

A large, multi-pointed starburst shape in a light purple color with a thin red outline. The starburst is centered on a dark blue background. The word "Biology" is written in a bold, red, sans-serif font with a blue drop shadow, centered within the starburst.

Biology

Histology: is the study of the tissues of the body.

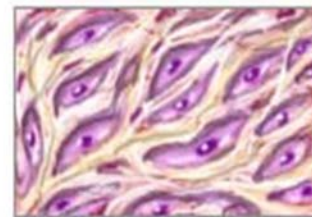
Tissue: group of similar cells combined to perform a common function.

The human body is composed of only 4

basic types of tissue:

- 1. epithelial tissues.**
- 2. connective tissues.**
- 3. muscular tissues.**
- 4. nervous tissues.**

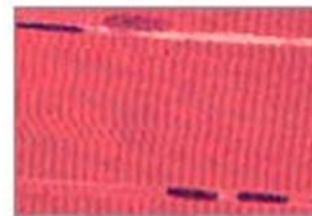
Four types of tissue



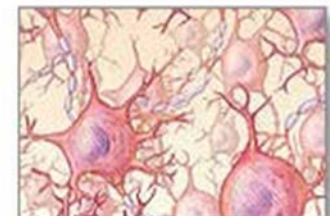
Connective tissue



Epithelial tissue



Muscle tissue



Nervous tissue

Epithelial Tissues:

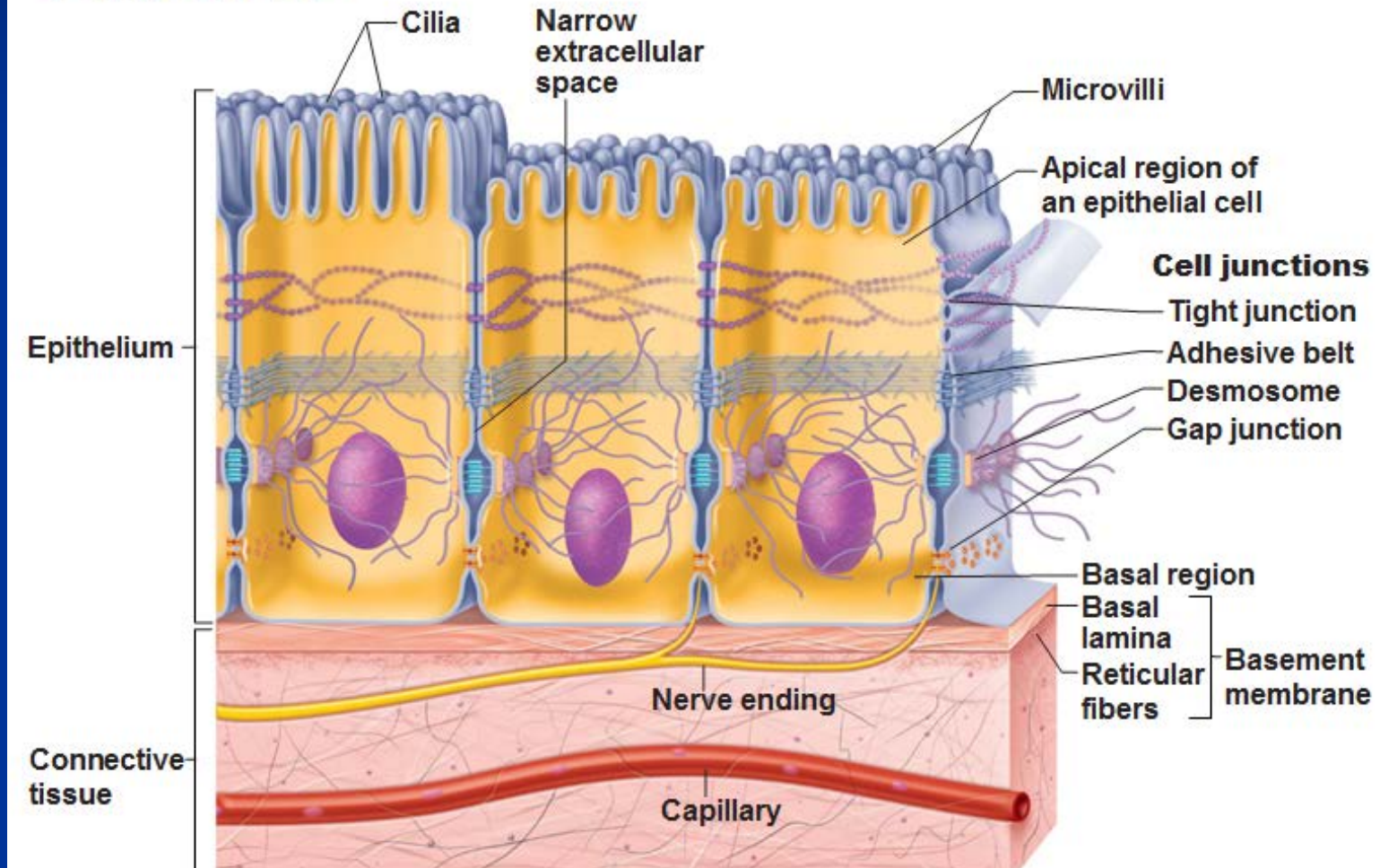
Features of epithelium:

Functions of epithelium:

1. Protection:
2. Sensation
3. Secretion
4. Absorption:
5. Cellular transport:

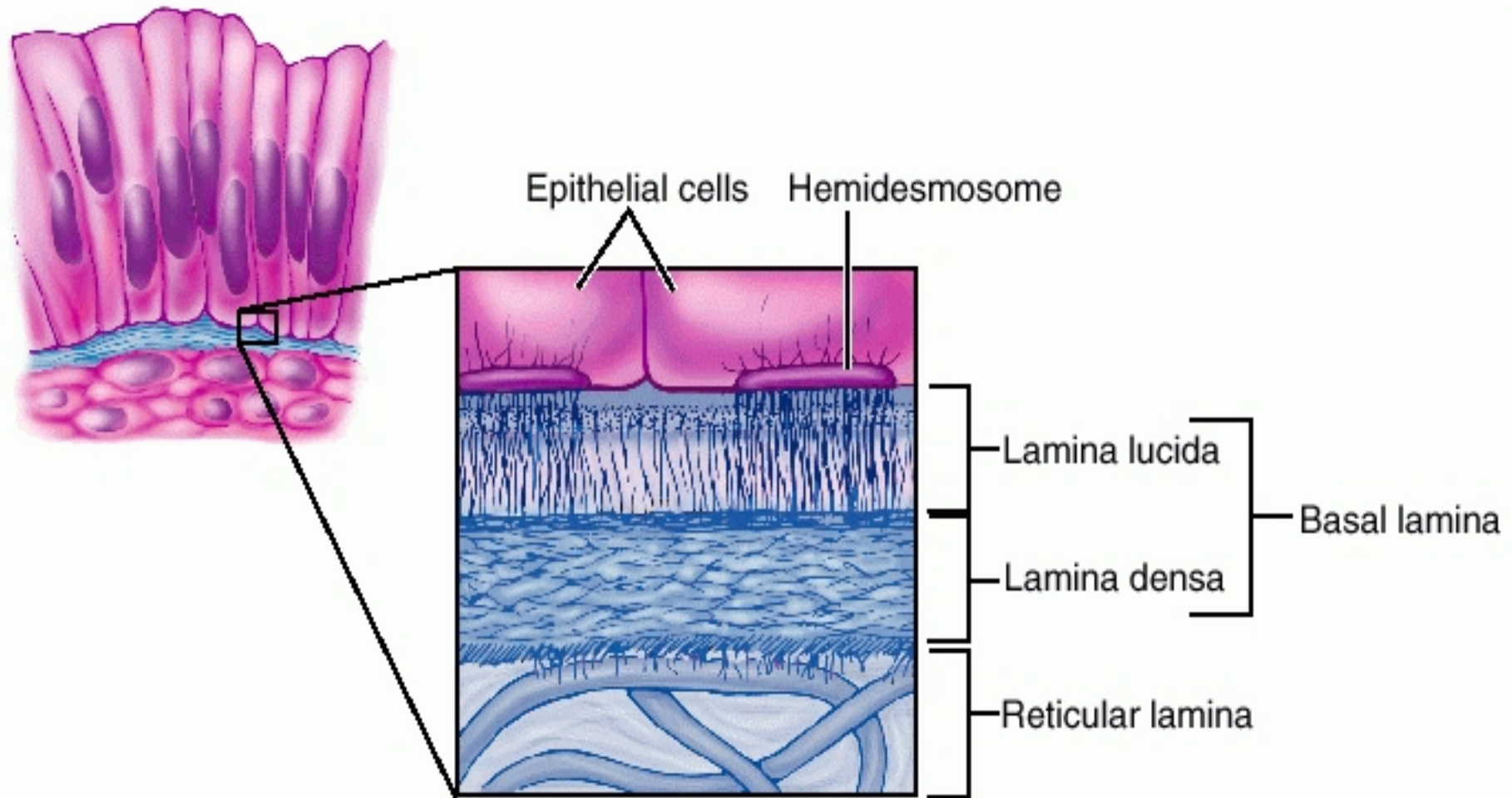
Polarity:

Special Characteristics of Epithelia-Cell Junctions



Basal lamina:

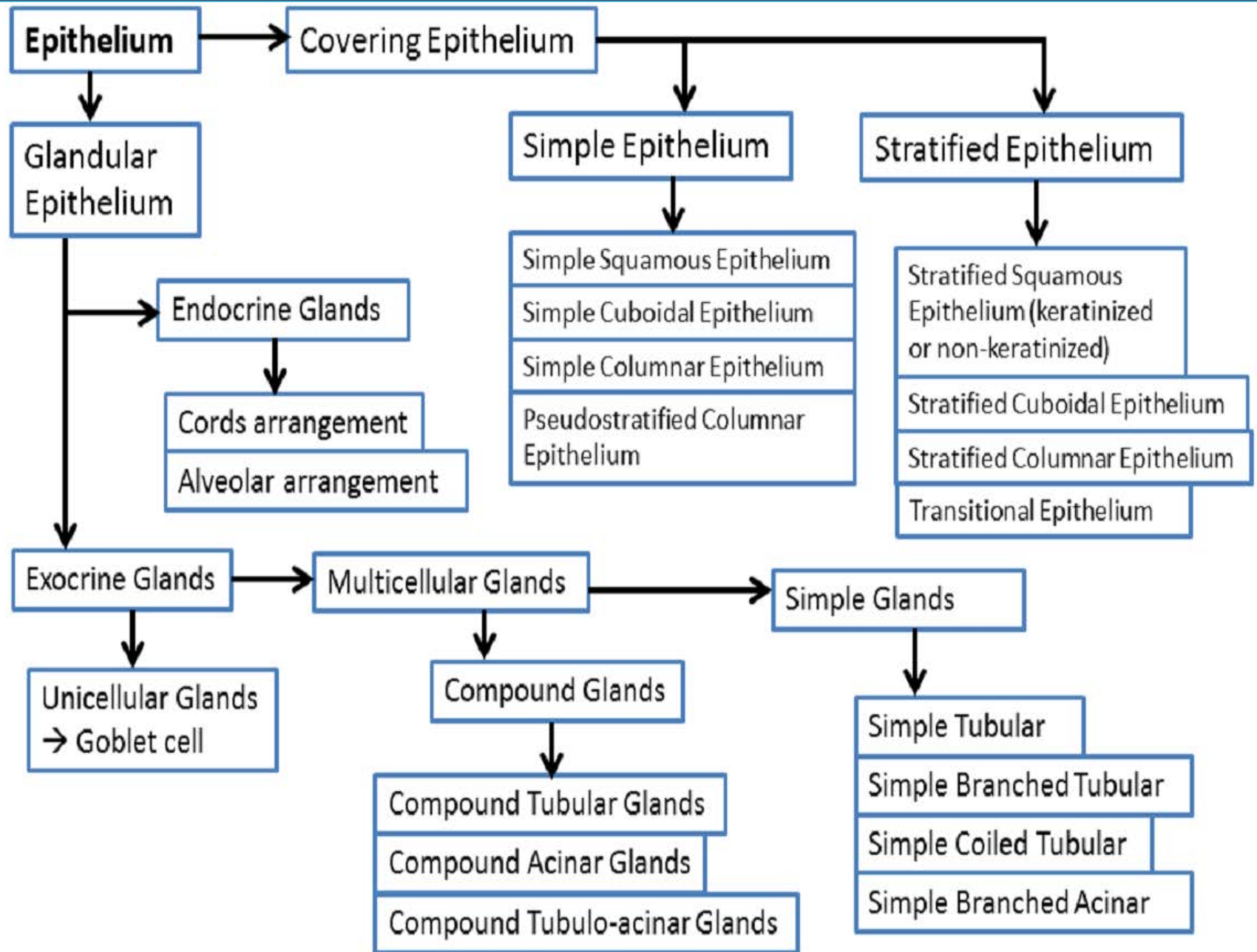
1. lamina densa: a delicate network of fine fibrils.
2. lamina lucida: which appear to be transparent.



➤ **Basement membrane:**

Functions of basal lamina:

1. it is considered as a molecular filter and as a flexible, firm support for the overlying epithelium.
2. provide a selective barrier between connective tissue and other cells.
3. the presence of the basal lamina around a muscle cell is necessary for the establishment of new neuromuscular junctions.
4. the ability to influence cell polarity.
5. regulate cell proliferation and differentiation by binding with growth factors.
6. influence cell metabolism.

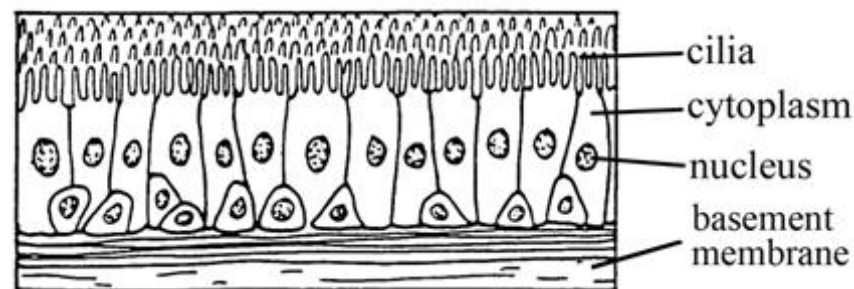
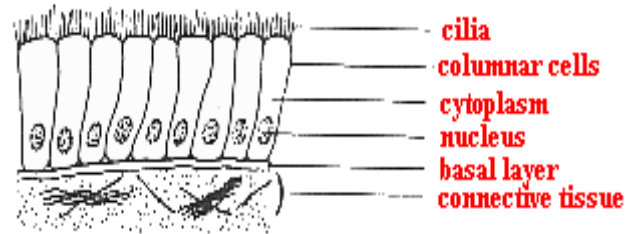
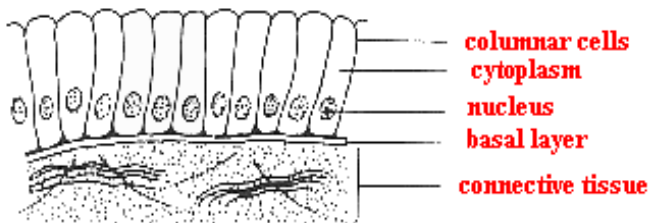
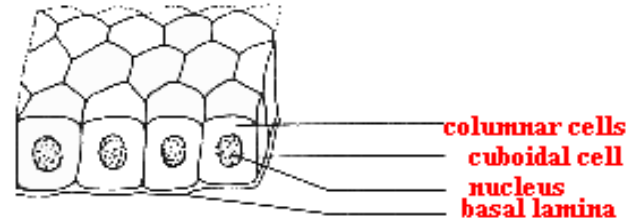
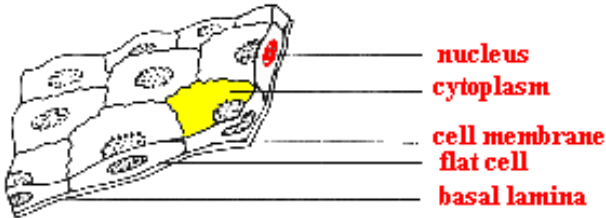


Classification of epithelia:

**covering epithelium.
glandular epithelium.**

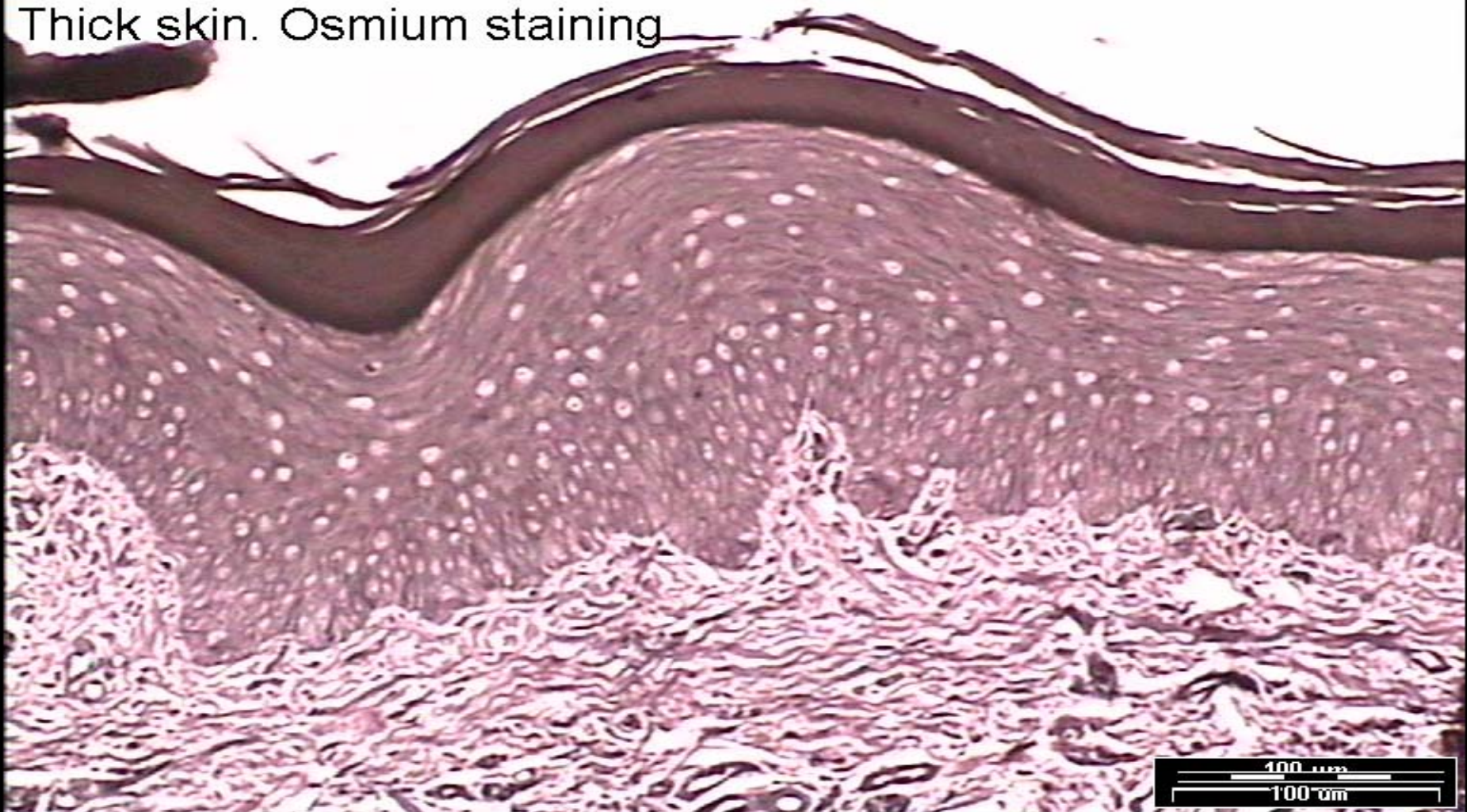
Covering epithelium:

Simple epithelia:

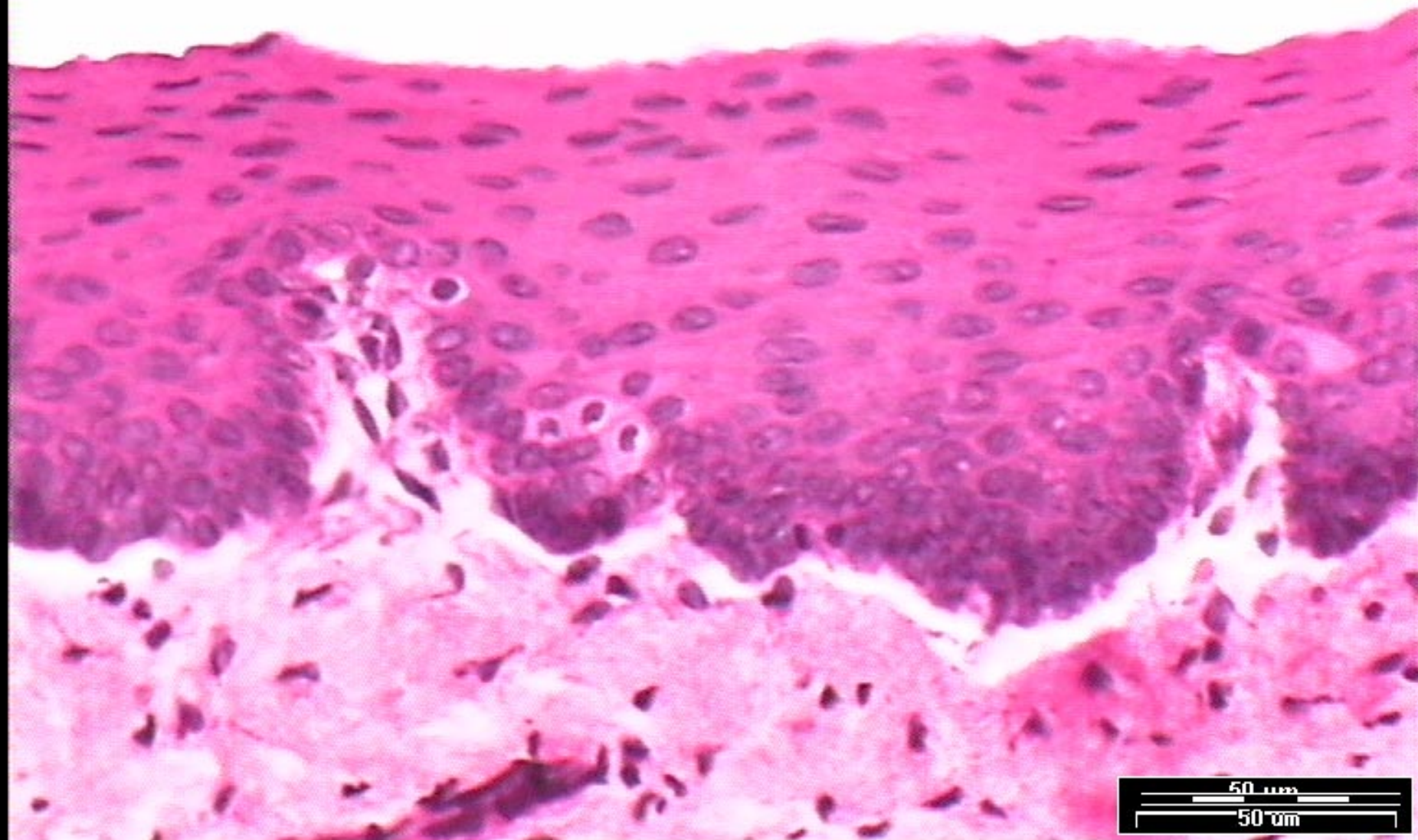


Stratified epithelium:

Stratified Squamous Epithelium
with Keratin
Thick skin. Osmium staining



Stratified Squamous Epithelium
Tongue



Stratified epithelium:

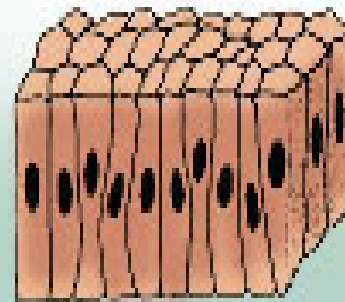
Types of Epithelium



Simple squamous

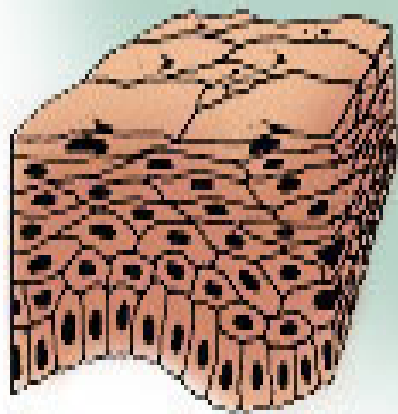


Simple cuboidal

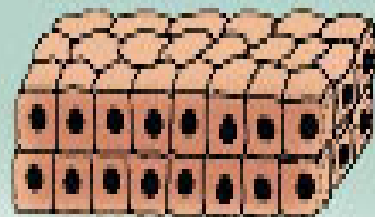


Simple columnar

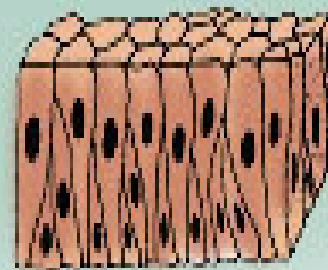
Transitional



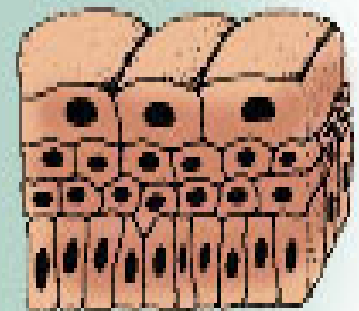
Stratified squamous



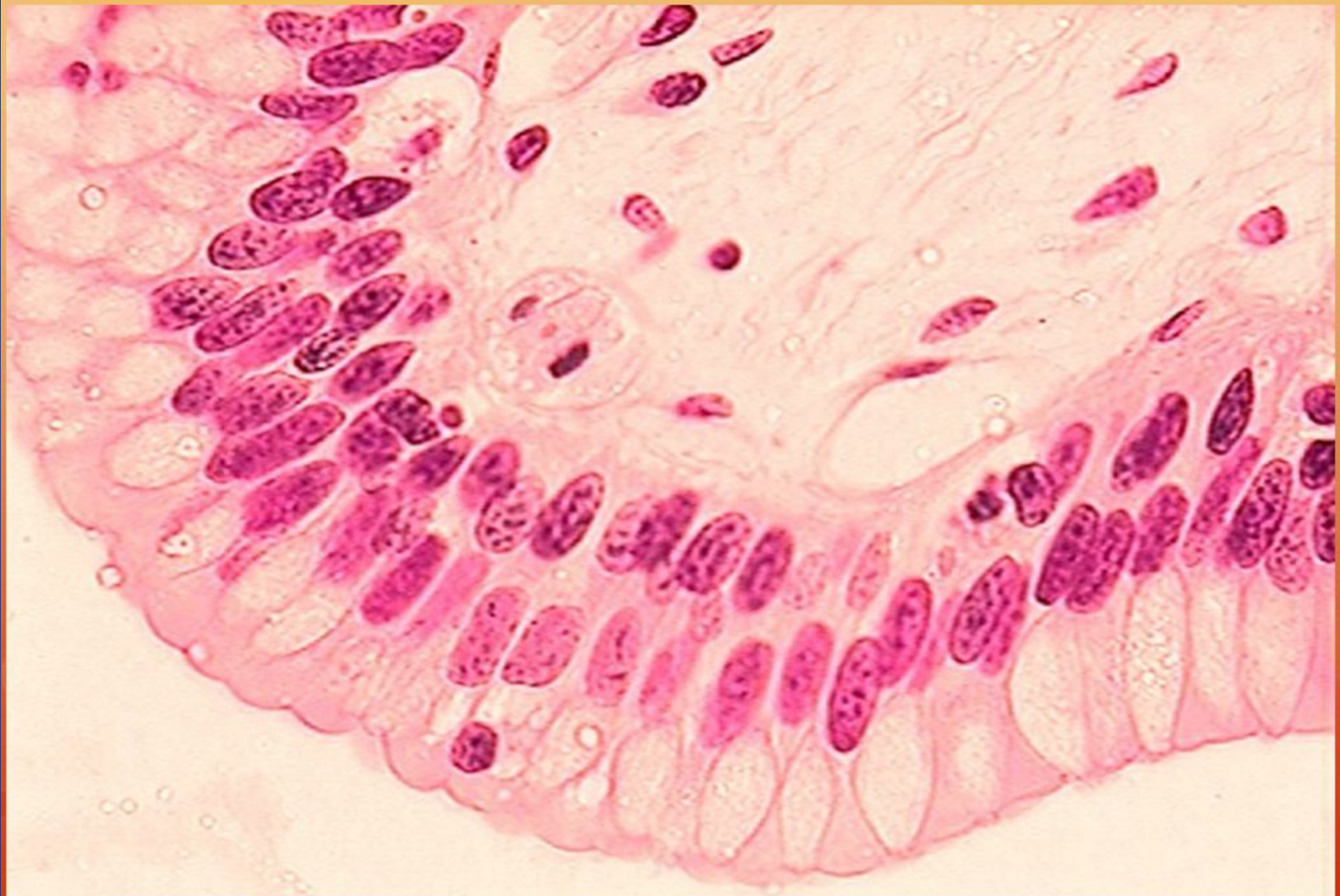
Stratified cuboidal



Pseudostratified columnar



Stratified Columnar Epithelium



Stratified epithelium:

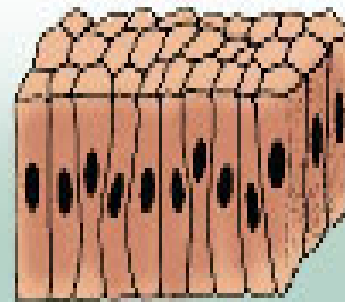
Types of Epithelium



Simple squamous

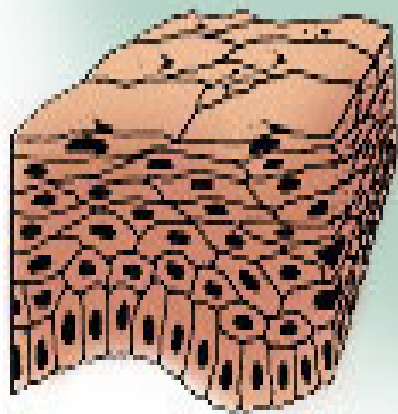


Simple cuboidal

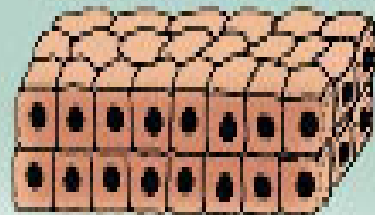


Simple columnar

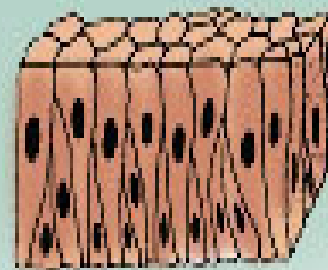
Transitional



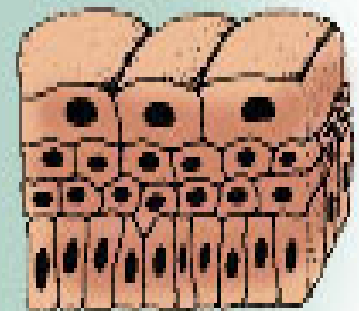
Stratified squamous



Stratified cuboidal

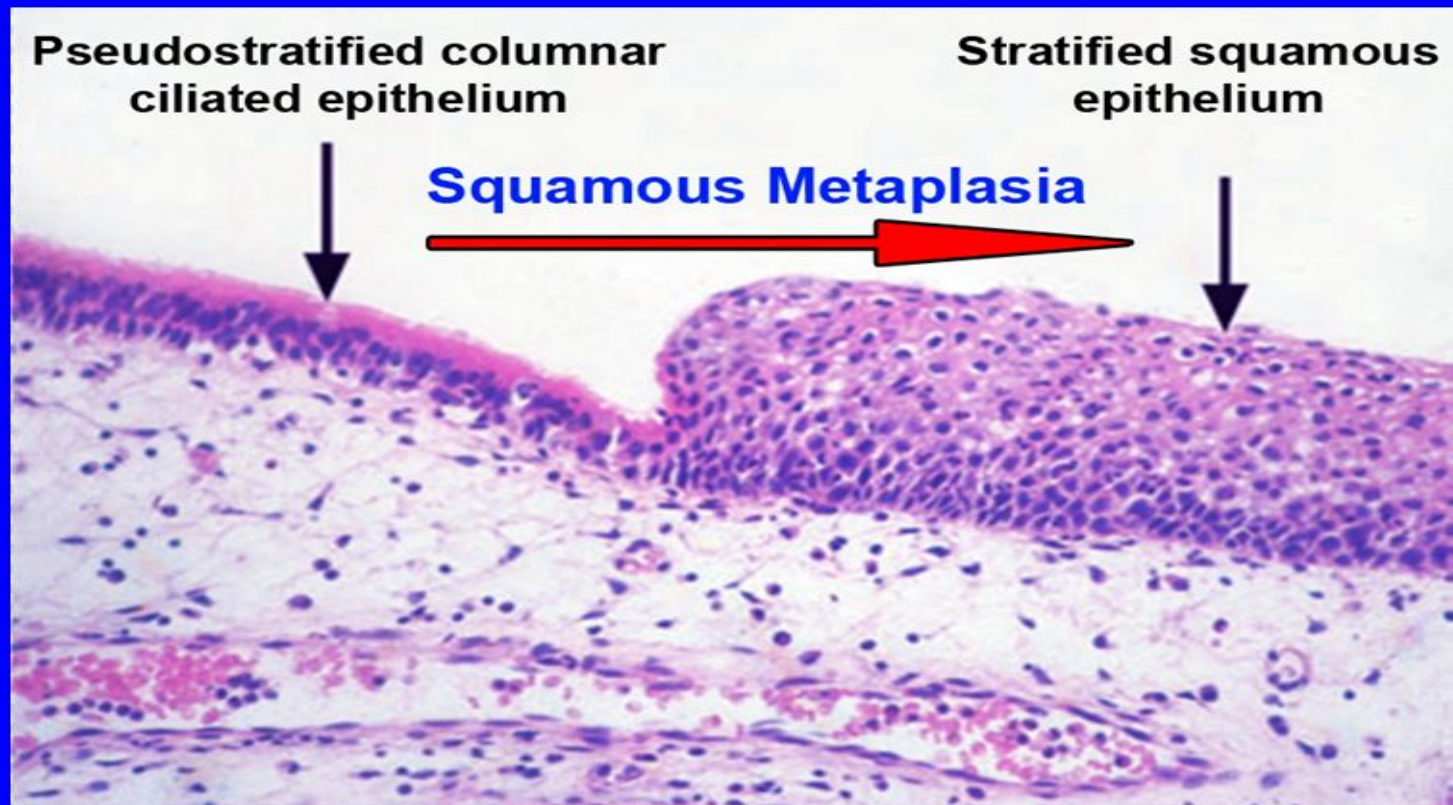


Pseudostratified columnar



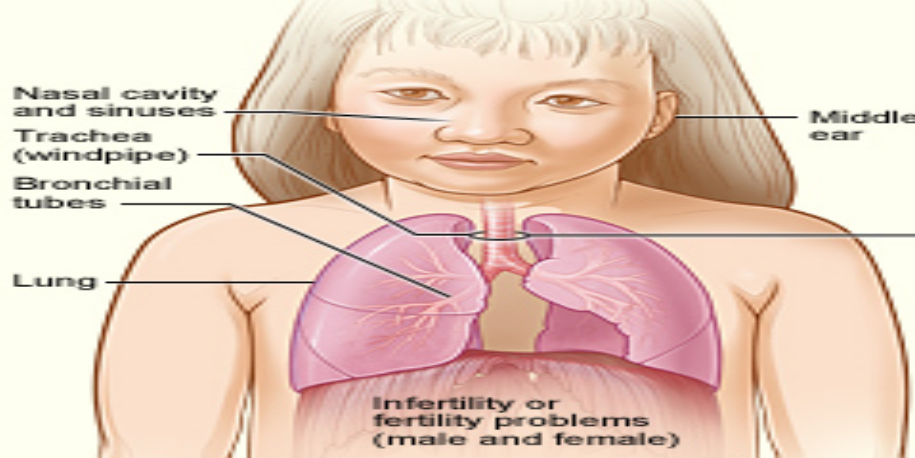
Clinical Correlation: Epithelial Metaplasia

Squamous Metaplasia

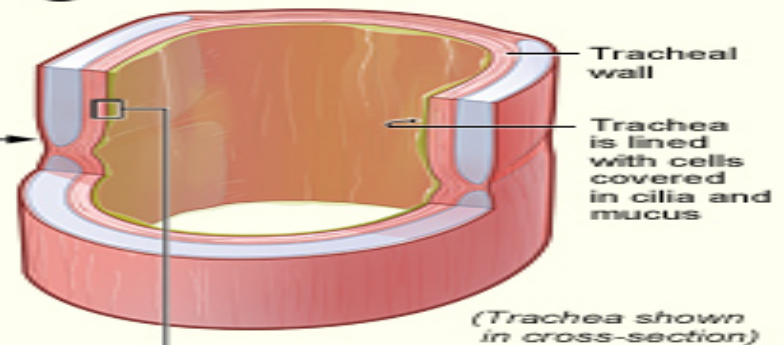


Primary Ciliary Dyskinesia (Immotile Cilia Syndrome)

A Organs affected by primary ciliary dyskinesia

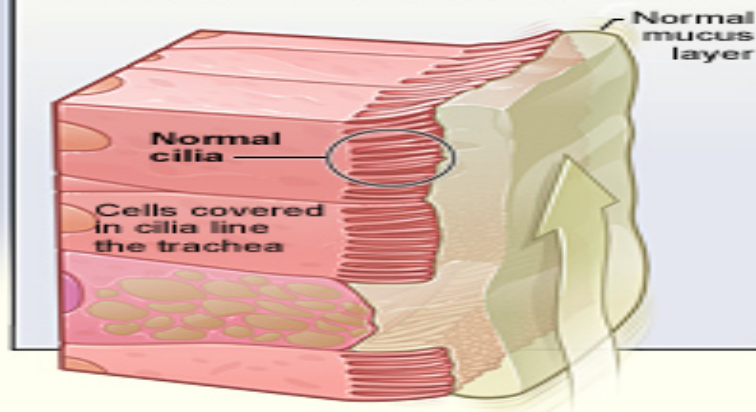


B Trachea



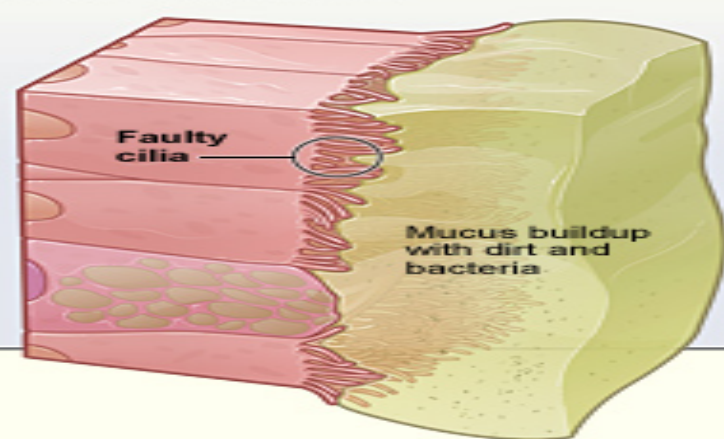
C Normal cilia lining trachea

Cilia move together in wave-like motions to transport mucus toward the mouth. The mucus contains dirt and bacteria.



D Faulty cilia lining trachea

Cilia are deformed and do not move together, causing a buildup of mucus. The mucus contains dirt and bacteria.





Thank you