SNS COLLEGE OF NURSING
COIMBATORE-35

COURSE NAME : **B.Sc., Nursing I Year**

SEMESTER : **I semester**

SUBJECT : **Applied Anatomy**

UNIT : **I**

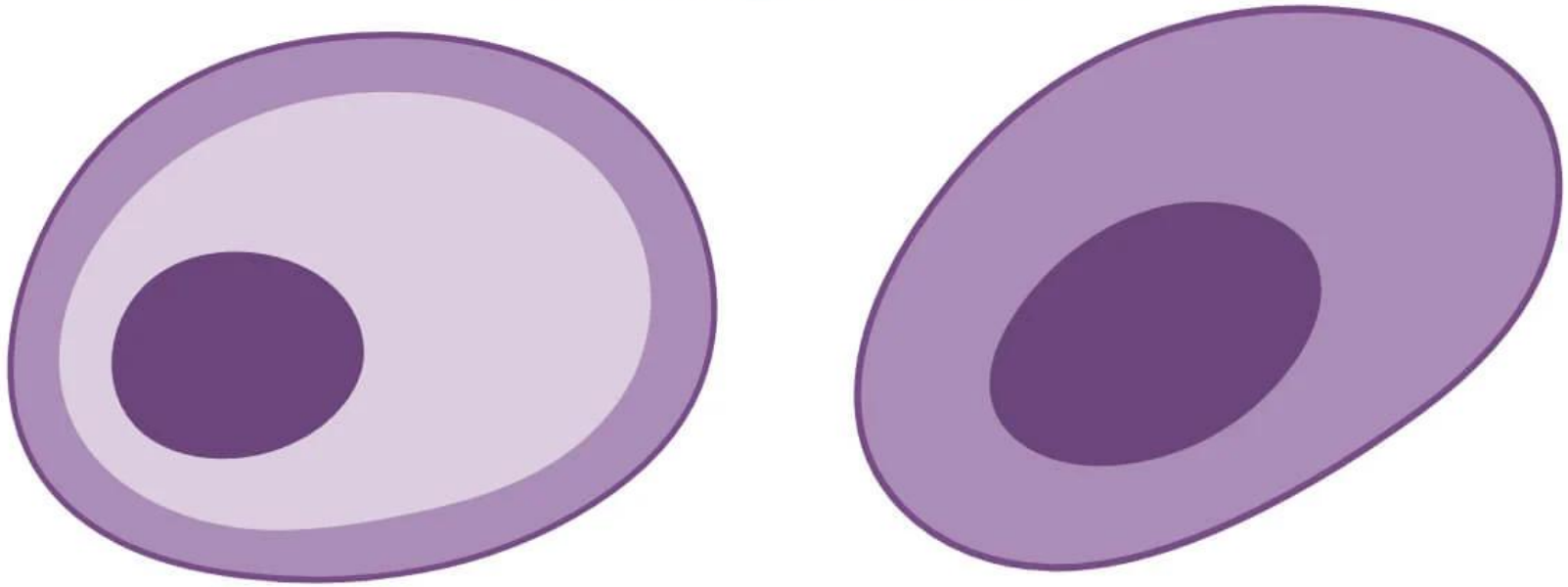
TOPIC : **Cartilage**

PREPARED BY : **Ms.Yazhini K J**

Objectives

At the end of the class students will be able to understand Cartilage and apply knowledge to analyze clinical situations and therapeutic applications

Cartilage Cells

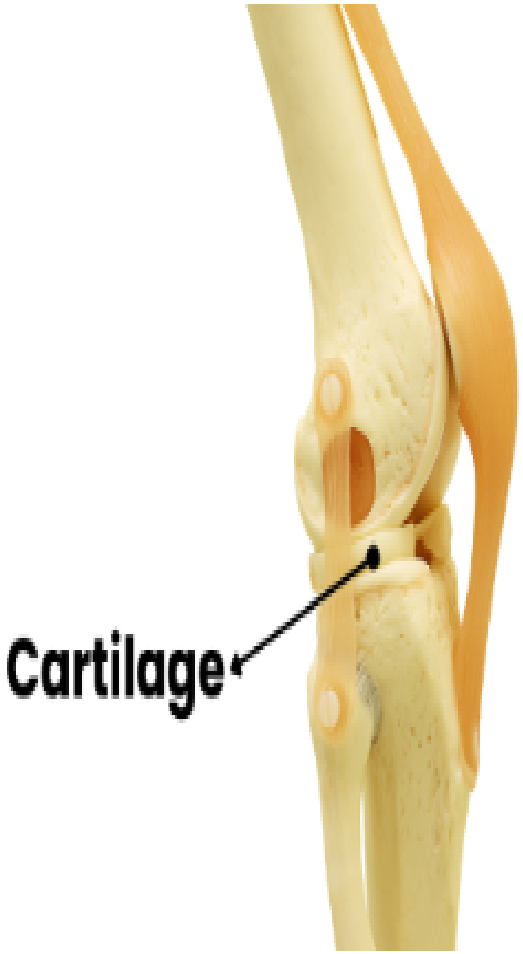


Chondrocyte

Chondroblasts

Definition:

Cartilage is a firm, flexible connective tissue found in various parts of the human body including the joints, rib cage, ear, nose, bronchial tubes, and intervertebral discs.



Function of Cartilage

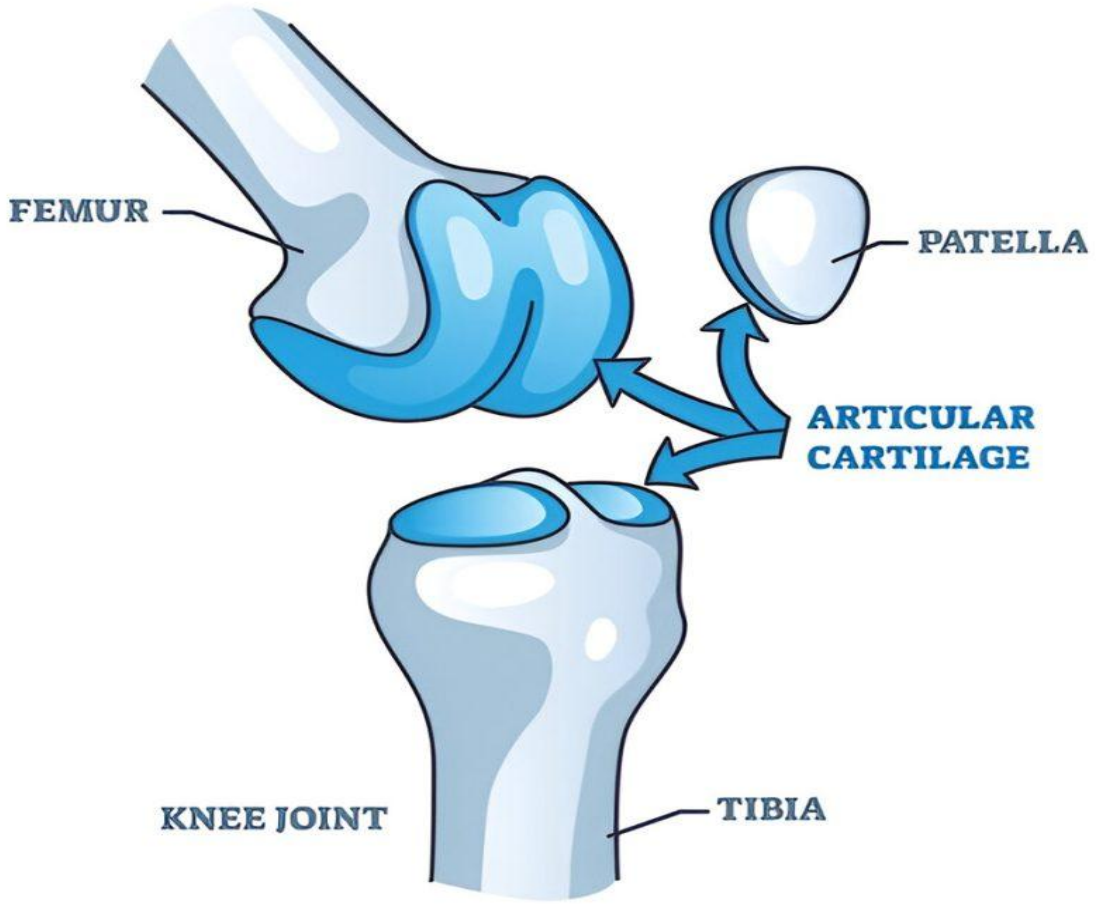
Reducing friction

Joints benefit from cartilage's lubricating properties. In this way, your bones are less likely to bump into one another.

Supporting structures in your body

Cartilage aids in maintaining the shape of your joints while you're in motion.

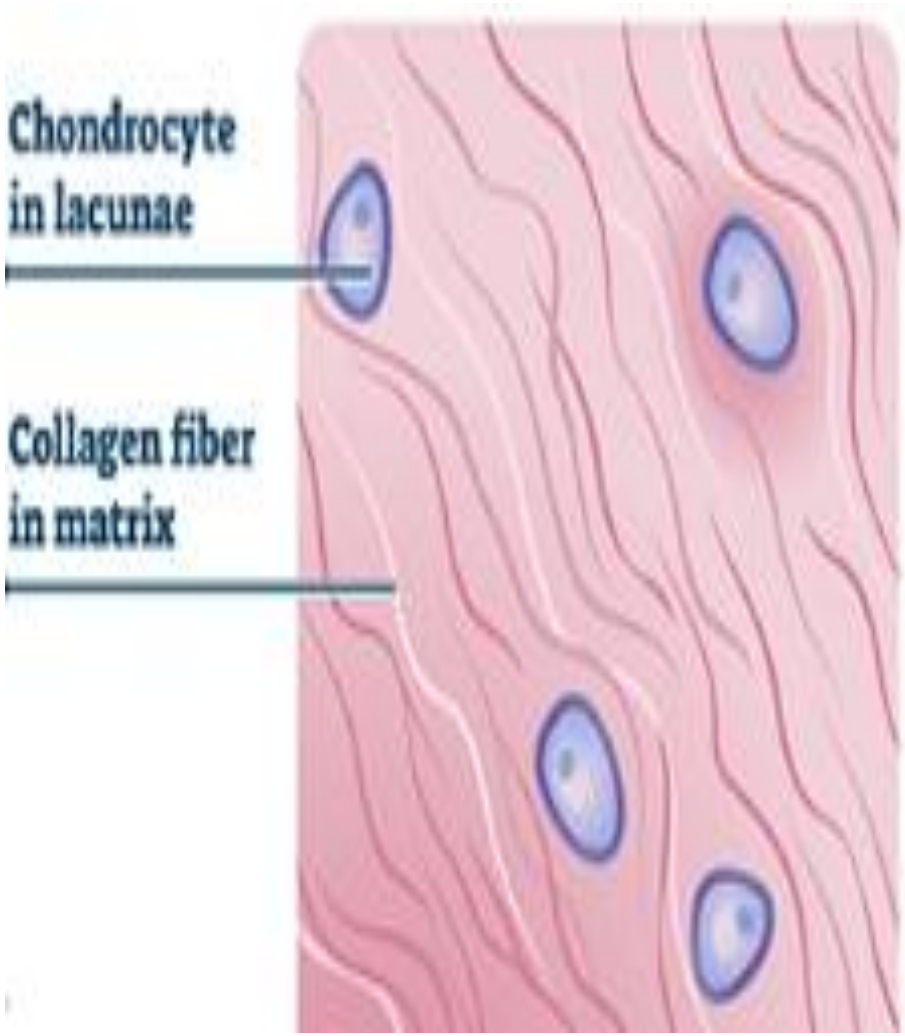
ARTICULAR CARTILAGE



Cartilage in the Human Body

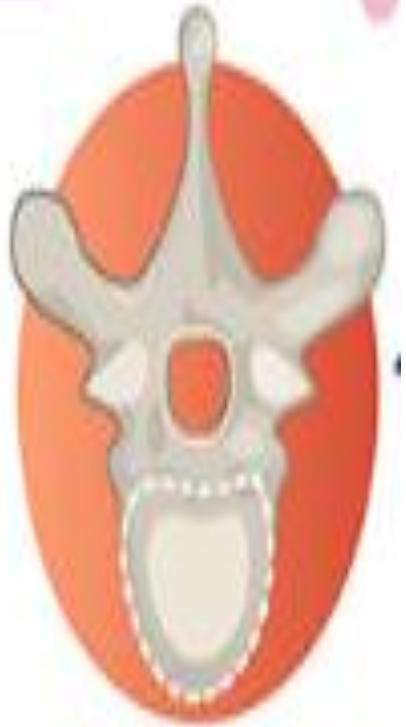
Types of Cartilage

- Hyaline cartilage
- Elastic cartilage
- Fibrocartilage

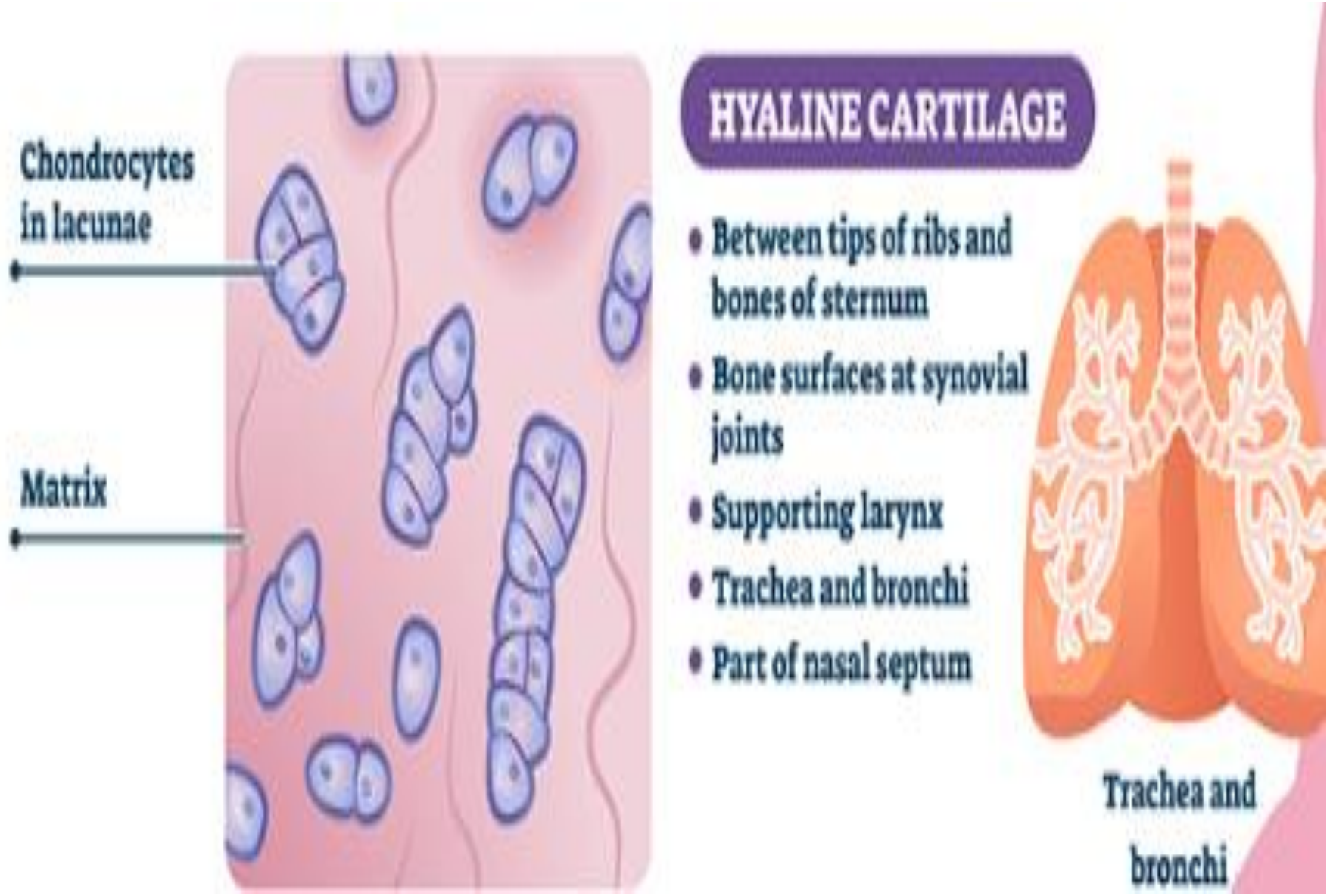


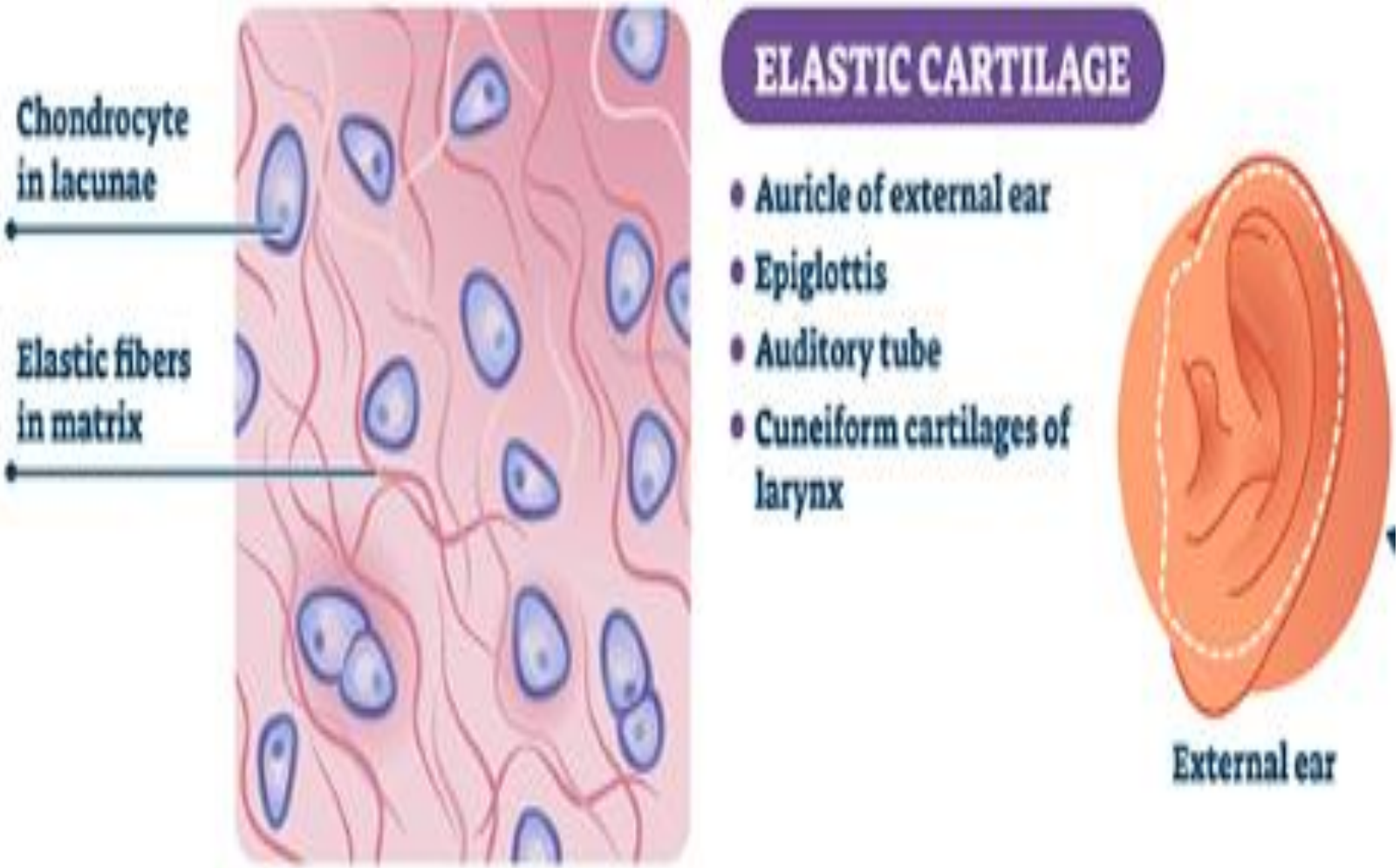
FIBROUS CARTILAGE

- Pads within knee joint
- Between pubic bones of pelvis
- Intervertebral discs

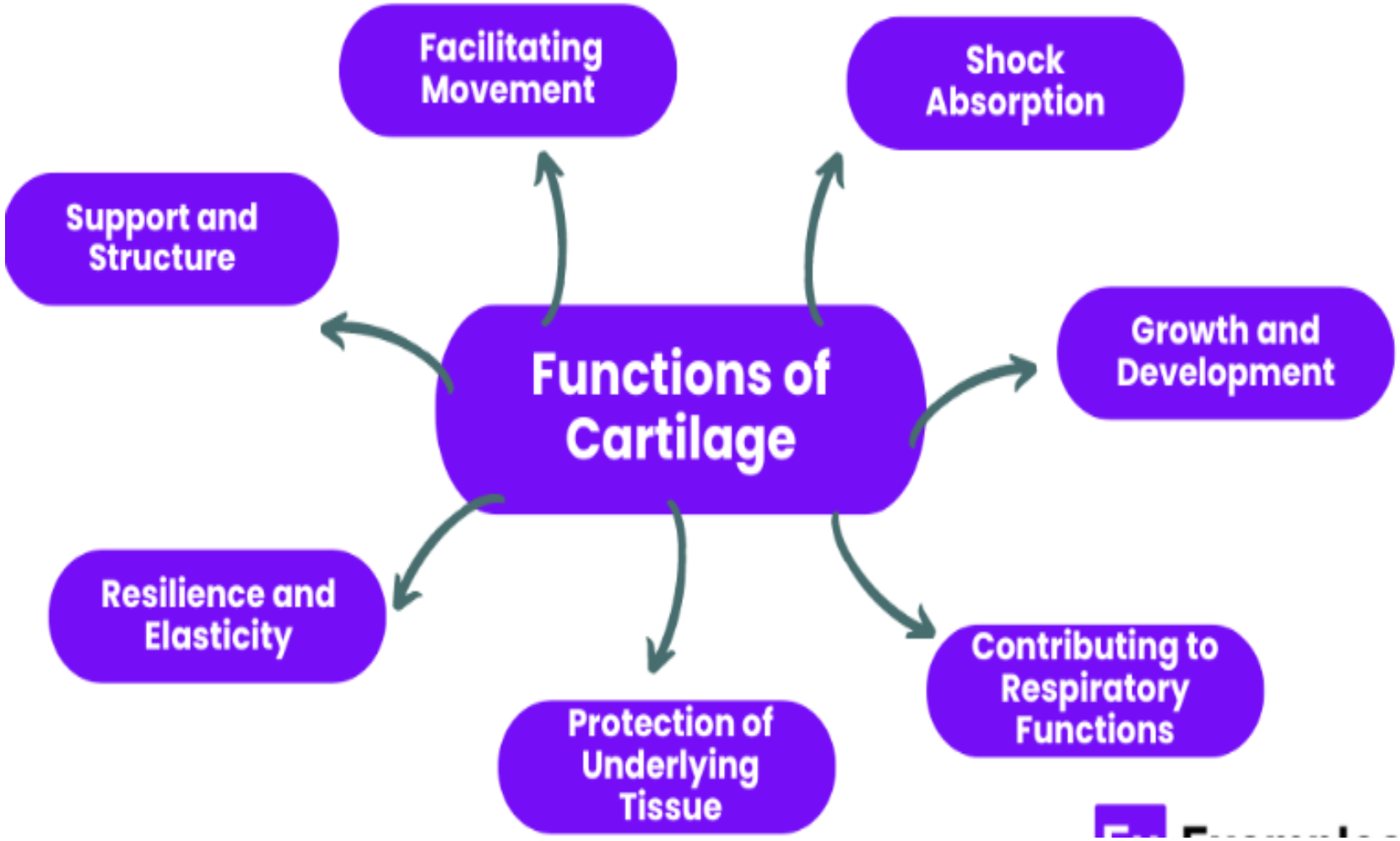


Intervertebral discs

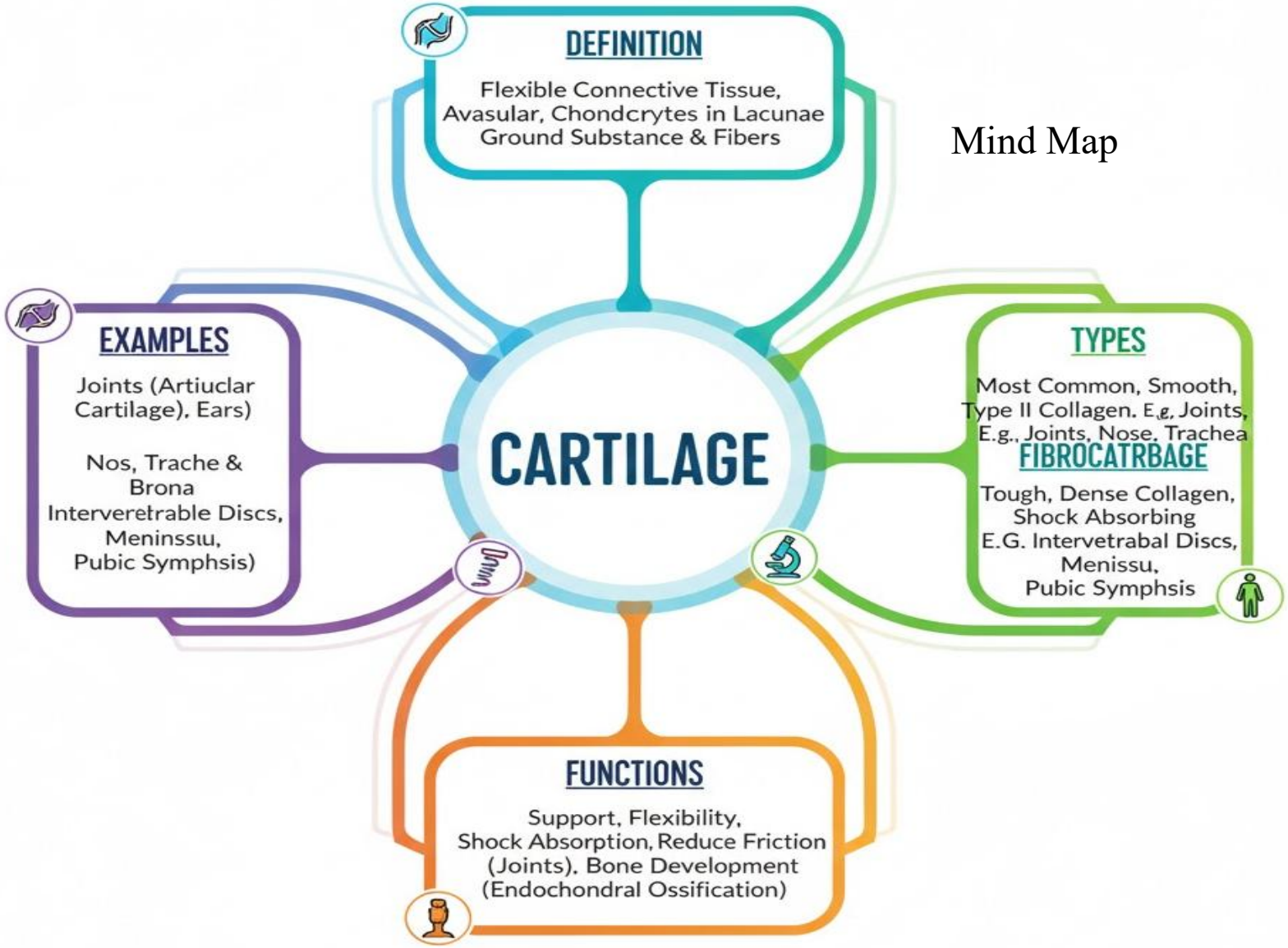

Chondrocytes in lacunae
Matrix
HYALINE CARTILAGE
• Between tips of ribs and bones of sternum
• Bone surfaces at synovial joints
• Supporting larynx
• Trachea and bronchi
• Part of nasal septum
Trachea and bronchi


Chondrocyte in lacunae
Elastic fibers in matrix
ELASTIC CARTILAGE
Auricle of external ear
Epiglottis
Auditory tube
Cuneiform cartilages of larynx
External ear

Comparison between bone and cartilage	
Bone	**Cartilage**
Bone is hard	Cartilage is firm
Matrix contains inflexible substance called ossein	It has chondroitin providing flexibility
Matrix contains calcium salt	Calcium salts are not present
Bone has a rich nerve supply	It does not have any nerve supply
Its nature is vascular	Its nature is avascular
Bone marrow is present	Bone marrow is not present


Facilitating Movement
Shock Absorption
Support and Structure
Functions of Cartilage
Growth and Development
Resilience and Elasticity
Protection of Underlying Tissue
Contributing to Respiratory Functions

Mind Map


DEFINITION
Flexible Connective Tissue, Avasular, Chondcrytes in Lacunae Ground Substance & Fibers
EXAMPLES
Joints (Artiuclar Cartilage), Ears)
Nos, Trache & Brona Interveretrable Discs, Meninssiu, Pubic Symphsis)
CARTILAGE
TYPES
Most Common, Smooth, Type II Collagen. E.g, Joints, E.g., Joints, Nose, Trachea
FIBROCATRBAGE
Tough, Dense Collagen, Shock Absorbing E.G. Intervetrabal Discs, Menissu, Pubic Symphsis
FUNCTIONS
Support, Flexibility, Shock Absorption, Reduce Friction (Joints), Bone Development (Endochondral Ossification)

References

1. Waugh, A., & Grant, A. (2022). Ross & Wilson pocket reference guide to anatomy and physiology (3rd ed.). Elsevier.

2. Ashalata, P. R., & Vaz, N. A. (2024). Textbook of applied anatomy & physiology for nurses(3rd ed., Vols. 1–2). Elsevier

Thank You