



HANSRAJ MODEL SCHOOL

PUNJABI BAGH, NEW DELHI

CLASS - IX

SUBJECT - BIOLOGY

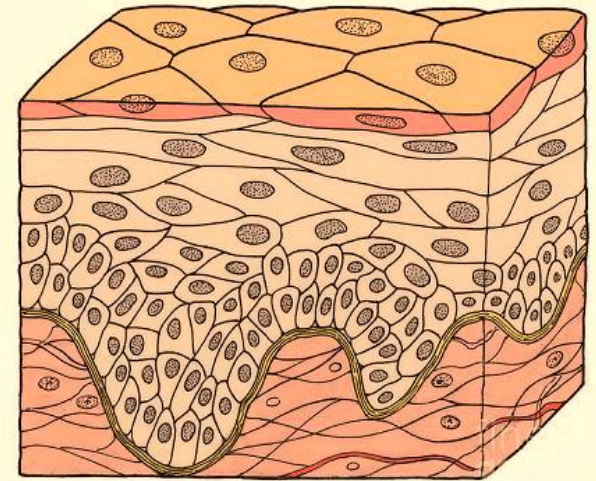
TOPIC - L-6, TISSUES
(MODULE-3)

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➤ TYPES OF ANIMAL TISSUES

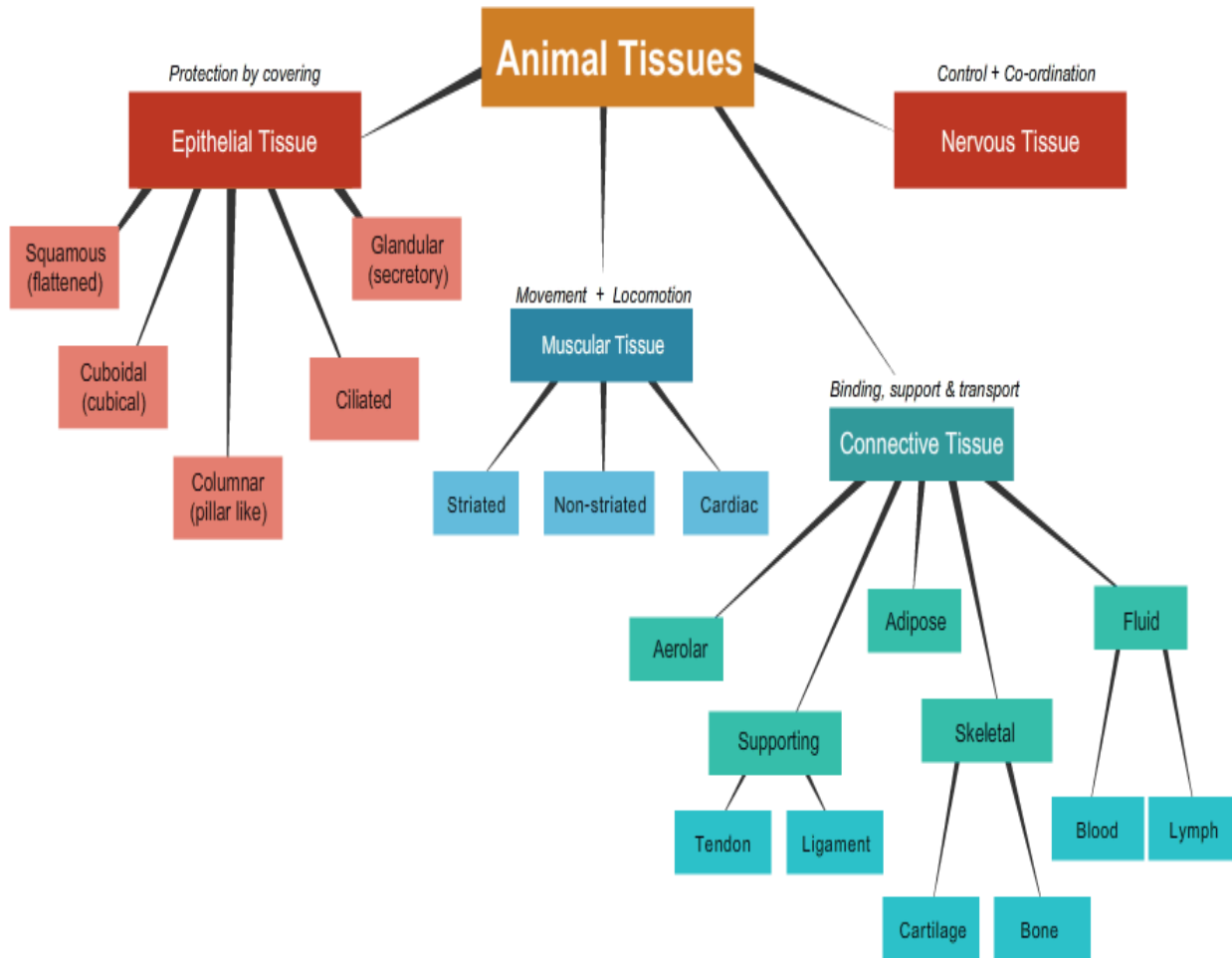
➤ EPITHELIAL TISSUES

- DEFINITION
- CHARACTERISTICS
- SIGNIFICANCE
- TYPES- STRUCTURE, LOCATION AND FUNCTION



ANIMAL TISSUE

• TYPES OF ANIMAL TISSUES



Four types of tissue



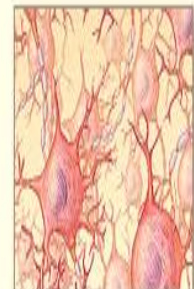
Connective tissue



Epithelial tissue

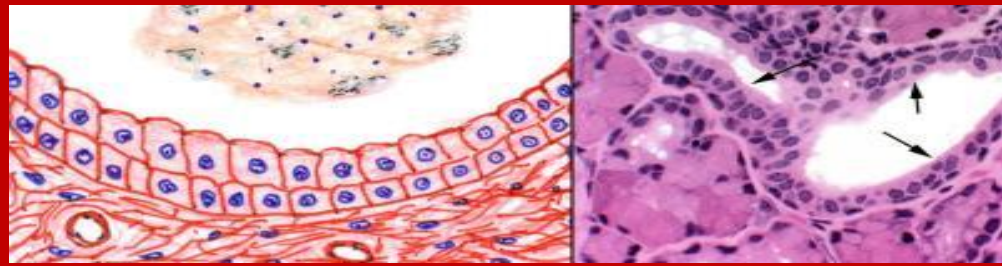


Muscle tissue



Nervous tissue

EPITHELIAL TISSUE



DEFINITION : The covering or protective tissues in the animal body are epithelial tissues.

LOCATION : The skin, the lining of the mouth, the lining of the blood vessels, lung alveoli and kidney tubules are all made of epithelial tissue.

STRUCTURE

- Epithelial tissue cells are tightly packed and form a continuous sheet.
- They have only a **small amount of cementing material** between them and almost **no intercellular spaces**.
- Regardless of the type, all epithelium is usually separated from the underlying tissue by an extracellular **fibrous basement membrane**.
- **SIGNIFICANCE**-Epithelium covers most organs and cavities within the body.
- It also forms a barrier to keep different body systems separate.
- The permeability of the cells of various epithelia play an important role in regulating the exchange of materials between the body and the external environment and also between different parts of the body.

TYPES OF EPITHELIAL TISSUE

EPITHELIAL TISSUE

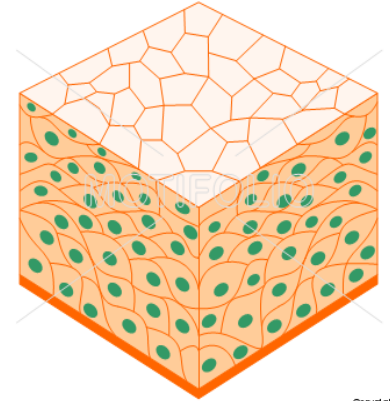
SQUAMOUS
EPITHELIUM

CUBOIDAL
EPITHELIUM

STRIATED
SQUAMOUS
EPITHELIUM

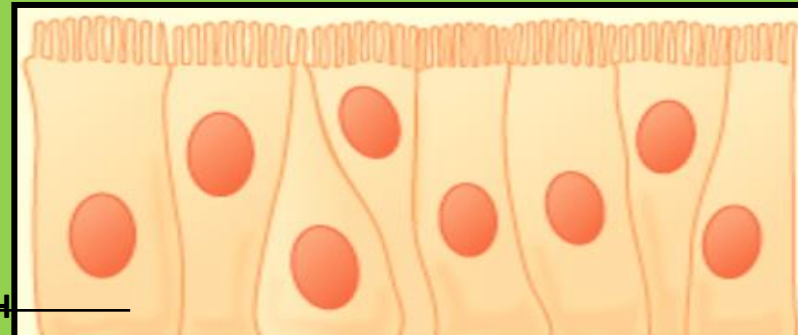
COLUMNAR
EPITHELIUM

Stratified squamous epithelium



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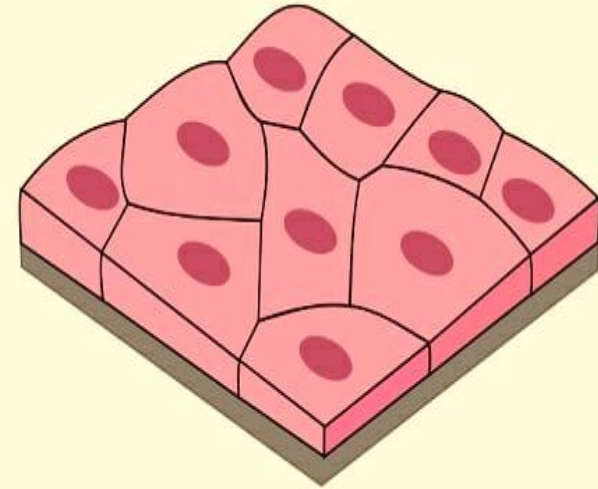
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SQUAMOUS EPITHELIUM

STRUCTURE

- Cells are thin, flat and irregular which fit like floor tiles to form delicate lining.
- Nuclei lie in centre of the cells.

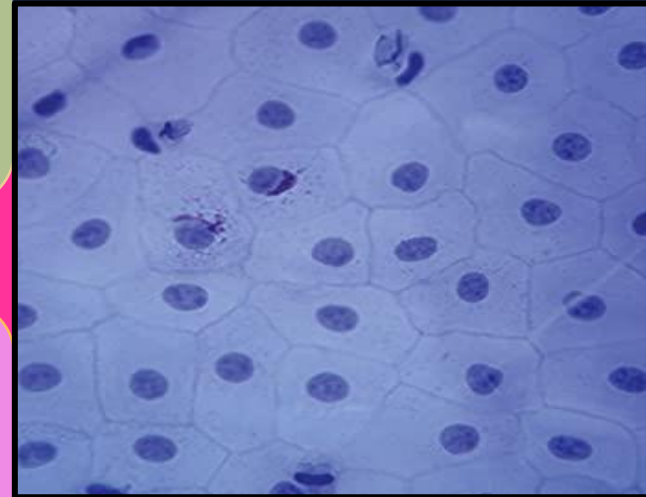


LOCATION

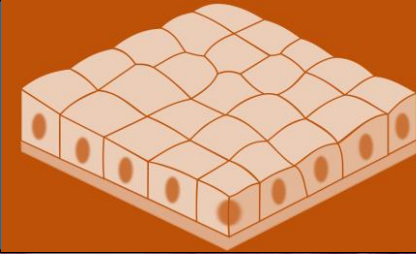
- Oesophagus
- Lining of mouth
- Alveoli of the lungs
- Blood vessels

FUNCTIONS

- Protects the underlying tissue from injury and germs.
- Responsible for exchange of gases in lungs.
- Also does exchange of materials between cells and blood.



CUBOIDAL EPITHELIUM



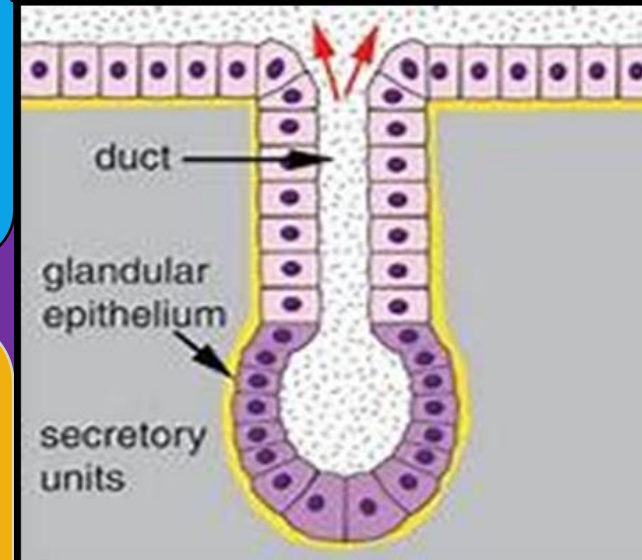
STRUCTURE

- Cells are cuboidal in shape
- Nuclei lie in centre of the cells



LOCATION

- Kidney tubules
- Ducts of salivary glands



FUNCTIONS

- Gives mechanical support
- At times the epithelial tissue folds and forms a gland that secretes substances.
- Such epithelium is called as glandular epithelium.

COLUMNAR EPITHELIUM

STRUCTURE

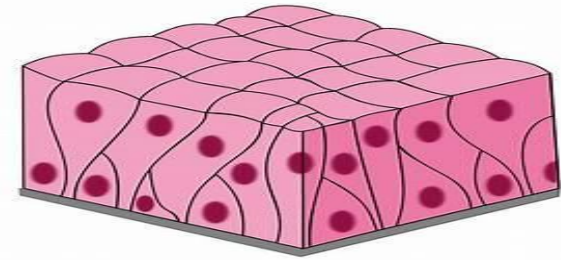
- Cells are more tall and less wide (pillar like) placed side by side.
- Nucleus is situated near the base.

LOCATION

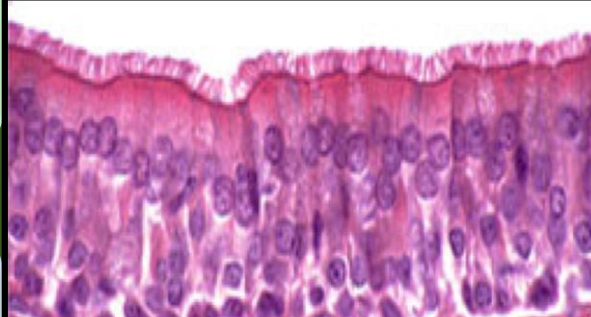
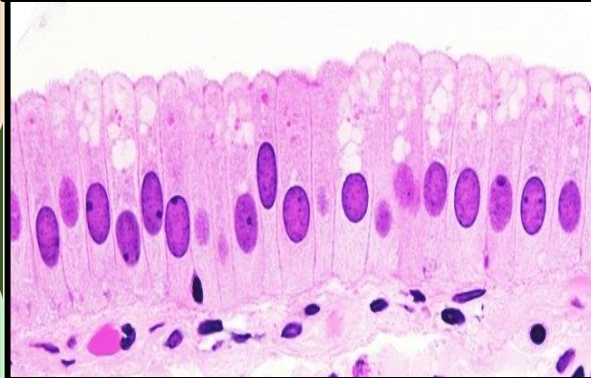
- Inner lining of intestine
- Oviducts
- Uterus
- Respiratory tract

FUNCTIONS

- It helps in absorption, secretion and excretion.
- In respiratory tract, cells have cilia that can move and push the mucus forward to clear it. This type of epithelium is called as CILIATED COLUMNAR EPITHELIUM.



SIMPLE COLUMNAR EPITHELIUM



CILIATED COLUMNAR EPITHELIUM

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STRIATED SQUAMOUS EPITHELIUM

STRUCTURE

- Squamous flat cells arranged in a pattern of layers.

LOCATION

- Skin
- Tongue
- Pharynx

FUNCTION

- It protects the body from wear and tear.

