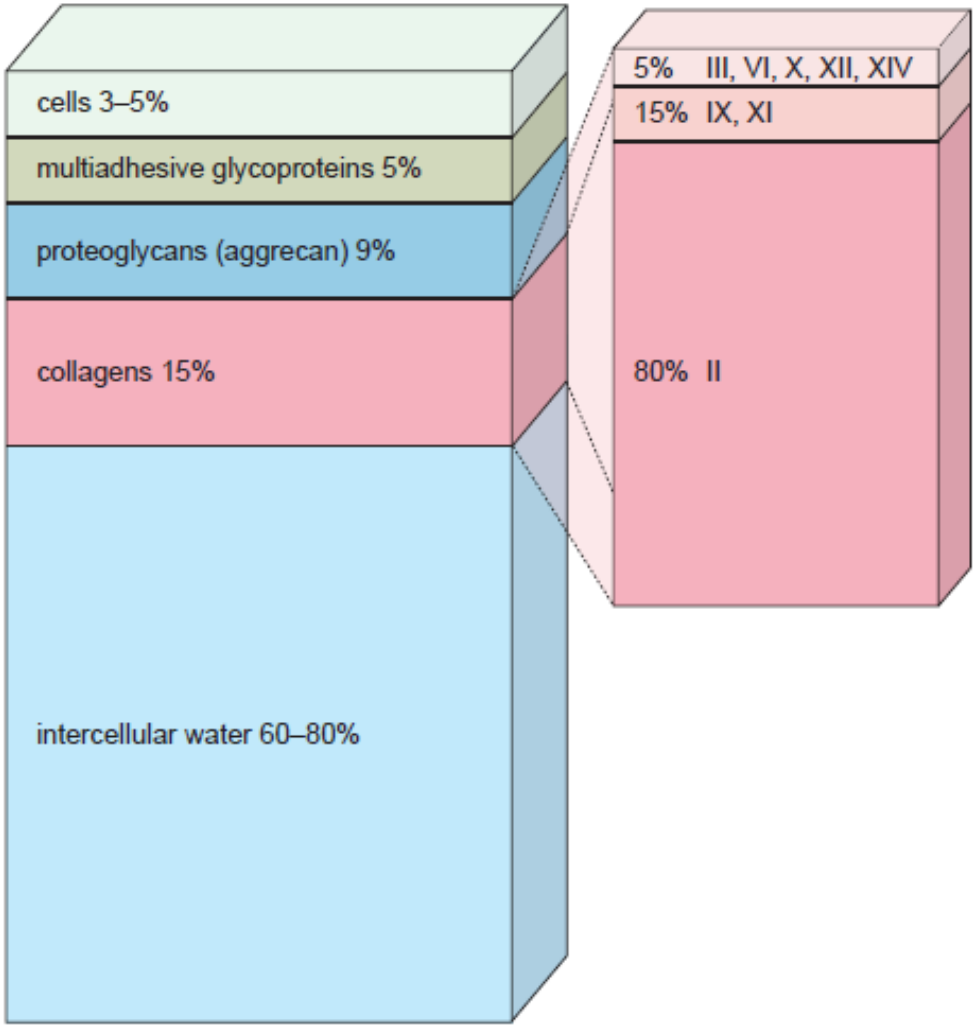
Core Concept



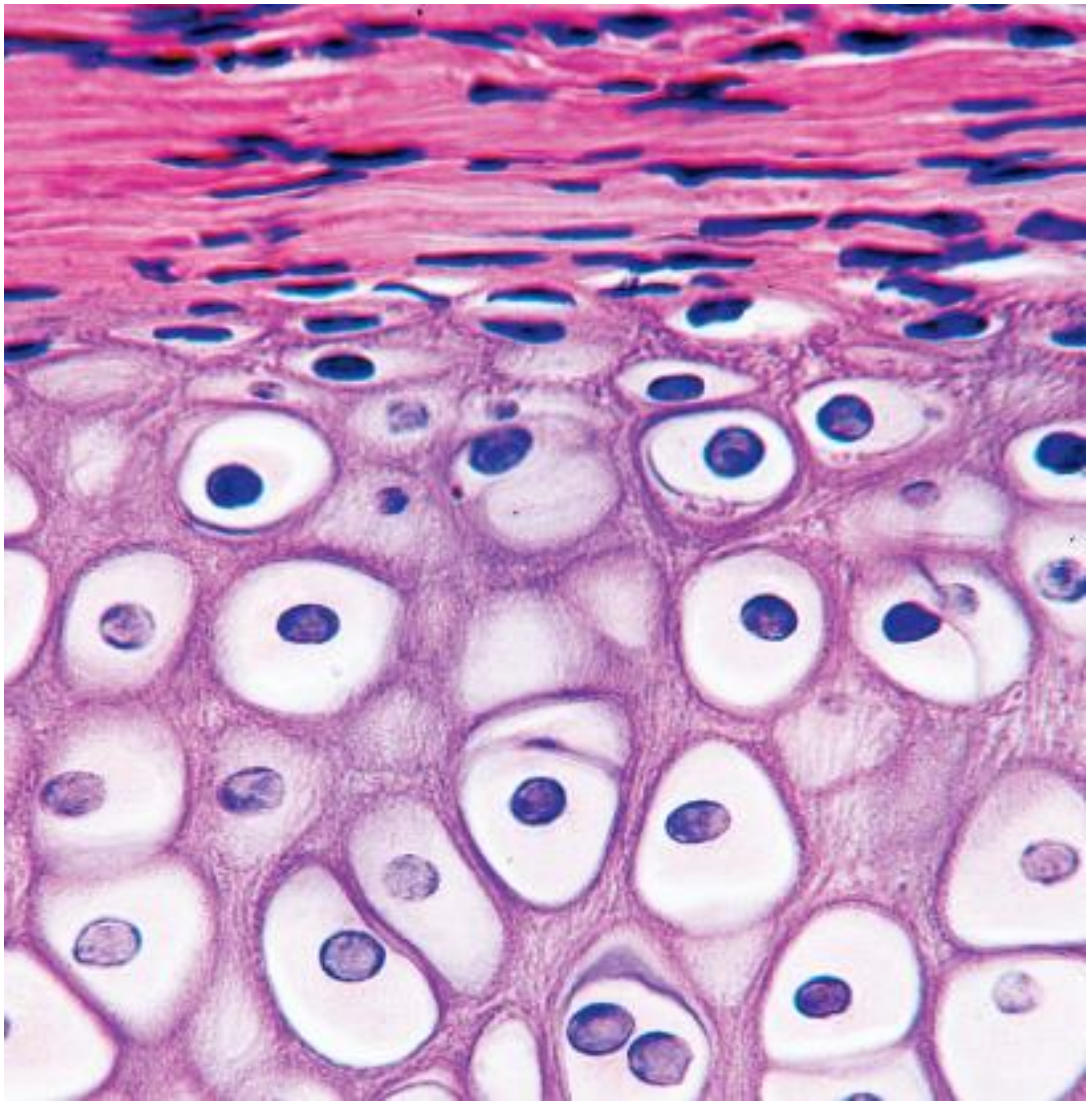
Cartilage

- Composition
  - »Chondrocytes
  - »Fibers
  - »Ground substance

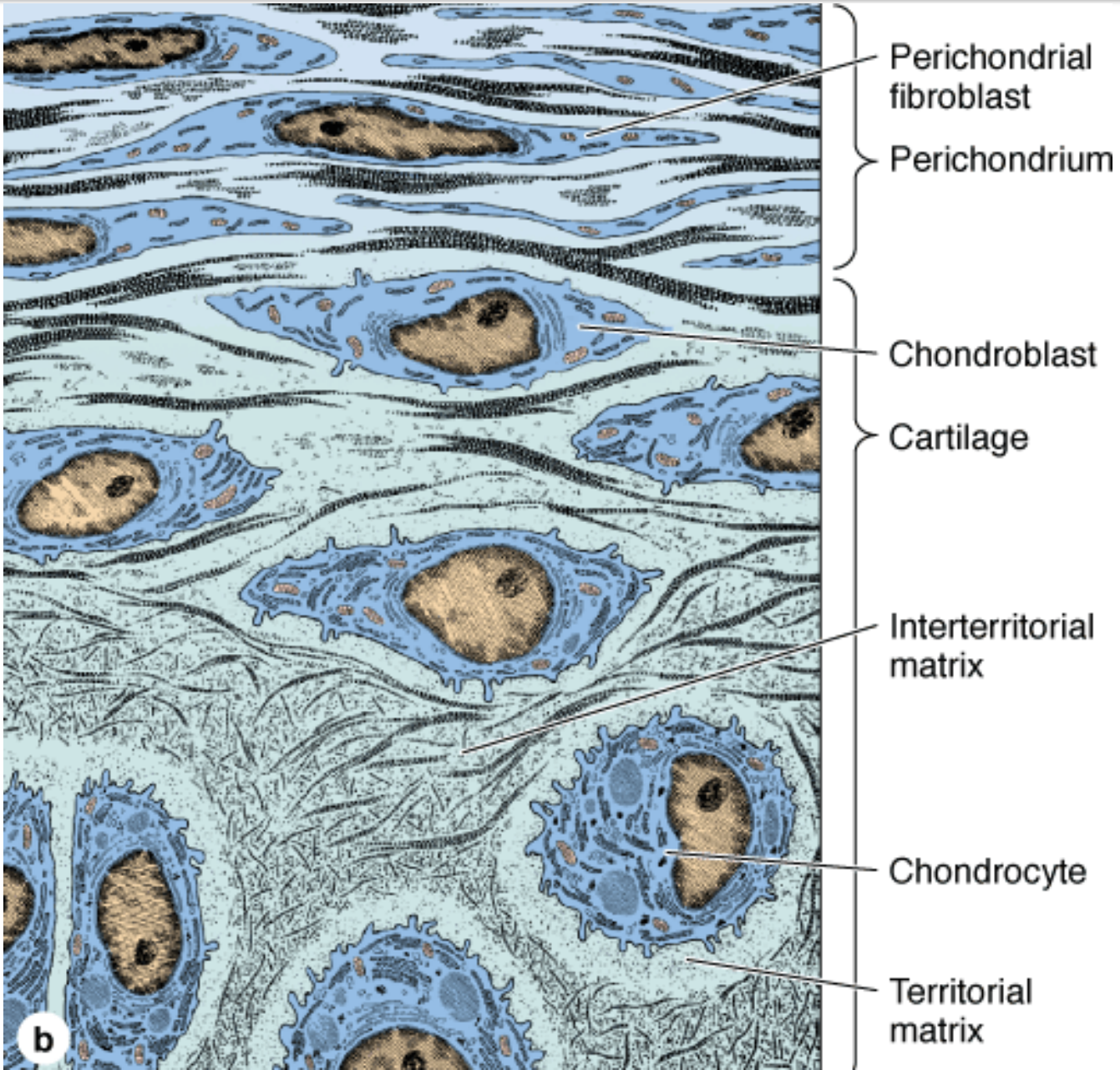
Molecular Composition

- 

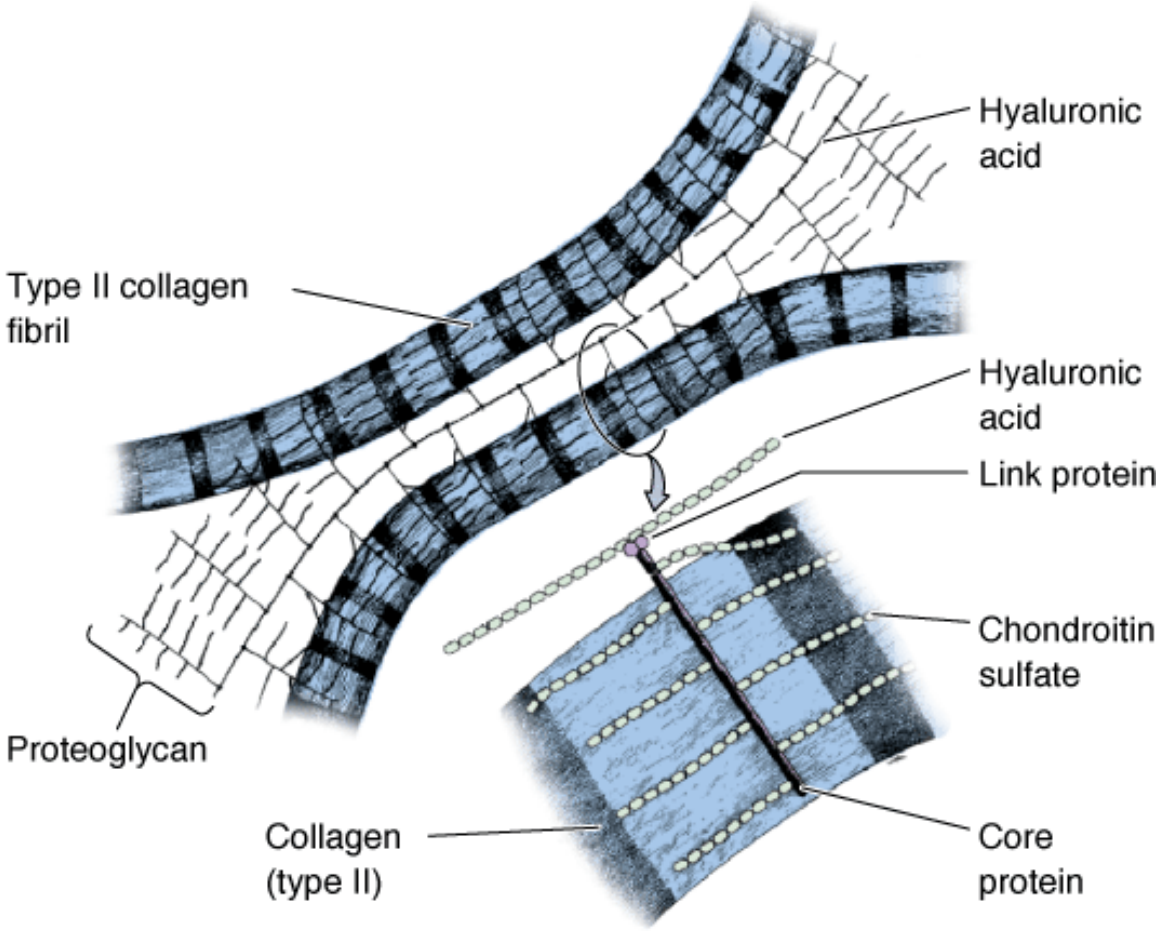
Hyaline cartilage

- 

core concept

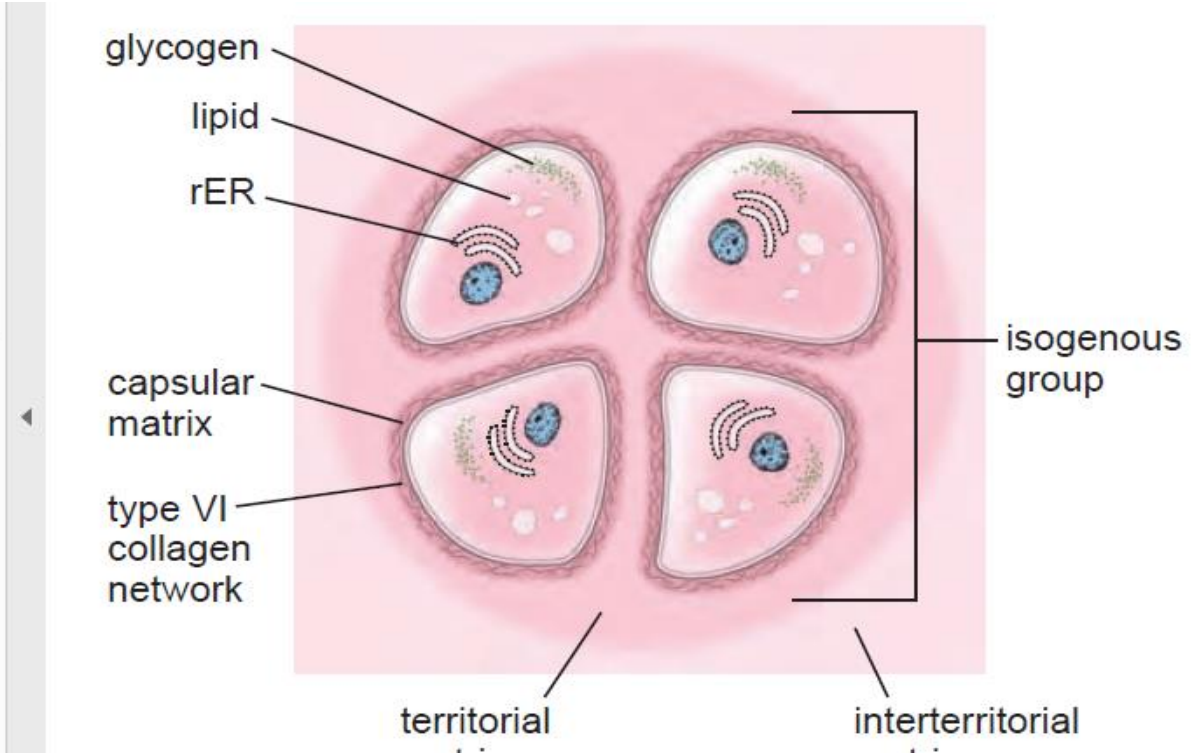


Molecular composition of hyaline cartilage

- 

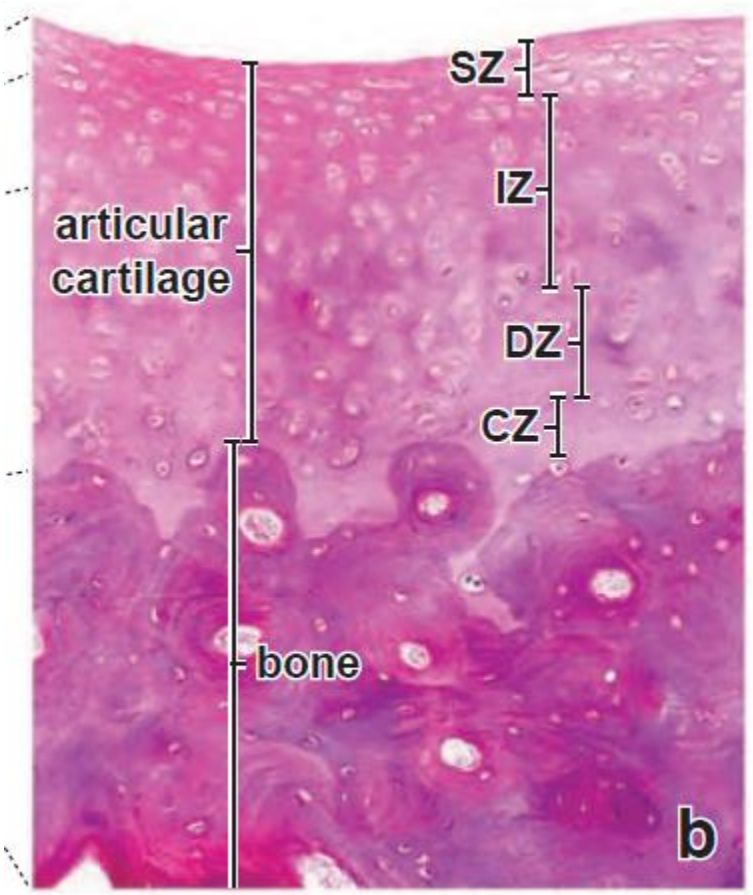
Source: Mescher AL: *Junqueira's Basic Histology: Text and Atlas, 12th Edition:* http://www.accessmedicine.com

- Capsular matrix
- Territorial matrix
- Inter territorial matrix
-



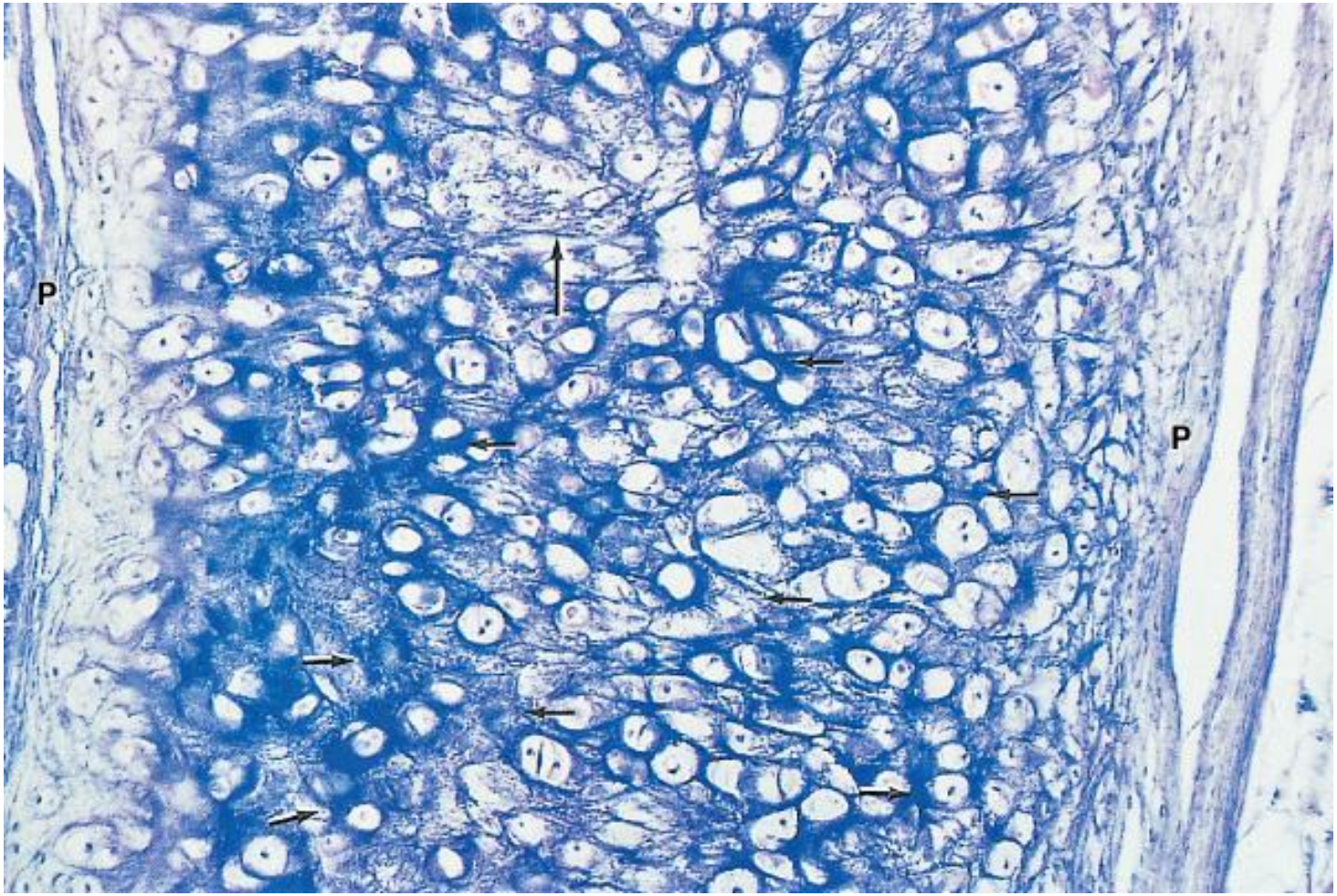
zones

- **superficial (tangential) zone**
- **intermediate (transitional**
- **deep (radial) zone**
- **calcified zone**
-

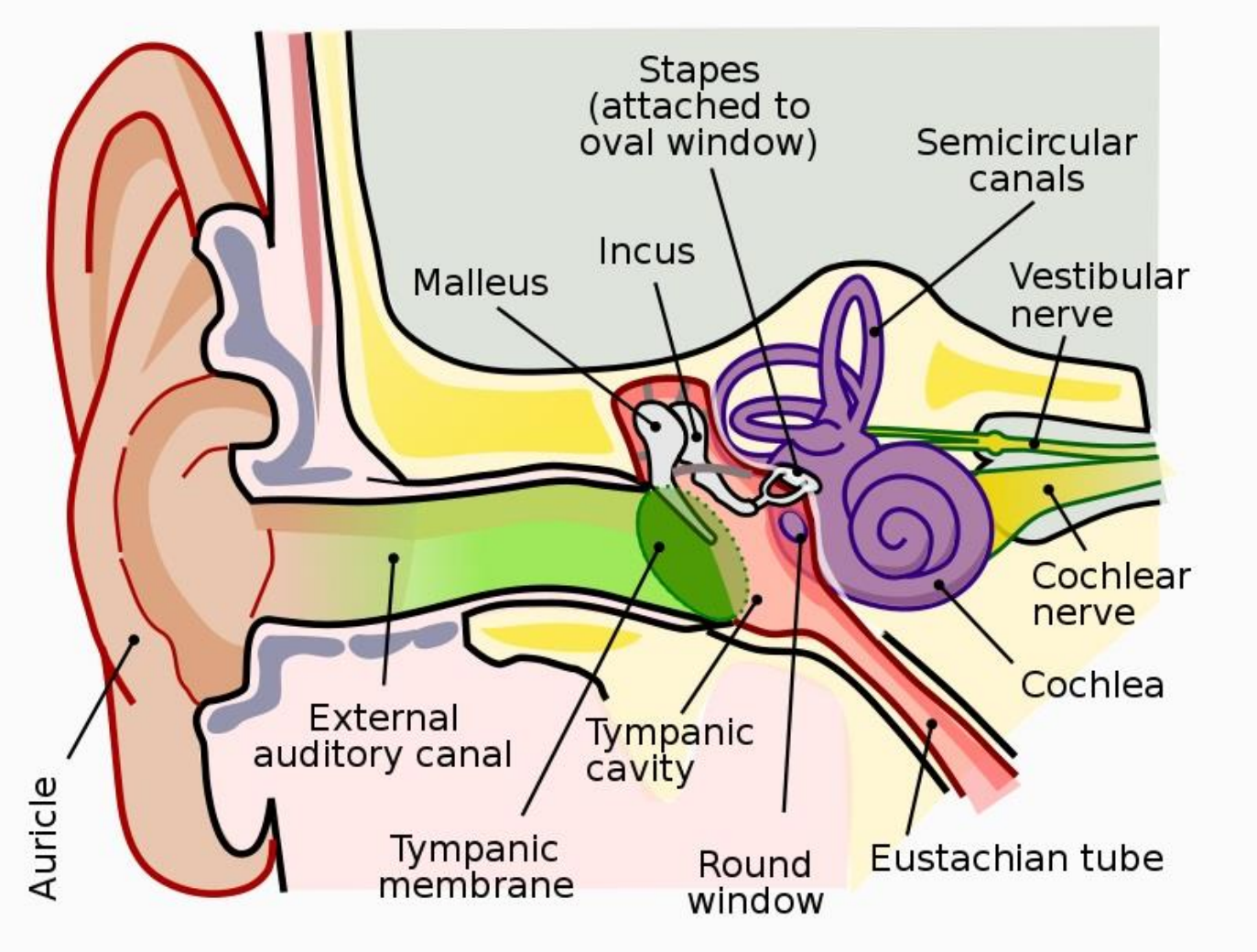


core concept

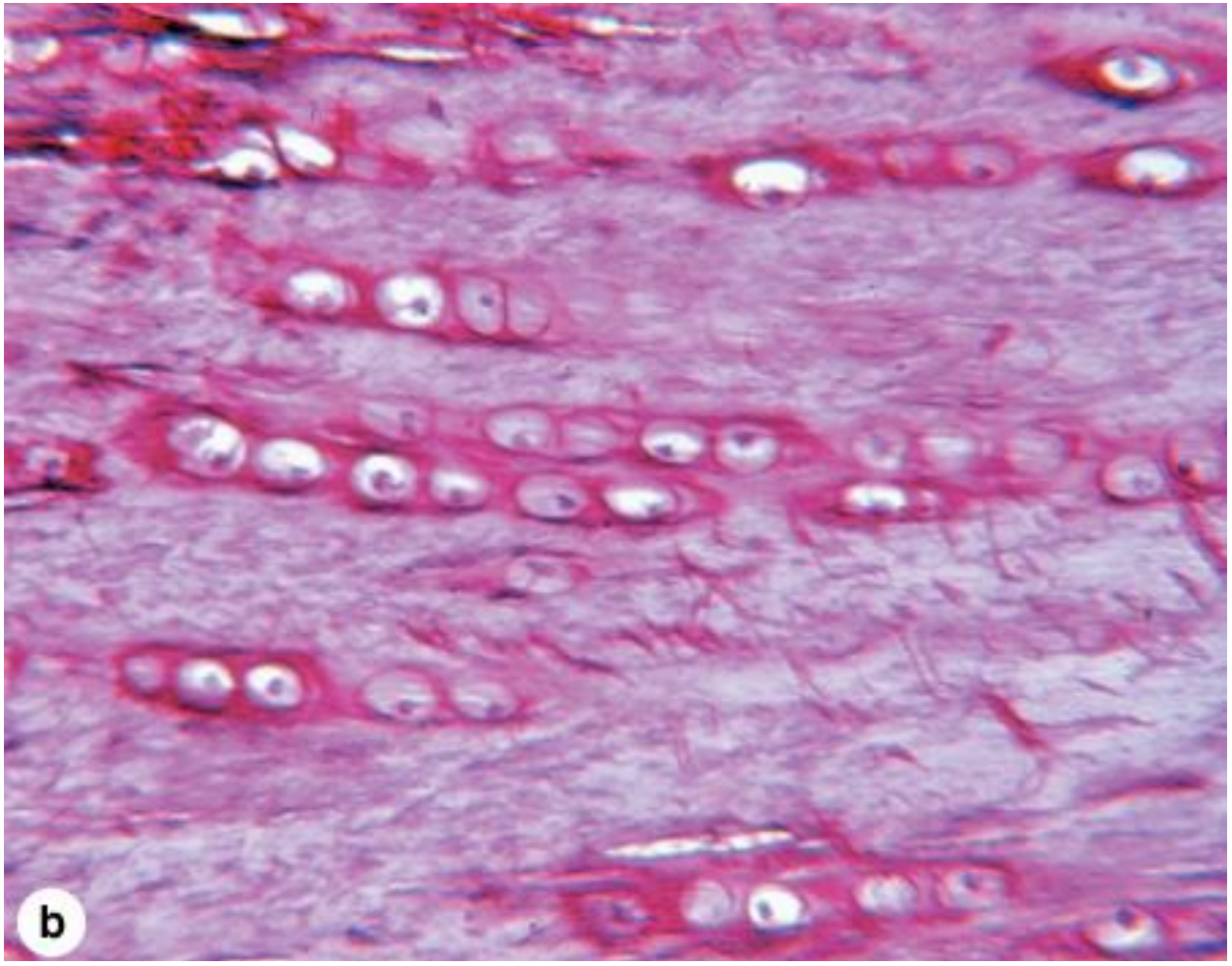
Elastic cartilage

- 

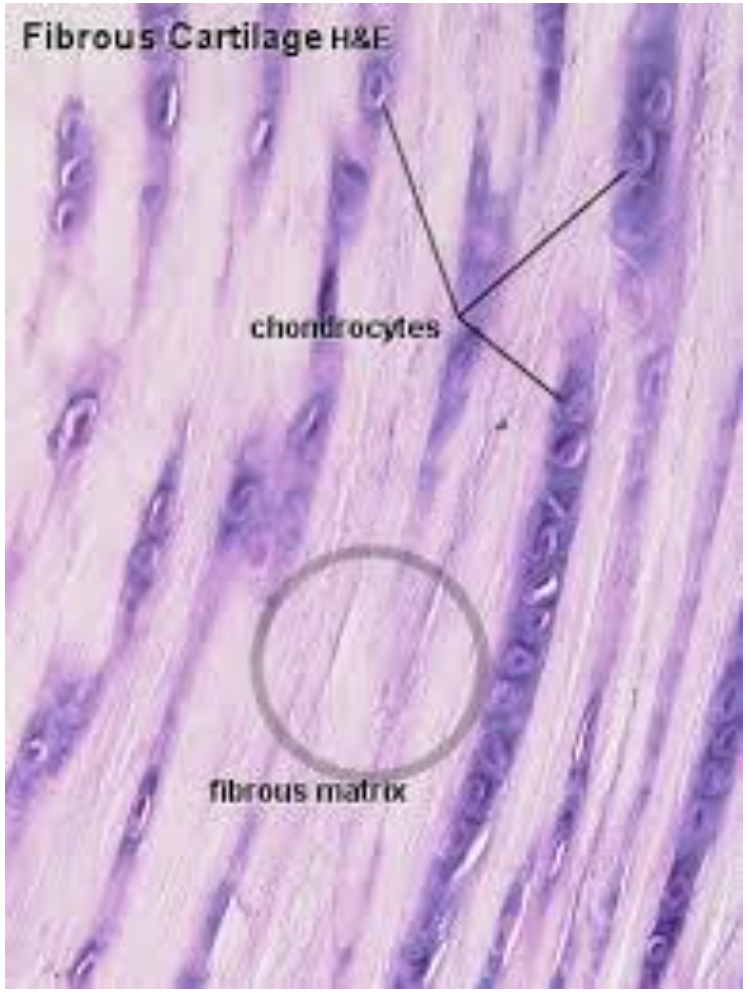
Elastic cartilage location

- 

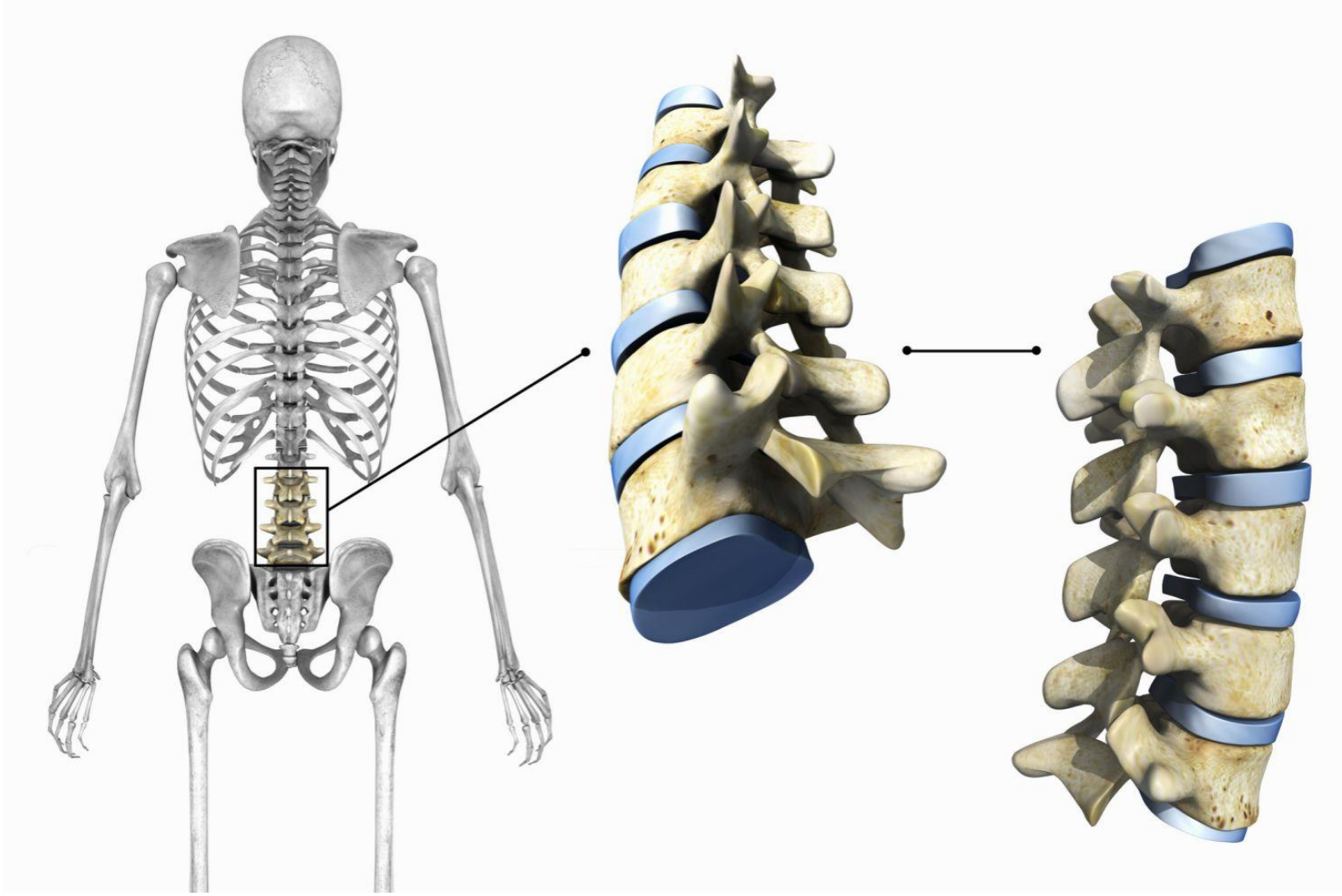
Fibrocartilage

- 

Fibrocartilage

- 

Fibrocartilage



core concept

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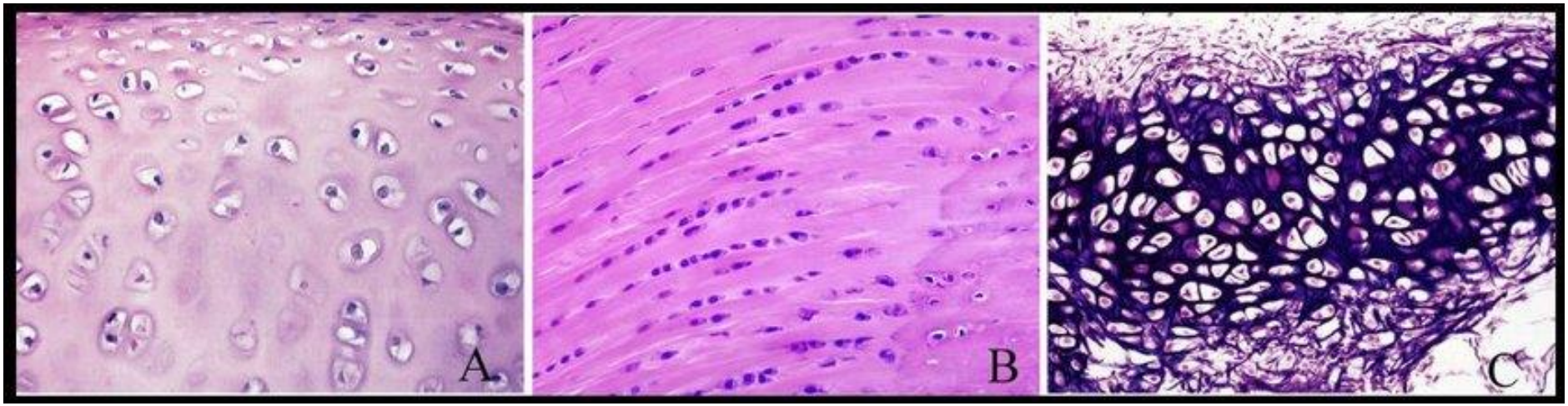

Medical application

- In contrast to other tissues, hyaline cartilage is more susceptible to degenerative aging processes. Calcification of the matrix, preceded by an increase in the size and volume of the chondrocytes and followed by their death, is a common process in some cartilage. "Asbestiform" degeneration, frequent in aged cartilage, is due to the formation of localized aggregates of thick, abnormal collagen fibrils

Research article

- Articular Cartilage regeneration by hyaline chondrocyte:
- https://www.mdpi.com/2227-9059/11/6/1602

Articular Cartilage regeneration by hyaline chondrocyte:

- Cartilage injury defects in animals and humans result in the development of osteoarthritis and the progression of joint deterioration
- Cell isolation from equine hyaline cartilage and evaluation of their ability to repair equine joint cartilage injuries establish a new experimental protocol for an alternative approach to osteochondral lesions treatment

How To Access Digital Library

- Go to the website of HEC National Digital Library.
- On Home Page, click on the INSTITUTES.
- A page will appear showing the universities from Public and Private Sector and other Institutes which have access to HEC National Digital Library HNDL.
- Select your desired Institute.
- 5. A page will appear showing the resources of the institution
- 6. Journals and Researches will appear
- 7. You can find a Journal by clicking on JOURNALS AND DATABASE and enter a keyword to search for your desired journal.

Learning Resources

- Junqueira's Basic Histology 12th Edition, Chapter 7
- Histology , A text and Atlas by Michael H.Ross 6th Edition, Chapter 7
- Google scholar
- https://pubmed.ncbi.nlm.nih.gov/?term=Taylor%20DW%5BAuthor%5D