

THE BASIC TYPES OF TISSUES

EPITHELIAL

CONNECTIVE (SUPPORT) AND BLOOD

MUSCLE

NERVOUS

**THE TISSUES ARE SYSTEMS OF CELLS AND
NONCELLULAR STRUCTURES CHARACTERIZED
BY SIMILAR STRUCTURAL, FUNCTIONAL PROPERTIES
AND DEVELOPMENT**

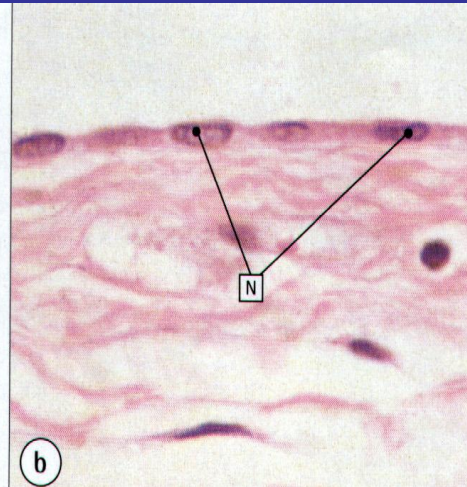
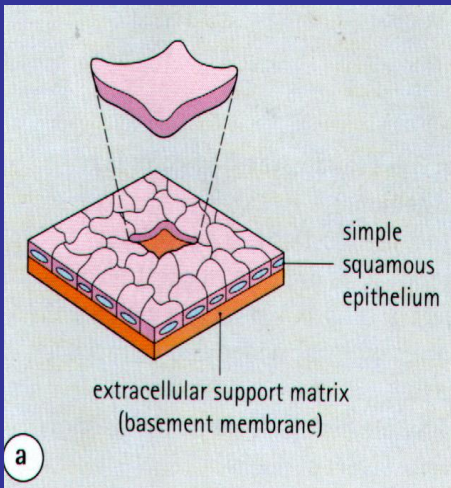
THE COMMON CHARACTERISTICS OF EPITHELIA

- COVER SURFACES OR LINE CAVITIES
- FORM CONTINUOUS LAYERS
- INDIVIDUAL CELLS ARE TIGHTLY JOINED BY JUNCTIONS
- REST ON BASEMENT MEMBRANES WITH UNDERLYING CONNECTIVE TISSUE
- AVASCULAR (NO BLOOD VESSELS)
- SURFACE AND CYTOPLASM ARE SPECIALIZED INTO THE APICAL AND BASAL PARTS
- ARE RENEWING TISSUES (POSSESS STEM CELLS)

CLASSIFICATION OF EPITHELIA

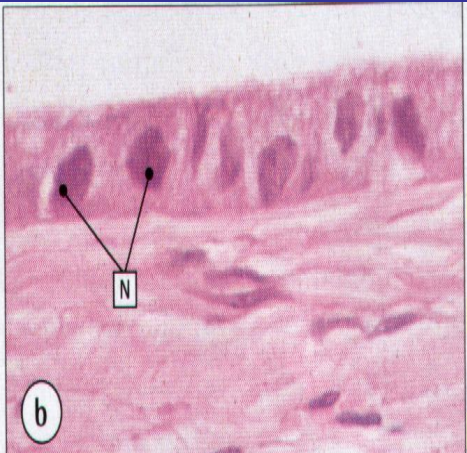
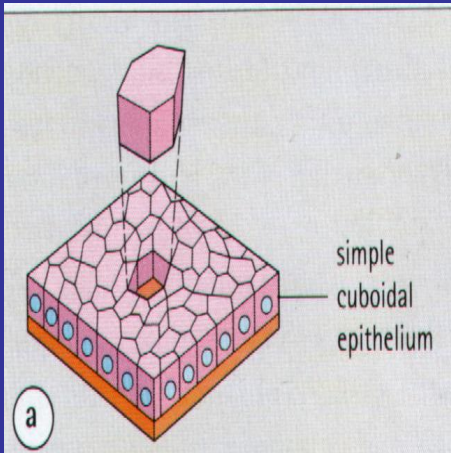
1. ARRANGEMENT OF LAYERS

- SIMPLE (ALL OF THE CELLS CONTACT UNDERLYING BASEMENT MEMBRANE)
- STRATIFIED (ONLY BOTTOM LAYER IS IN CONTACT WITH BM)



2. THE SHAPE OF COMPONENT CELLS

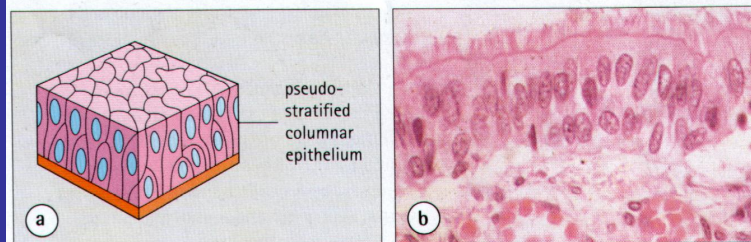
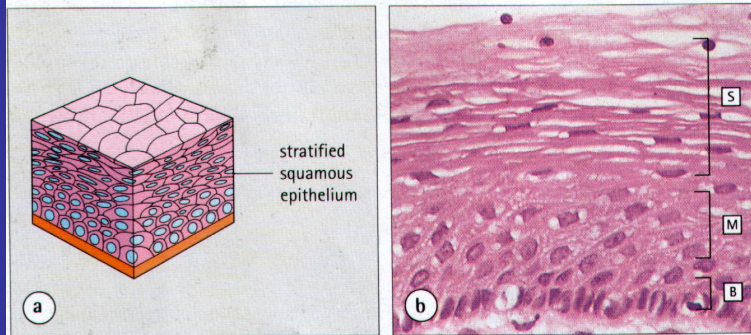
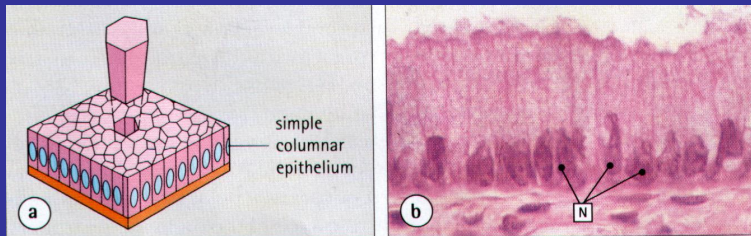
- SQUAMOUS
- CUBOIDAL
- COLUMNAR



3. SURFACE MODIFICATIONS

- WITH MICROVILLI (STRIATED BORDER, BRUSH BORDER), STEREOCILIA
- WITH CILIA
- KERATINIZED
- NONKERATINIZED

THE LOCATION OF THE MAJOR TYPES OF EPITHELIA



SIMPLE SQUAMOUS	<ul style="list-style-type: none"> •BLOOD VESSELS •SEROUS MEMBRANES •Henle's loops OF KINDEY
SIMPLE CUBOIDAL	<ul style="list-style-type: none"> •KIDNEY TUBULES •SMALL DUCTS OF GLANDS
SIMPLE COLUMNAR	<ul style="list-style-type: none"> •STOMACH •GALL BLADDER & BILE DUCTS •INTESTINAL MUCOSA
WITH MICROVILLI	
PSEUDOSTRITIFIED (CILATED)	<ul style="list-style-type: none"> •RESPIRATORY PASSAGES
STRATIFIED NONKERATINIZED	<ul style="list-style-type: none"> •ESOPHAGUS •ANTERIOR CORNEAL SURFACE •PART OF ORAL CAVITY
STRATIFIED KERATINIZED	<ul style="list-style-type: none"> •SKIN •PART OF ORAL CAVITY
TRANSITIONAL	<ul style="list-style-type: none"> •URINARY PASSAGES

SPECIALIZATIONS OF THE PLASMA MEMBRANE

1. **APICAL PART** – MICROVILLI, CILIA, STEREOCILIA, BORDER

2. **LATERAL PART** – CELL JUNCTIONS

3. **BASAL PART** – HEMIDESMOSOMES, BASAL STRIATION

EPITHELIAL CELL JUNCTIONS:

OCCLUDING JUNCTIONS – TO FORM IMPERMEABLE BARRIER

ANCHORING JUNCTIONS & DESMOSOMES – TO PROVIDE MECHANICAL STRENGTH

COMMUNICATING JUNCTIONS – ALLOW MOVEMENTS OF MOLECULES BETWEEN CELLS

SECRETORY EPITHELIA AND GLANDS

- ENDOCRINE
- EXOCRINE

□ PROTEINS SECRETING

□ MUCUS SECRETING

□ LIPIDS (STEROIDS)
SECRETING

□ IONS-PUMPING

EXOCRINE GLANDS

SIMPLE
COMPOUND

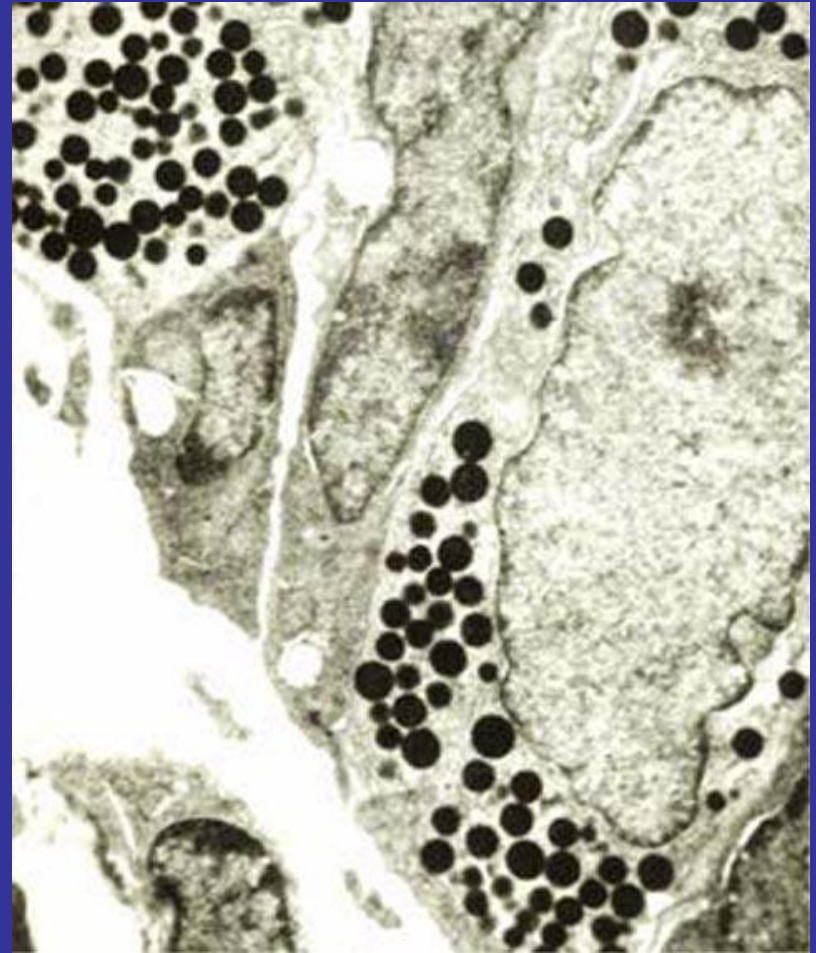
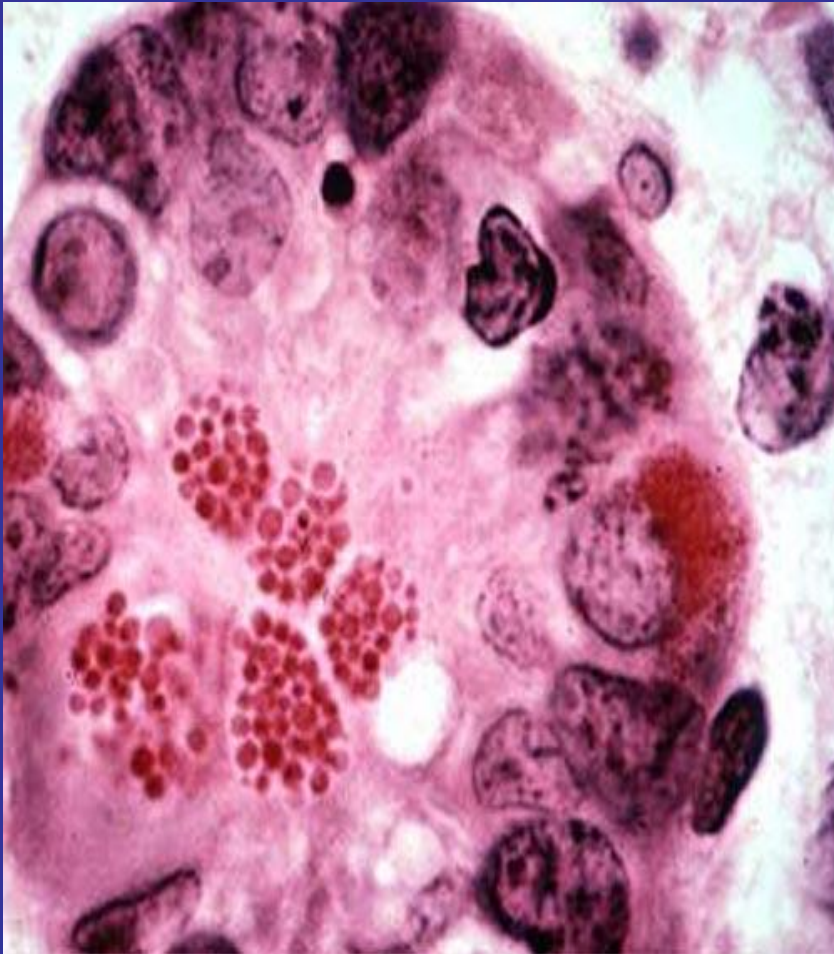
ALVEOLAR
TUBULAR
MIXED

BRANCHED
NONBRANCHED

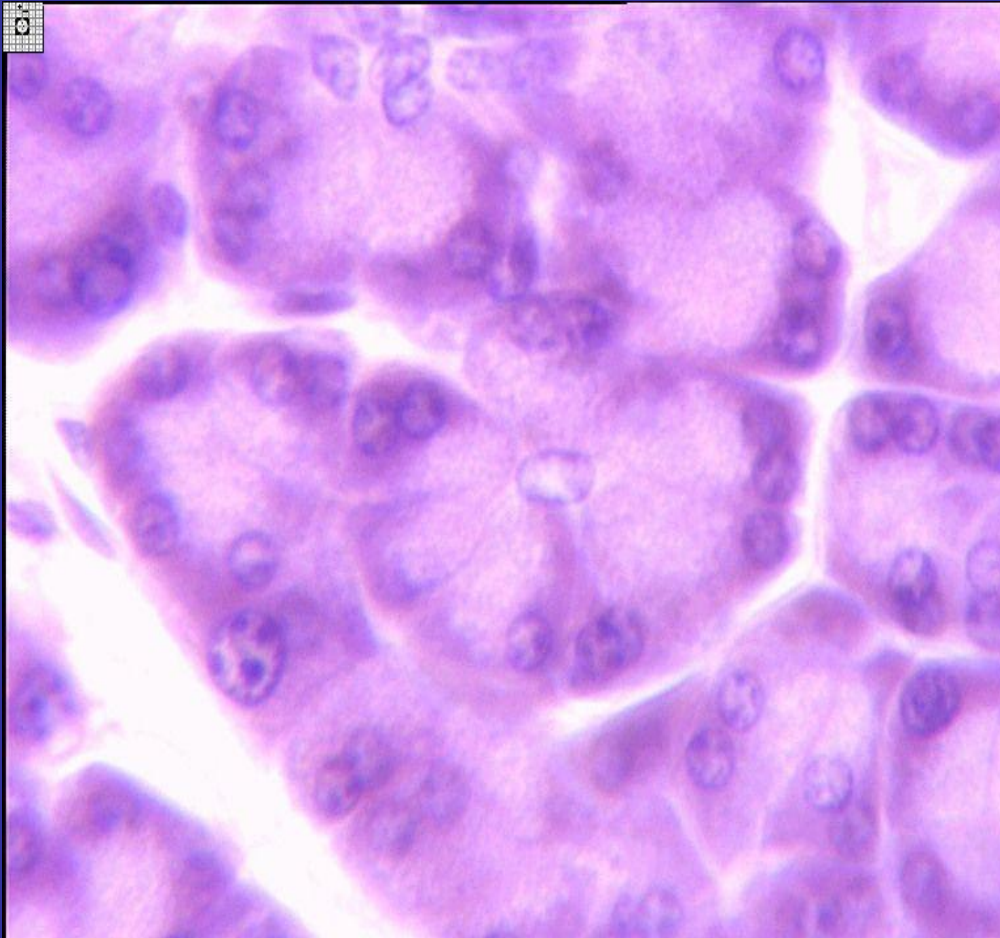
MECHANISMS OF SECRETION

MEROCRINE
APOCRINE
HOLOCRINE

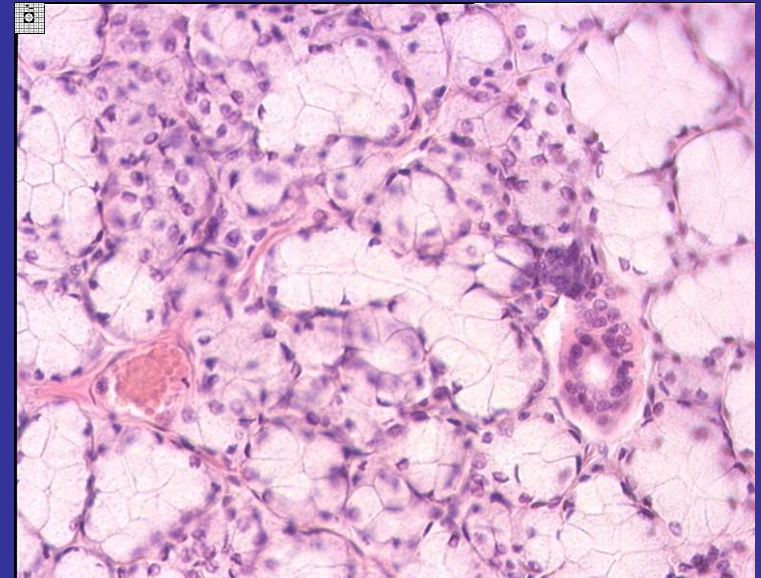
EXOCRINE AND ENDOCRINE CELLS OF INTESTINAL EPITHELIUM



PROTEINS-SECRETING CELLS



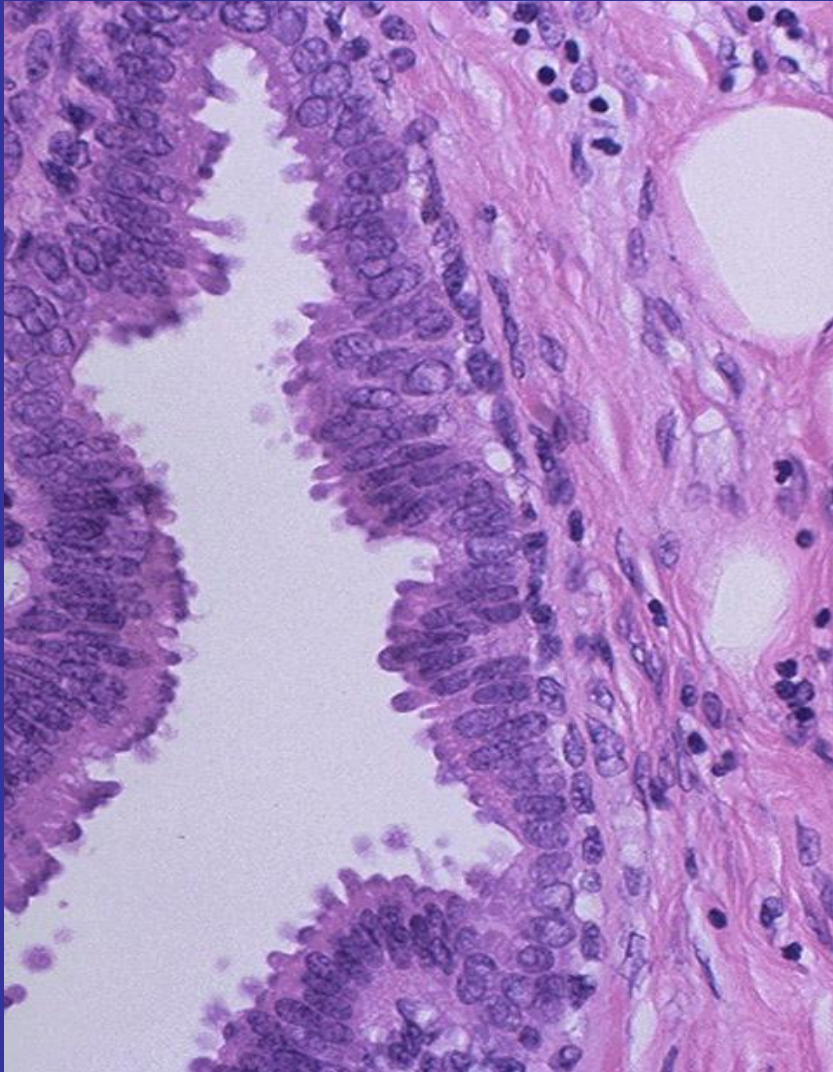
MUCUS-SECRETING CELLS



IONS-PUMPING CELLS



**APOCRINE SECRETION
(MAMMARY GLAND)**



**HOLOCRINE SECRETION
(SEBACEOUS GLANDS)**

