

Animal tissues

```
graph LR; A[Animal tissues] --- B[Epithelial tissue]; A --- C[Connective tissue]; A --- D[Muscle tissue]; A --- E[Nerve tissue];
```

Epithelial tissue

Connective tissue

Muscle tissue

Nerve tissue

ANIMAL TISSUES- EPITHELIAL TISSUES

Specialised to form linings that cover internal and external surfaces

- ⊙ Cells are arranged tightly against one another with no intercellular spaces and little material between the cells.
- ⊙ All simple epithelial tissue consists of a single cellular layer that rests on a basal membrane
- ⊙ Four types:
 - Squamous epithelium
 - Cuboidal epithelium
 - Columnar epithelium
 - Ciliated epithelium

SQUAMOUS EPITHELIUM

Location

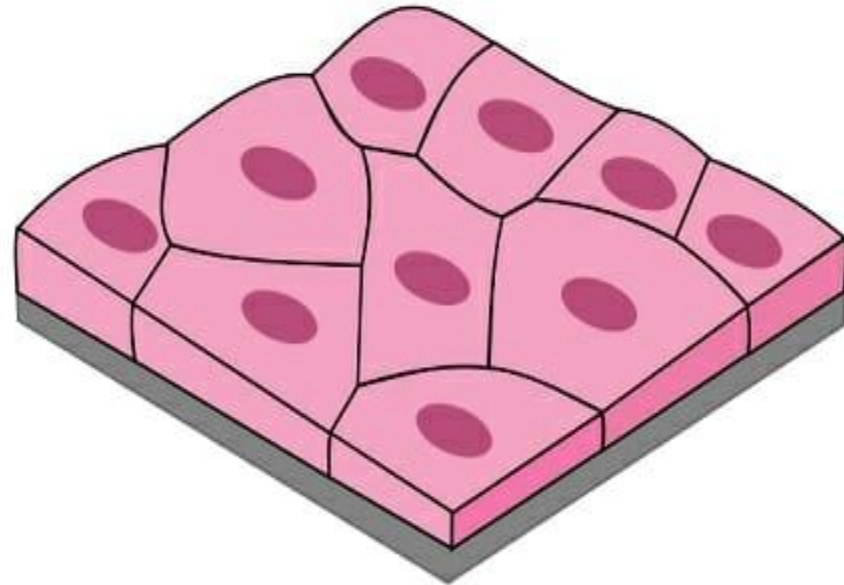
- ⦿ Lines the internal walls of cavities, e.g. blood vessels, heart, alveoli, mouth, oesophagus.

Structure

- ⦿ A single layer of thin flat cells
- ⦿ Cells are tightly packed and form a mosaic pattern
- ⦿ Nucleus is horizontally flattened and has an oval shape

Functions

- ⦿ Protects underlying tissues
- ⦿ Permeable to gasses and liquids
- ⦿ Prevents friction



CUBOIDAL EPITHELIUM

Location:

Lines the glands that secrete or absorb substances.

In the Lining of the thyroid gland, sweat glands and salivary glands it secretes substances

When it forms the inner lining of renal tubules, substances are absorbed.

The embryonic epithelium also consists of cuboidal epithelium

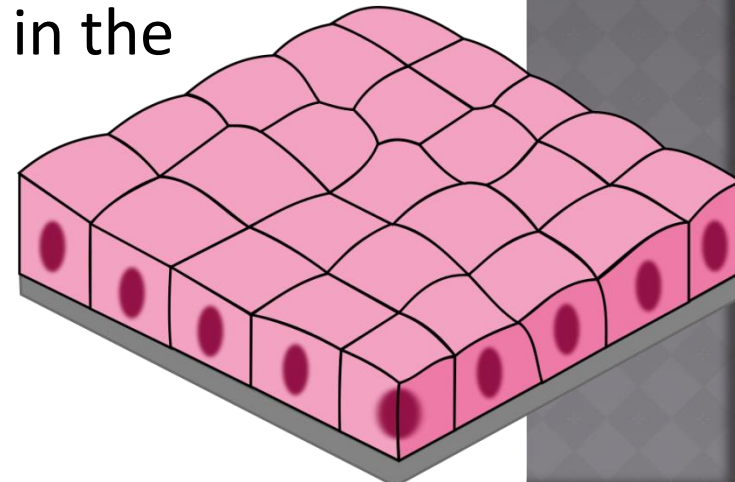
Structure: cells are cube shaped

cell nuclei are round and occur in the centre of the cell

- Functions:

Secretion

Absorption



COLUMNAR EPITHELIUM

Location:

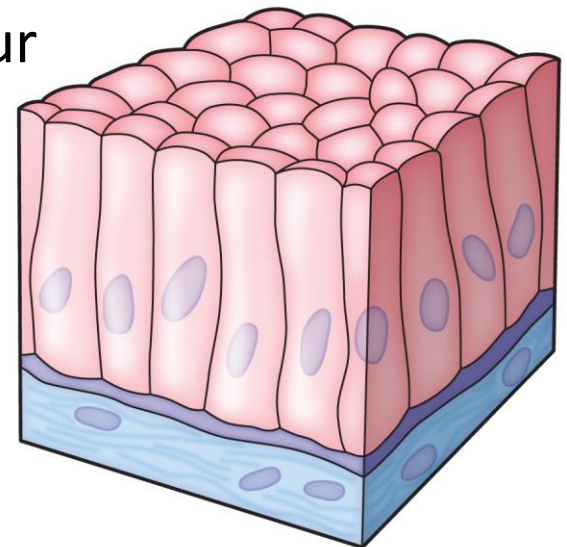
- ◉ Lines the alimentary canal, especially stomach and small intestine
- ◉ Some perform a sensory function in the nose, ears and taste-buds on the tongue

Structure:

- ◉ Cells are elongated and column-shaped
- ◉ Cell nuclei are elongated and occur near the base of the cells
- ◉ Goblet cells, which secrete mucus, often occur between columnar epithelial cells

Functions:

- ◉ Absorbtion
- ◉ Secretion
- ◉ Sensory



CILIATED EPITHELIUM

Location

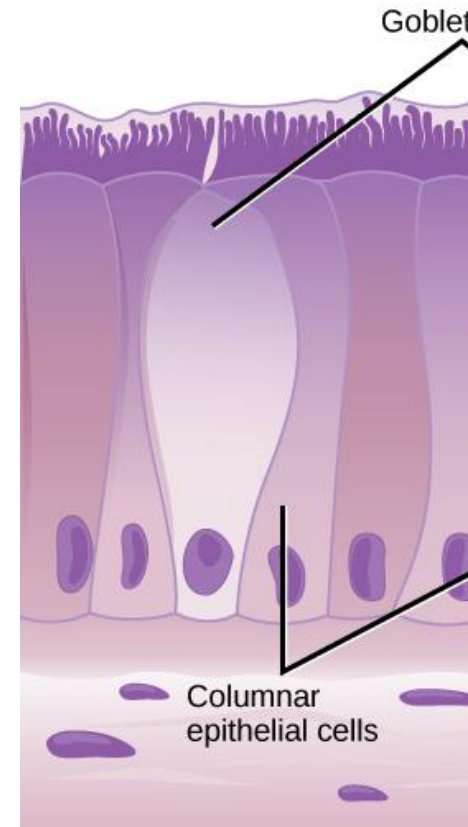
- ◉ This type of tissue lines the nasal cavities, trachea and bronchi in the lungs
- ◉ Also occurs in sensory organs e.g. the ear
- ◉ As well as in the Fallopian tubes and uterus

Structure

- ◉ Columnar epithelial cells with exceptionally fine hairs known as cilia
- ◉ Cilia perform fast rhythmic wave-like movements in a specific direction
- ◉ Also contain goblet cells

Function

- ◉ Dust trapped in mucus, moved by cilia away from the lungs
- ◉ Helps detect stimuli in sensory organs
- ◉ Cilia ensure movement of the ovum in the Fallopian tube and the uterus



CLASS ACTIVITY – ANIMAL EPITHELIAL TISSUE

1. Name the different types of animal epithelial tissue
2. What is squamous tissue that line blood vessels called?
3. Squamous tissue that line the heart is called?
4. Where do we find cuboidal epithelium?
5. Name the similarities in the build of the columnar and ciliated epithelium