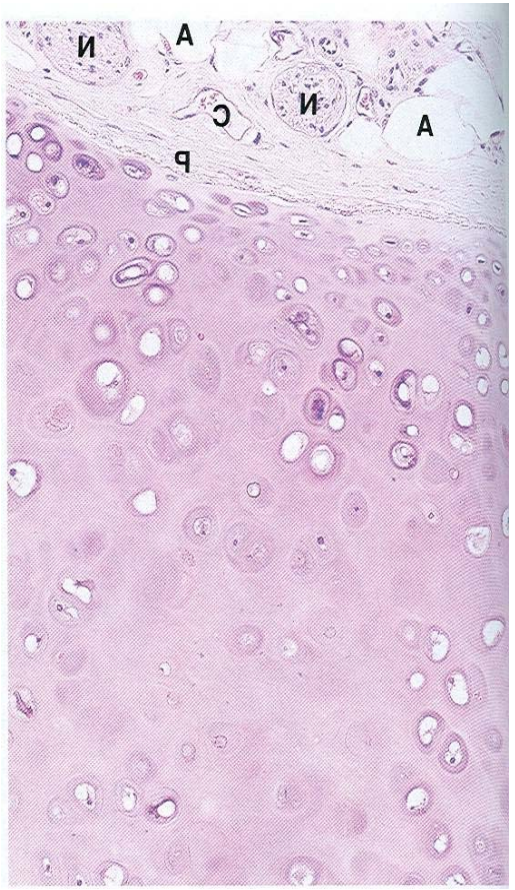
Cartilage

- Specialized dense connective tissue
- Semi rigid ,designed to give support, bear weight & withstand tension ,torsion & bending
- Devoid of blood vessels and not innervated by nerve
- Most of them are calcified in old age.
- Cartilage can grow by interstitial & appositional growth
- Surrounding by perichondrium
- When cartilage calcifies chondrocytes die

Composition of cartilage

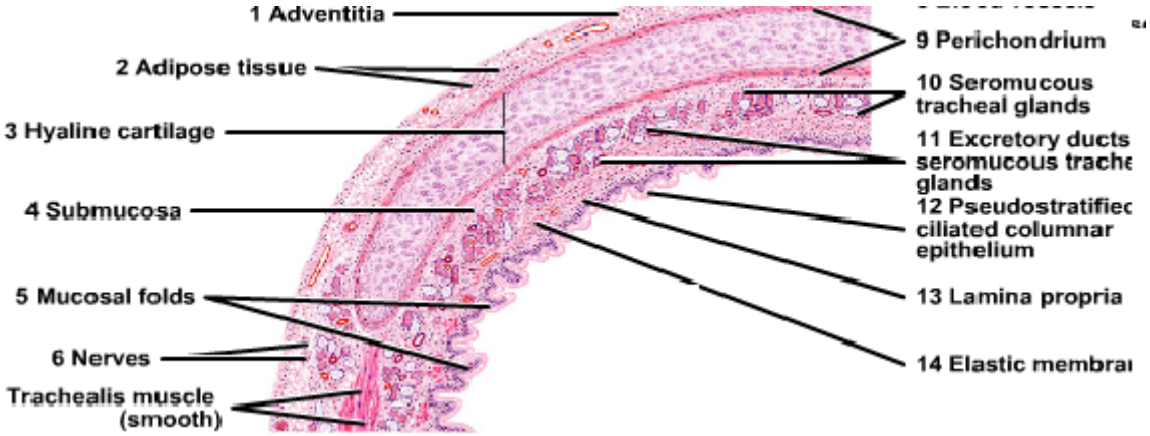
- Perichondrium
- Ground substance-

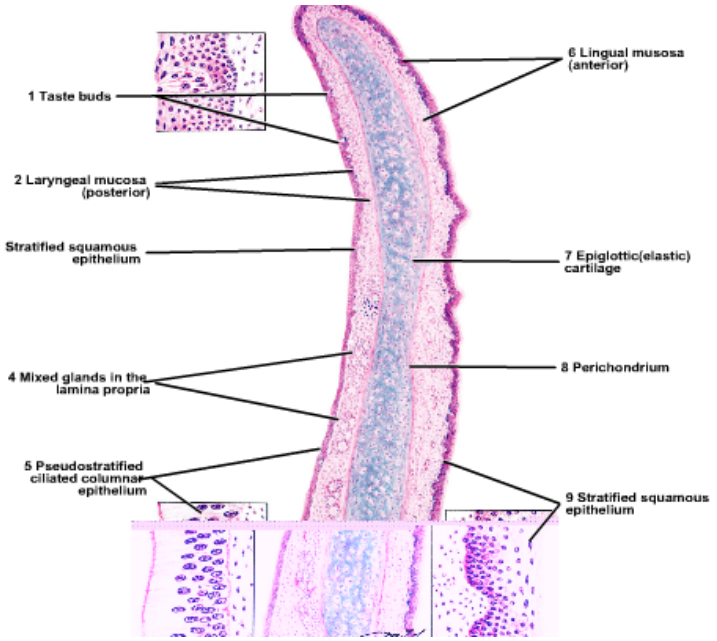
  Highly hydrated. Contains hyaluronic acid, glucoseaminoglycans
- Cells- chondroblasts, chondrocytes
- Fibers- collagen , elastic fibers

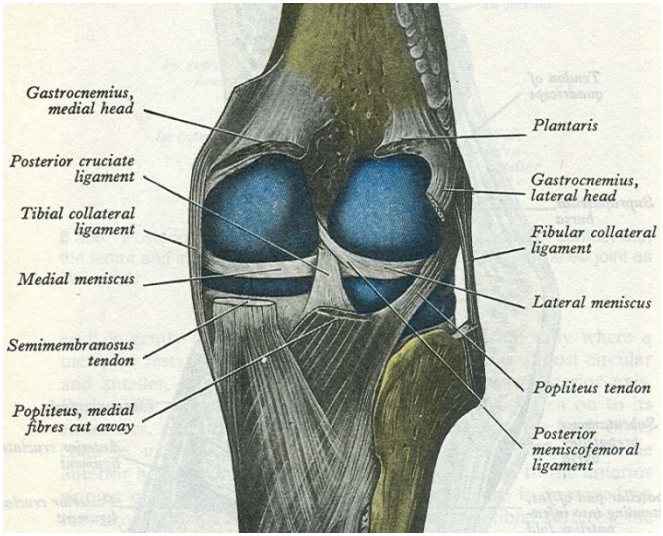


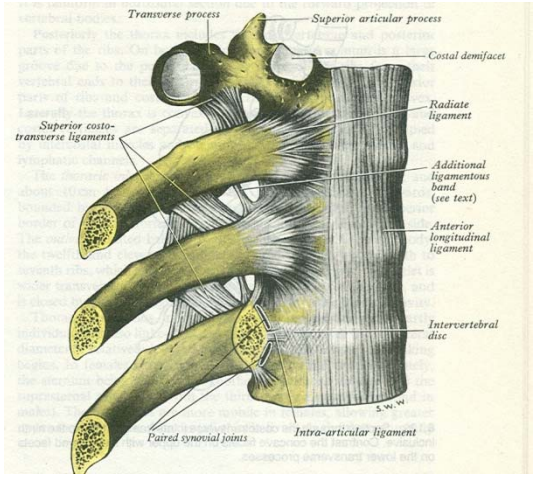
Types of cartilage

- Hyaline cartilage
- Elastic cartilage
- Fibrous cartilage



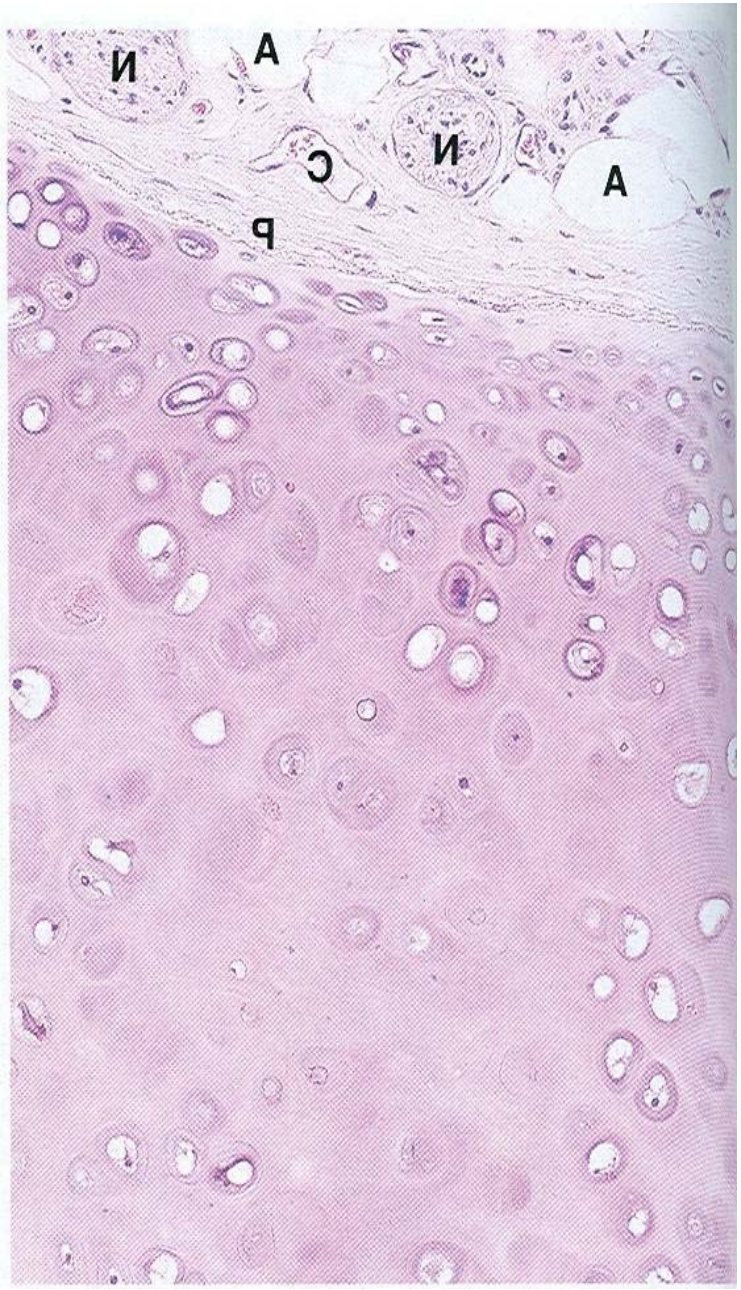






Hyaline cartilage

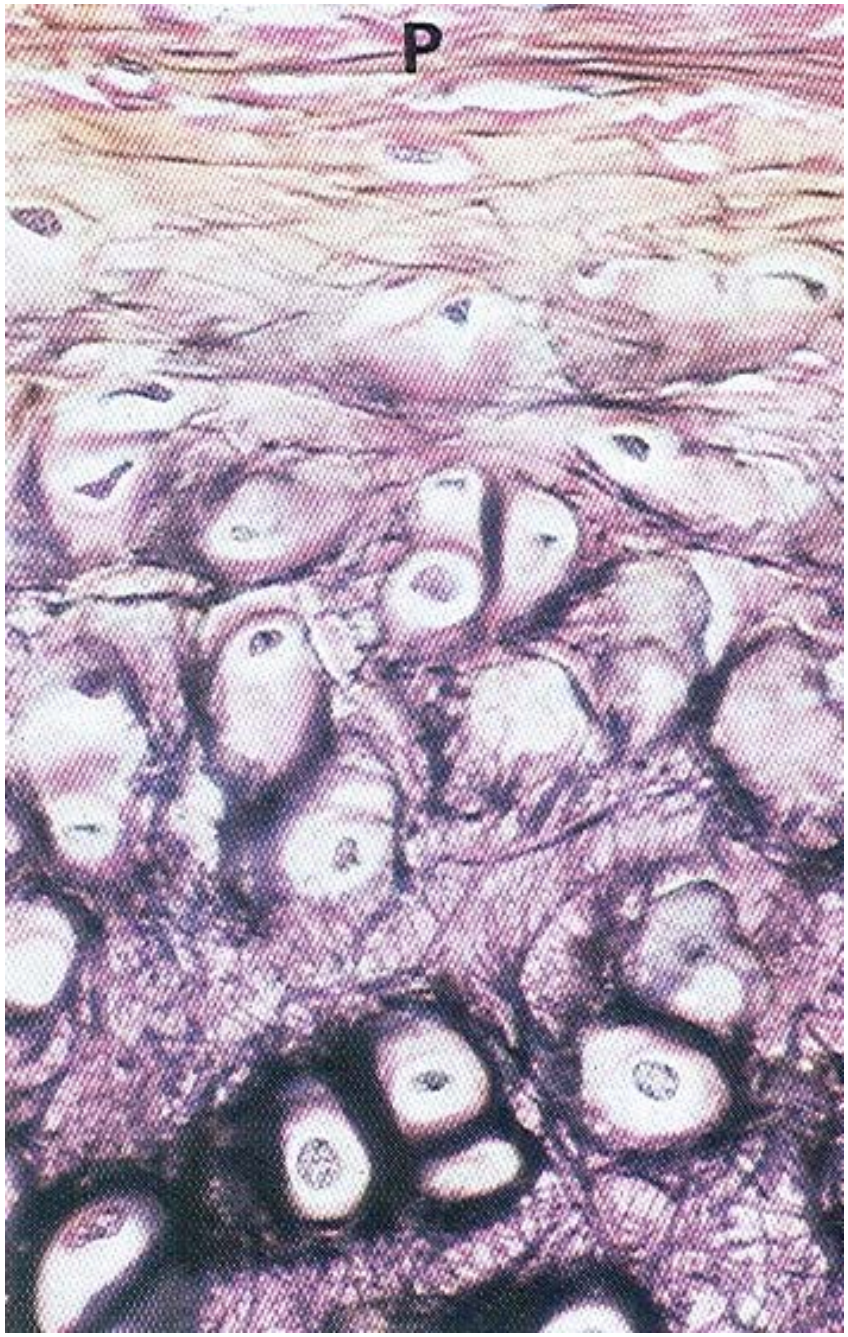
- Most common type
- Makes the skeletal model of most bones in embryo
- Gradually replaced by bone in grown ups except at the articular surface of bones, ends of the ribs, nose, larynx, trachea and bronchi



- In living conditions looks translucent & bluish white in colour
- Covered with perichondrium. Articular cartilage is not covered by perichondrium
- Matrix is homogenous which consists of chondroitin sulphate & collagen fibers
- Cells are chondrocytes arranged in groups in lacunae
- Collagen fibers are not visible in matrix because of the same refractive index as that of matrix

Elastic cartilage

- Present in external ear, epiglottis, auditory tube & few cartilage of larynx
- Covered with perichondrium
- Number of cells are more
- Matrix consist of bundles of branching & anastomosing elastic fibers which give elasticity to the tissue



Fibrous cartilage

- Found in intervertebral disc, pubic symphysis, intrarticular disc of certain joints, menisci of knee joint & articular cartilage of temporomandibular cartilage
- Consists of bundles of collagen fibers embedded in minimal amount of matrix
- Cells are usually placed single in between the bundles of collagen fibers
- Not covered with perichondrium