

University of Basrah
College of science
Department of biology

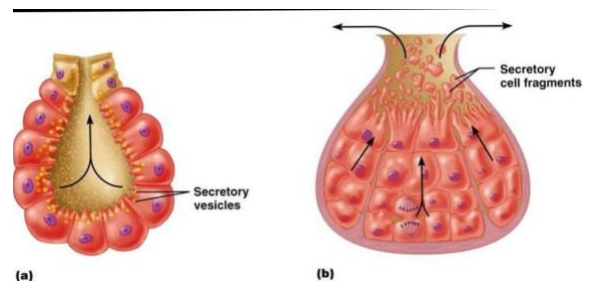


Student's name: Zahraa ali Kazim
Professor. D.Maha Khalil Ibrahim

Course: B206 Tissue

17/18

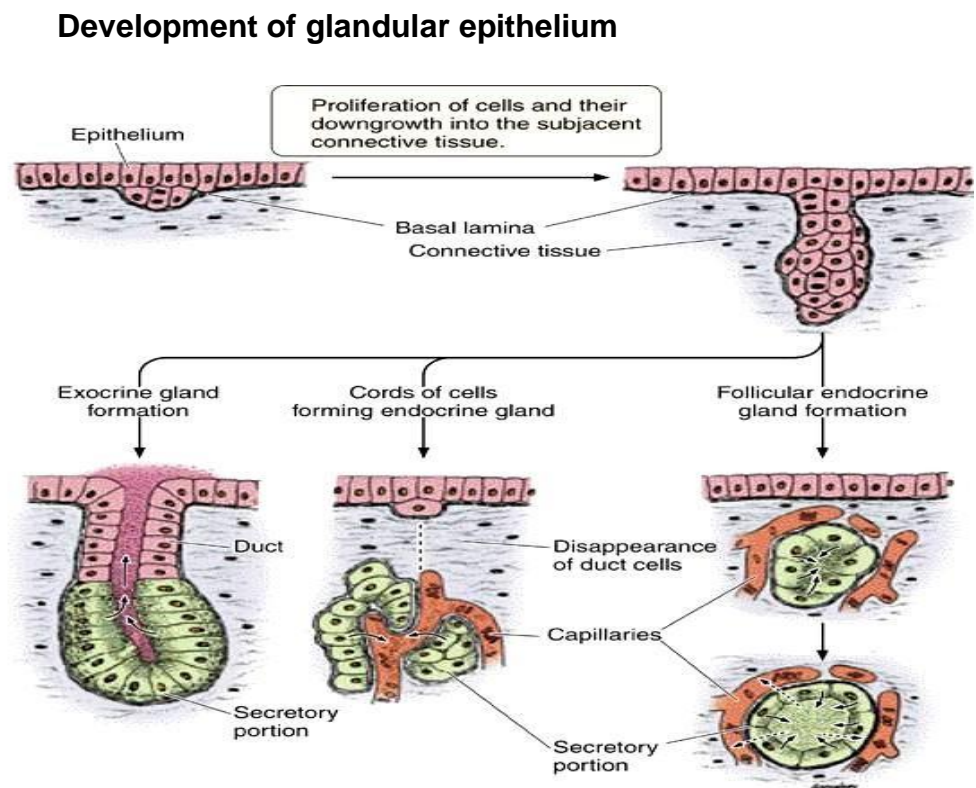
The second chorus/Matinee 2020 2019



Glandular epithelium

GLANDULAR EPITHELIUM

- formed by cells specialized to produce a fluid secretion
- they synthesize, store and secrete extracellular products that are not used by the cell itself but are of importance to other parts of organism
- complex aggregates of glandular epithelial cells – parenchyma form the larger multicellular glands (*e.g.* salivary glands, pancreas) or unicellular glands consist of isolated epithelial cells (*e.g.* goblet cells)
- glands always arise during development (fetal life) from covering epithelium by means of cell proliferation and invasion of subjacent connective tissue followed by further differentiation:



A) EXOCRINE GLANDS – maintain connection with the surface epithelium via the tubular ducts through which the secretory product passes to reach the surface (skin, digestive tract)

B) ENDOCRINE GLANDS are ductless – the connection with the surface was obliterated during development and they release their secretory product (hormones) into the bloodstream

A. EXOCRINE GLANDS

Histologically, composed from two parts:

- a. **secretory portion (lat. *portio secretoria*) – contains the cells responsible for the secretory process**
- b. **system of ducts (lat. *ductus glandulae*) – transport the secretion to the exterior of the gland**

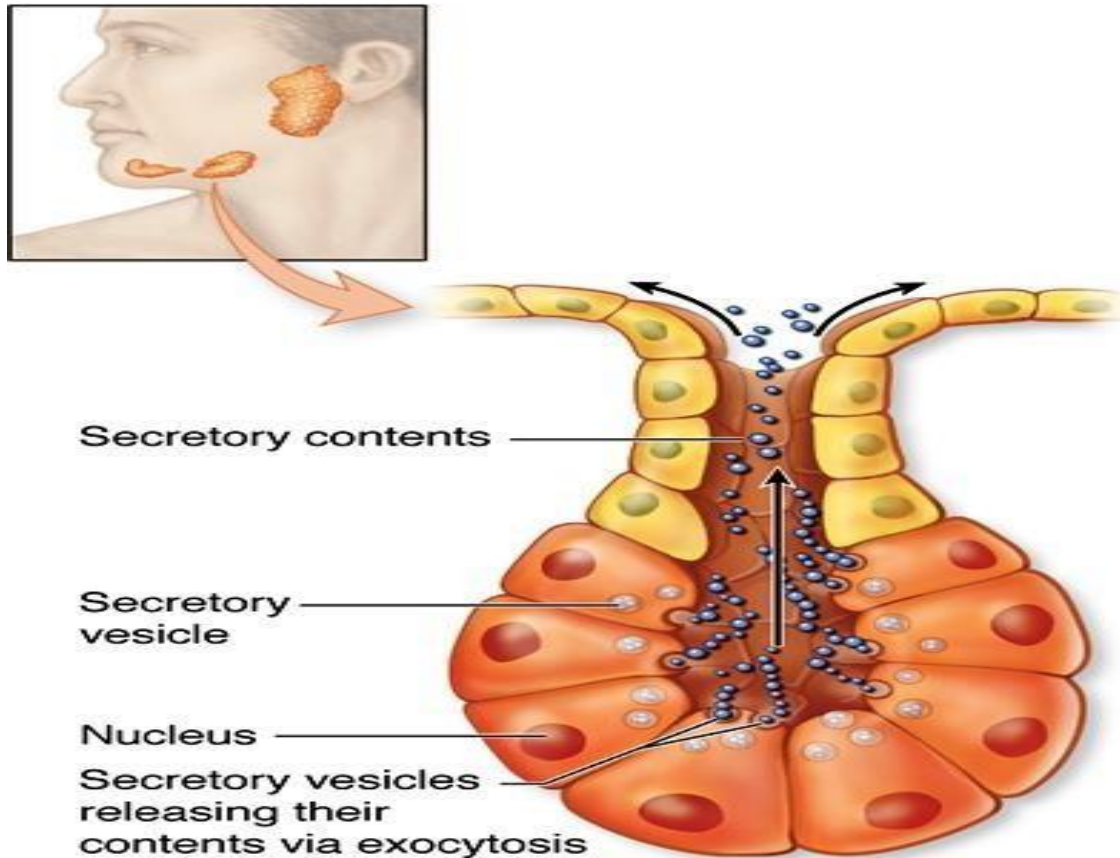
Classification of exocrine glands

(1) Functional classification according to secretory mechanisms:

- **on the basis how the secretory product is released**

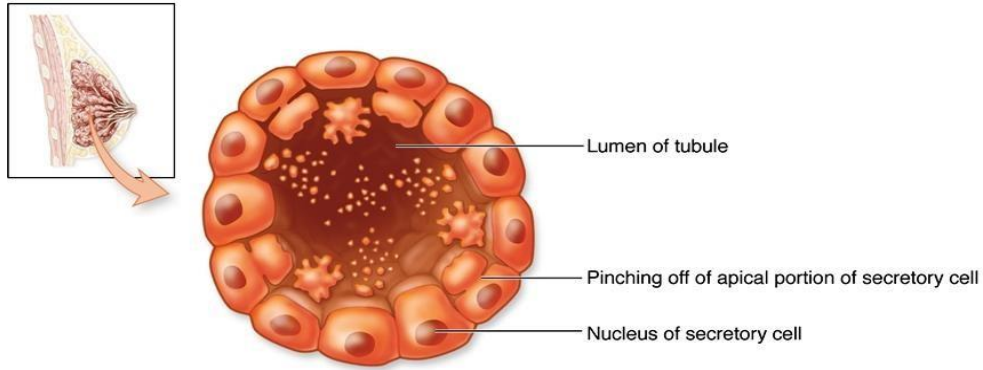
A- MEROCRINE/ECCRINE SECRETION

► the secretory product is released by exocytosis = secretory granules leave the cell without any further loss of cell substance; (e.g. pancreas, salivary glands)



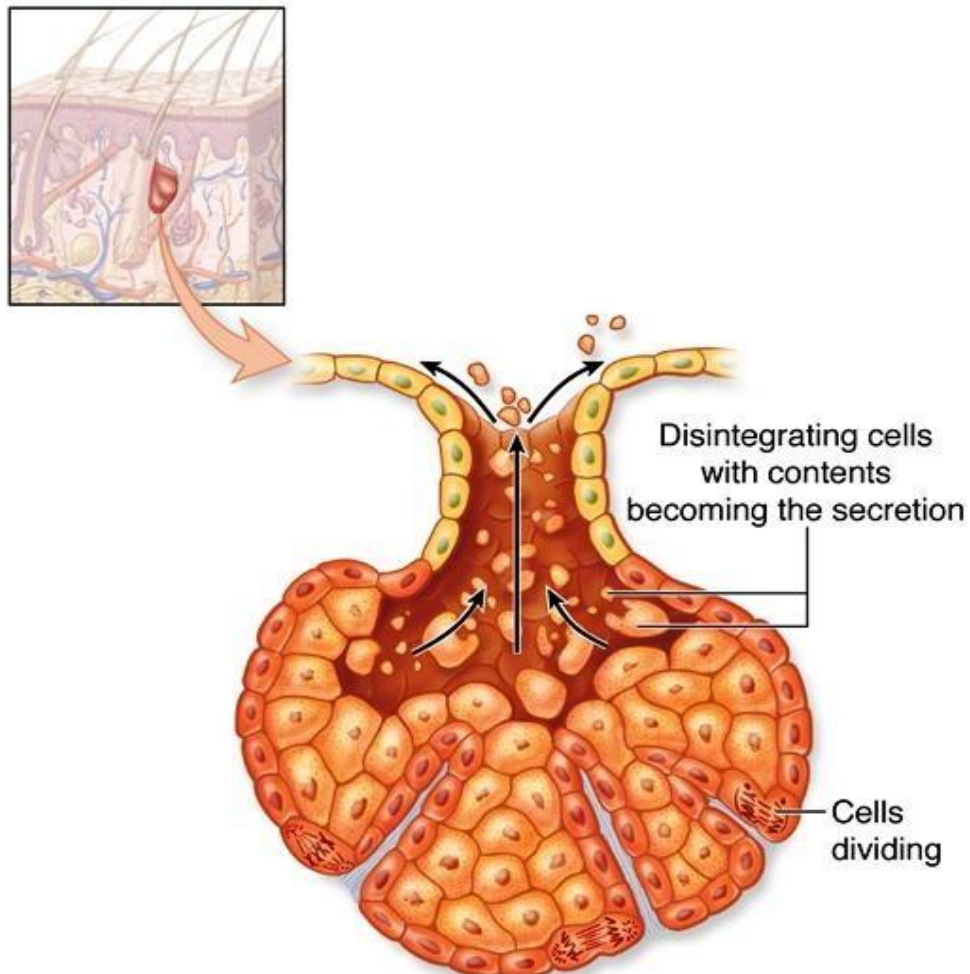
B- APOCRINE SECRETION

► the apical part of cytoplasm of the cells is lost together with the secretory product; (e.g. female mammary gland)



C- HOLOCRINE SECRETION

► breakdown and discharge of the entire secretory cell and its product; (e.g. sebaceous glands of the skin)

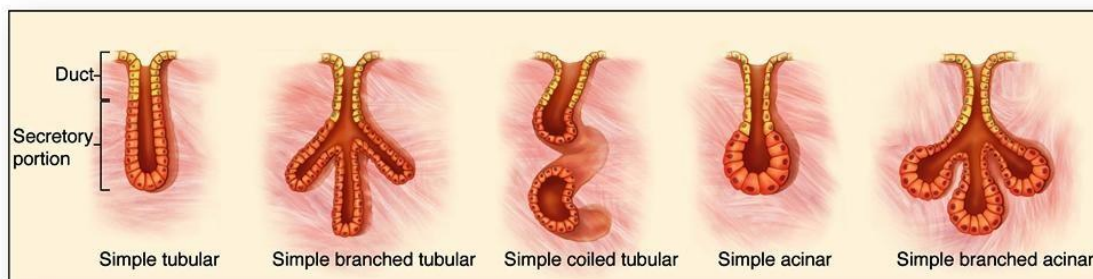


(2) Histological classification according to duct system:

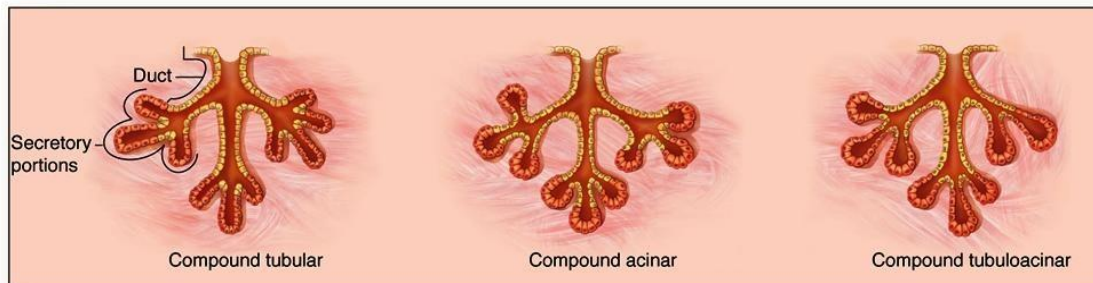
a- Simple (the ducts are not branched);

b- Compound (with a branching duct system)

(3) Histological classification according to secretory portion: a- Tubular (shaped like a tube); *e.g.* glands of intestine, stomach b- Acinar or alveolar (flask-shaped with narrow centrally placed lumen); *e.g.* pancreas, parotid salivary gland c- Tubuloacinar (combination of the tube ends with a sac-like dilatation); *e.g.* submandibular and sublingual salivary glands



a Simple glands



b Compound glands

B. ENDOCRINE GLANDS

- endocrine glands **have not** any ducts - *ductless*
- their connection with surface epithelium is lost during embryonic development
- their specific products – **hormones** are released directly into the bloodstream
- each epithelial cell of endocrine gland is in direct contact with blood capillary

► Major morphological features of endocrine glands:

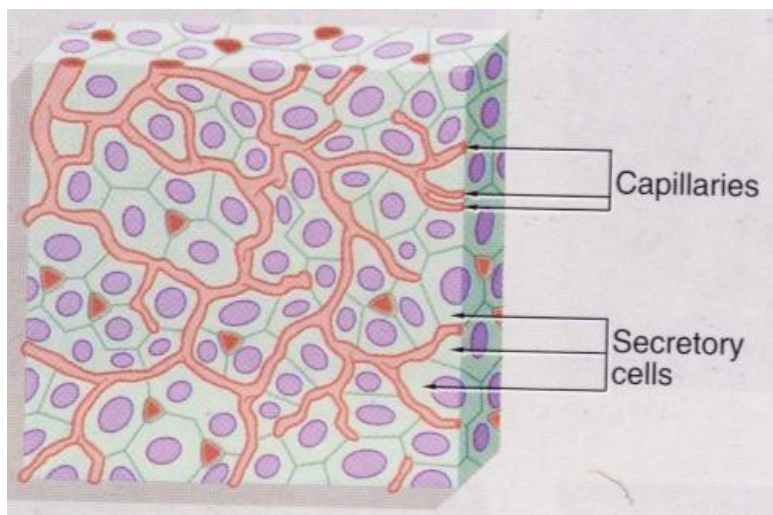
1. Missing of the duct system
2. Rich vascularization as well as innervation

3. Special histological structure

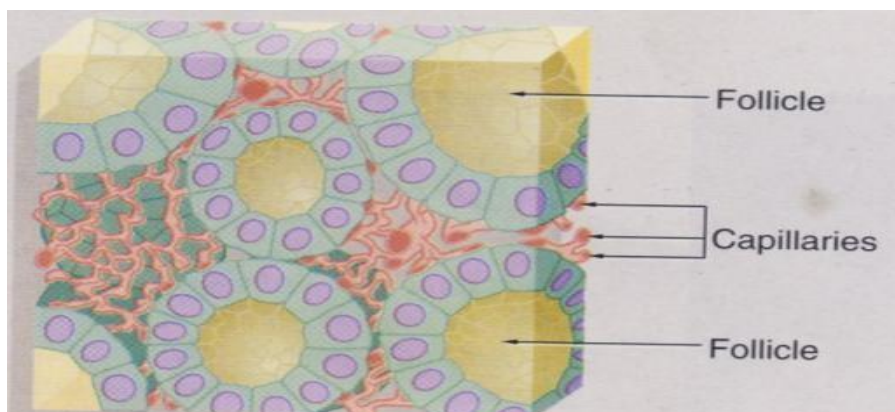
► According to histological structure - 3 main types of endocrine glands:

- (1) Trabecular
- (2) Follicular
- (3) Disseminated

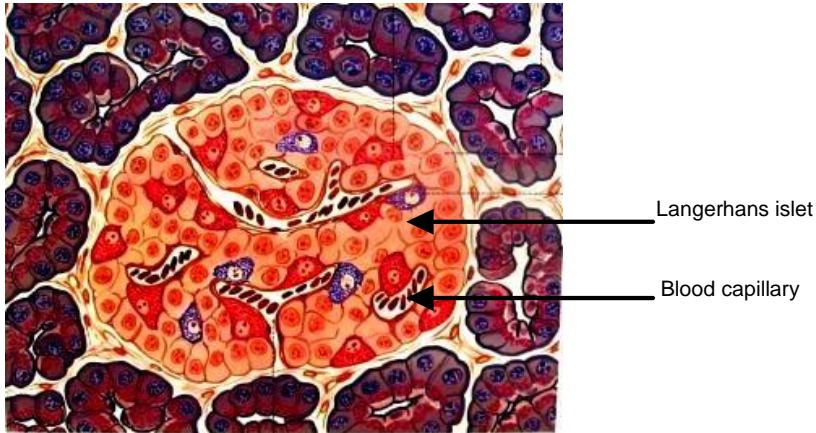
1. Trabecular type – made from the cords of the cells – *e.g.* adenohypophysis, parathyroid gland, adrenal glands



2. Follicular type – the cells form spherical structures – *e.g.* thyroid gland



3. Disseminated type – the endocrine cells are placed in groups or separately in another organ – *e.g.* Leydig cells in testis, Langerhans islets of pancreas



What is the difference between covering and lining epithelium from glandular epithelium?

_glandular epithelium are specialized for secretion. lining epithelium simply lines organs like the stomach. ... Endocrine glands release substances within the body and exocrine glands release substances outside the body

What is the main function of glandular epithelium?

Glandular epithelium is a type of epithelial tissue which covers the glands (both exocrine and endocrine) of our body. Their main function is secretion. Both endocrine and exocrine glands produce their secretions through the glandular epithelium via special cells called goblet cells

What is meant by glandular epithelium?

Glandular epithelium

Definition: A single cell or group of cells that produce and secrete specific products (e.g., mucin). Glandular epithelium commonly invaginates from

surface epithelium into other tissue (e.g., connective tissue), but it is separated from the tissue by the basal lamina

How many layers does glandular epithelium have?

Simple (one layered) epithelium, surrounding fluid-filled cavities (follicles)

Reference

Department of Histology and Embryology, P.J. Šafárik University, Medical Faculty, Košice

Glandular epithelium: Syllabus for foreign students

Author: MVDr. Štefan TÓTH, PhD.

Revised by: prof. MUDr. Eva Mechírová, CSc.

https://www.muhammadharaty.com/lectures?depth=7&university=1&college_id=1&department_id=126&stage=1&date_from=2015-09-01&date_to=2016-08-31&material_id=15&author=%D8%AF.%20%D8%A7%D9%86%D8%B9%D8%A7%D9%85

https://link.springer.com/chapter/10.1007/978-3-319-41873-5_6

- Anders Rehfeld
- Malin Nylander
- Kirstine Karnov

<https://www.cram.com/flashcards/ap-exam-2-study-guide-2780338>

<https://www.toppr.com/ask/question/what-is-glandular-epithelium/>

https://www.amboss.com/us/knowledge/General_histology

https://link.springer.com/chapter/10.1007/978-3-319-41873-5_6