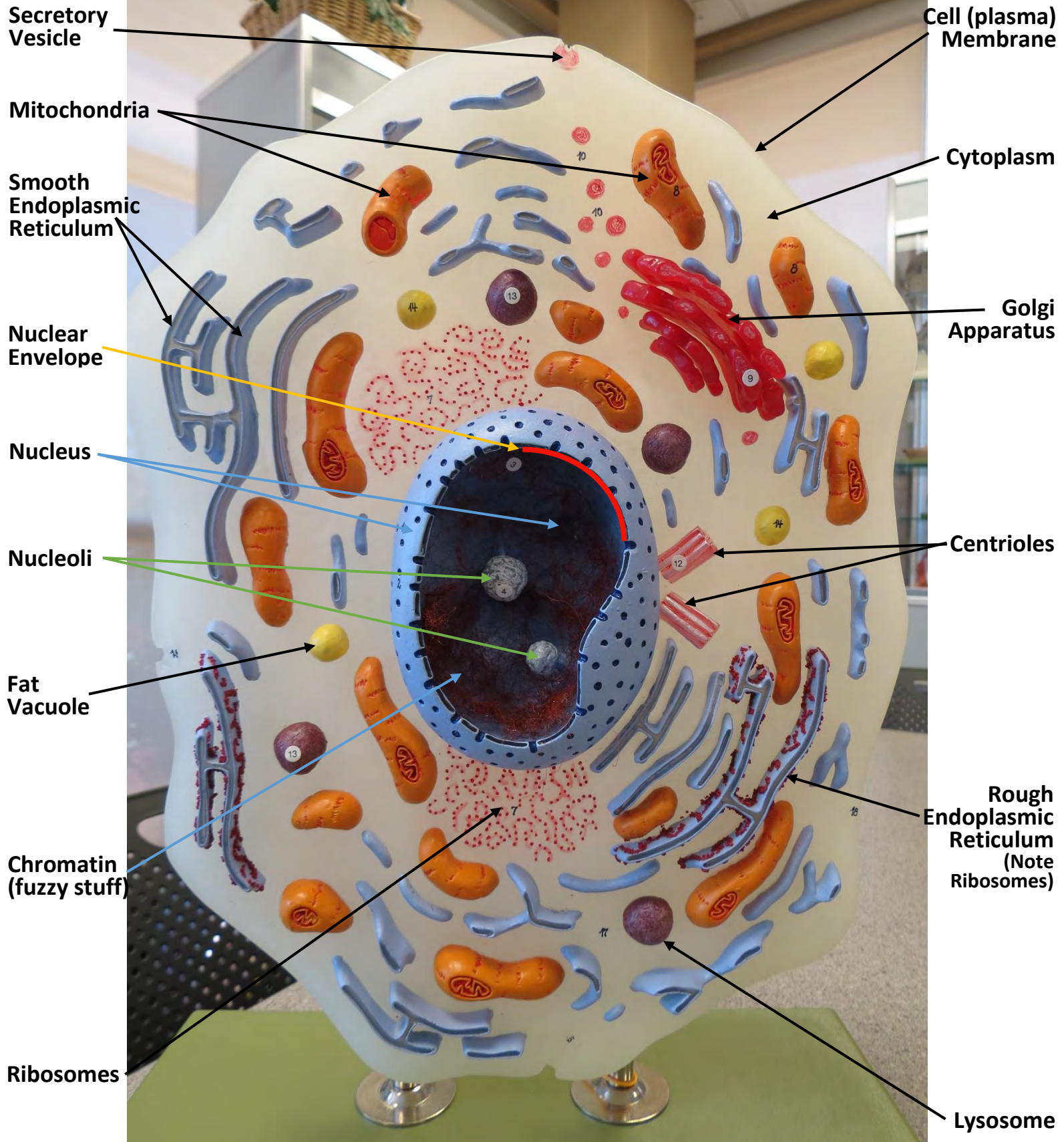
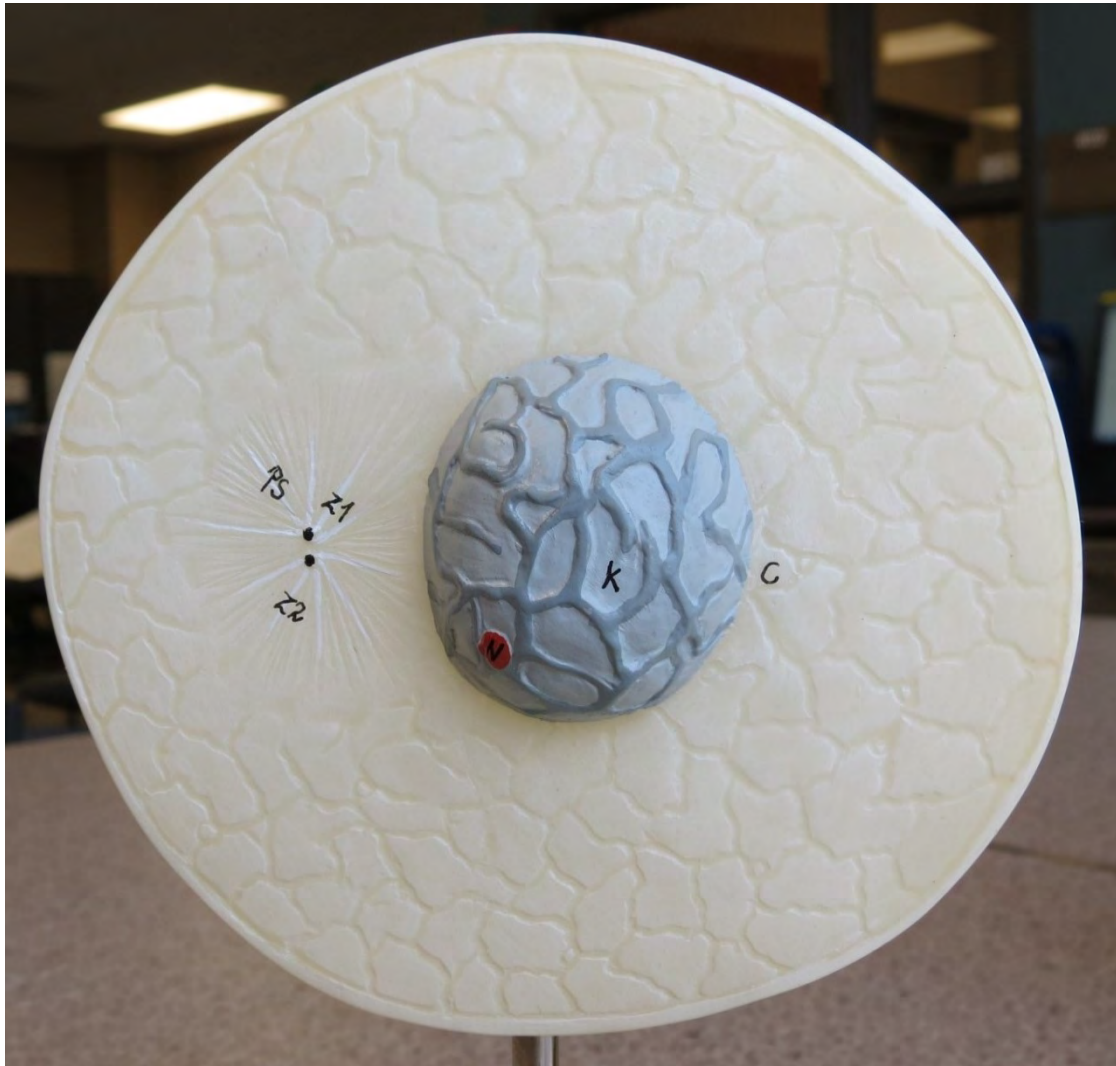


Cell Model



A detailed 3D model of an animal cell, mounted on a stand. The cell is represented by a large, irregular, light-colored shape. Inside, various organelles are depicted in different colors and shapes, each labeled with a number from 1 to 14. The organelles include: 1. Nucleus (dark blue, central, with a nucleolus inside). 2. Nuclear envelope (blue, surrounding the nucleus). 3. Nuclear pores (small blue dots on the nuclear envelope). 4. Nucleolus (small, dark blue, inside the nucleus). 5. Rough endoplasmic reticulum (red, folded, with blue dots representing ribosomes). 6. Smooth endoplasmic reticulum (orange, folded, without blue dots). 7. Golgi apparatus (yellow, stacked, with small blue dots). 8. Mitochondrion (orange, bean-shaped, with internal folds). 9. Lysosome (small, red, spherical). 10. Peroxisome (small, blue, spherical). 11. Centrioles (two cylindrical structures, one red and one blue, at right angles to each other). 12. Vacuole (large, clear, spherical). 13. Plasma membrane (thin, light-colored layer). 14. Cytoplasm (light-colored fluid). Several colored arrows point to specific structures: a red arrow points to the nuclear envelope, a blue arrow points to the nucleolus, a green arrow points to the rough endoplasmic reticulum, a yellow arrow points to the Golgi apparatus, and a black arrow points to the mitochondrion. The model is mounted on a stand with two silver-colored legs.

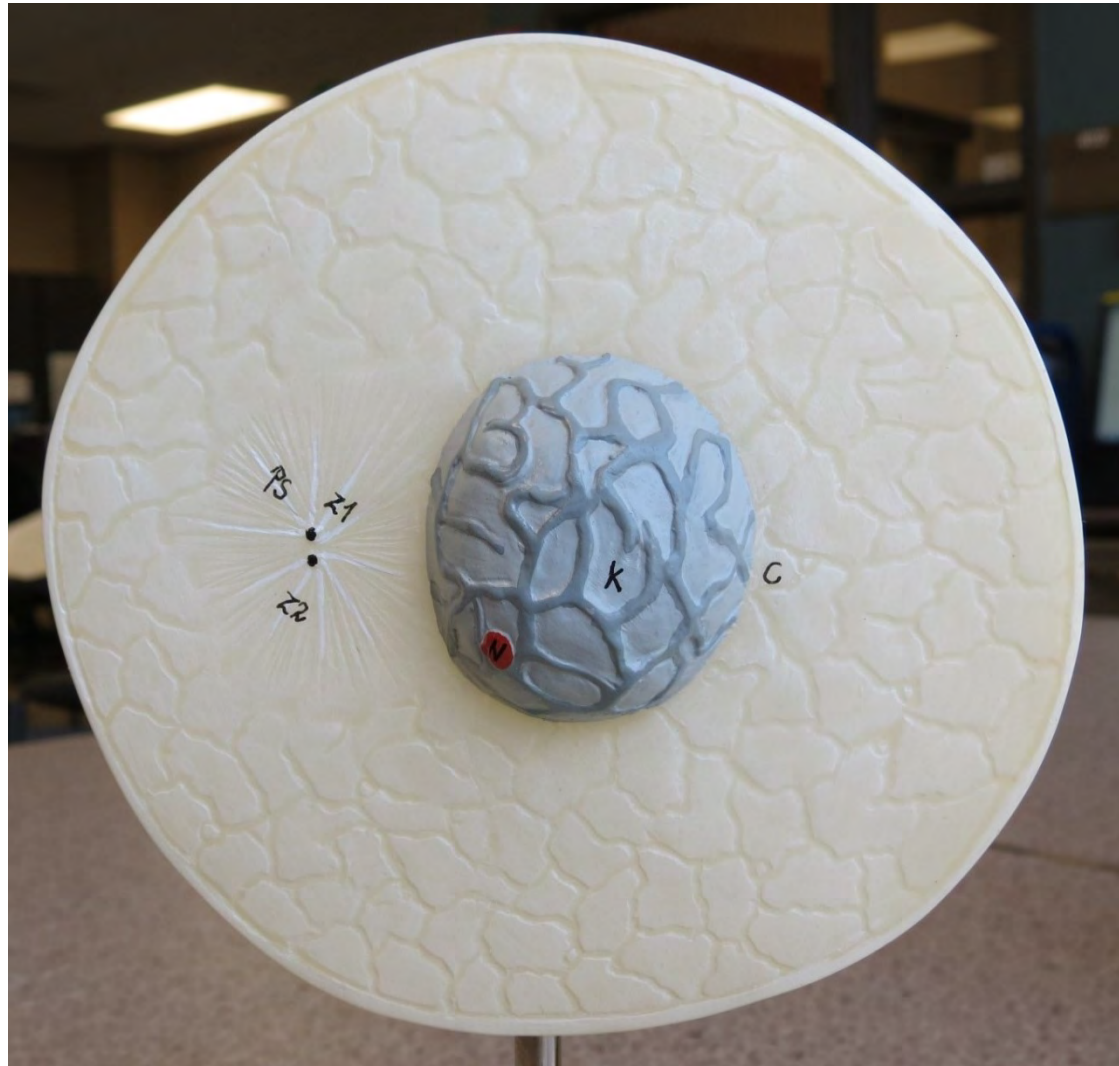
MITOSIS MODEL



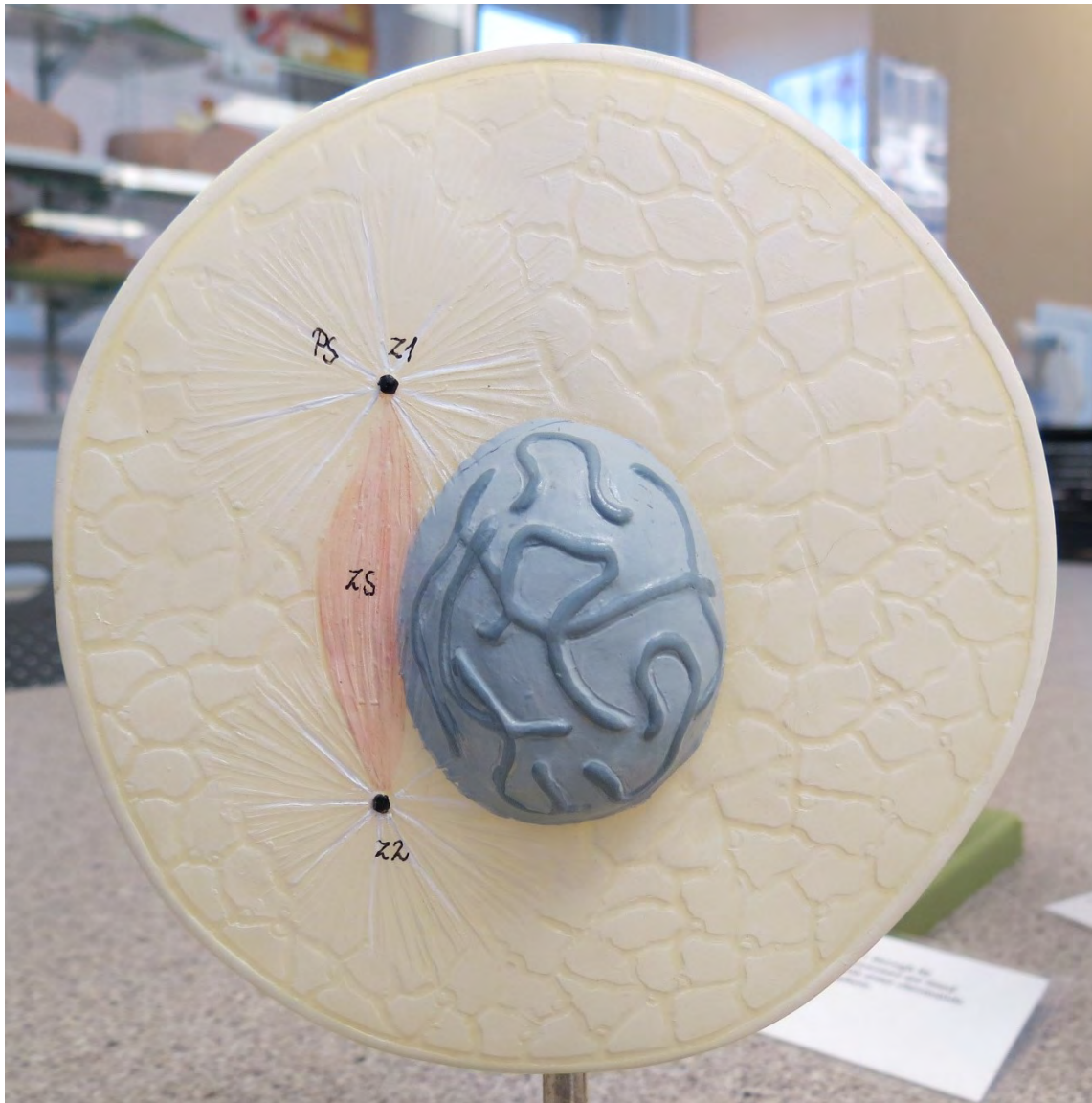
Nucleus is intact.
Centrioles are
close together

Interphase

MITOSIS MODEL



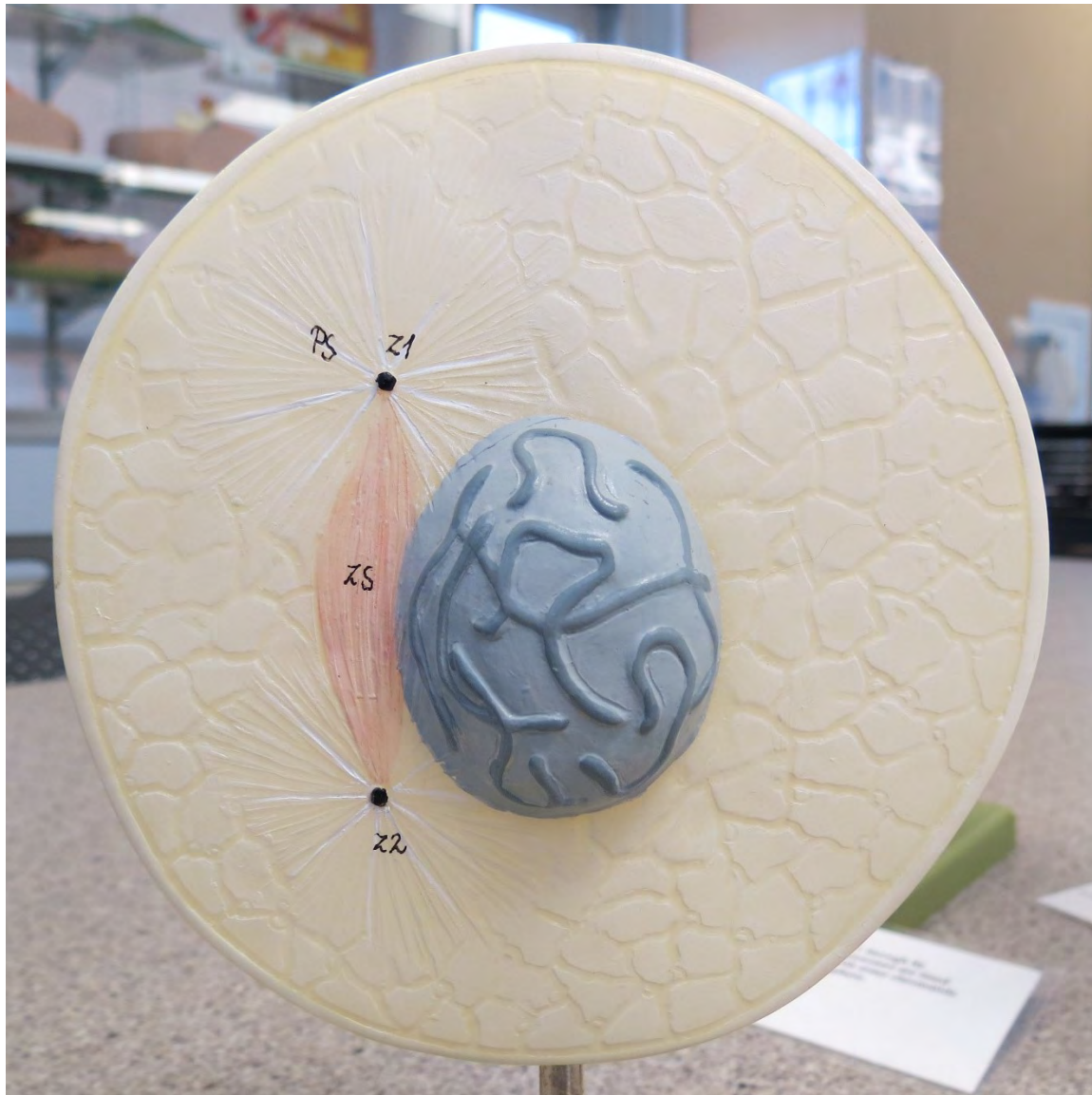
MITOSIS MODEL



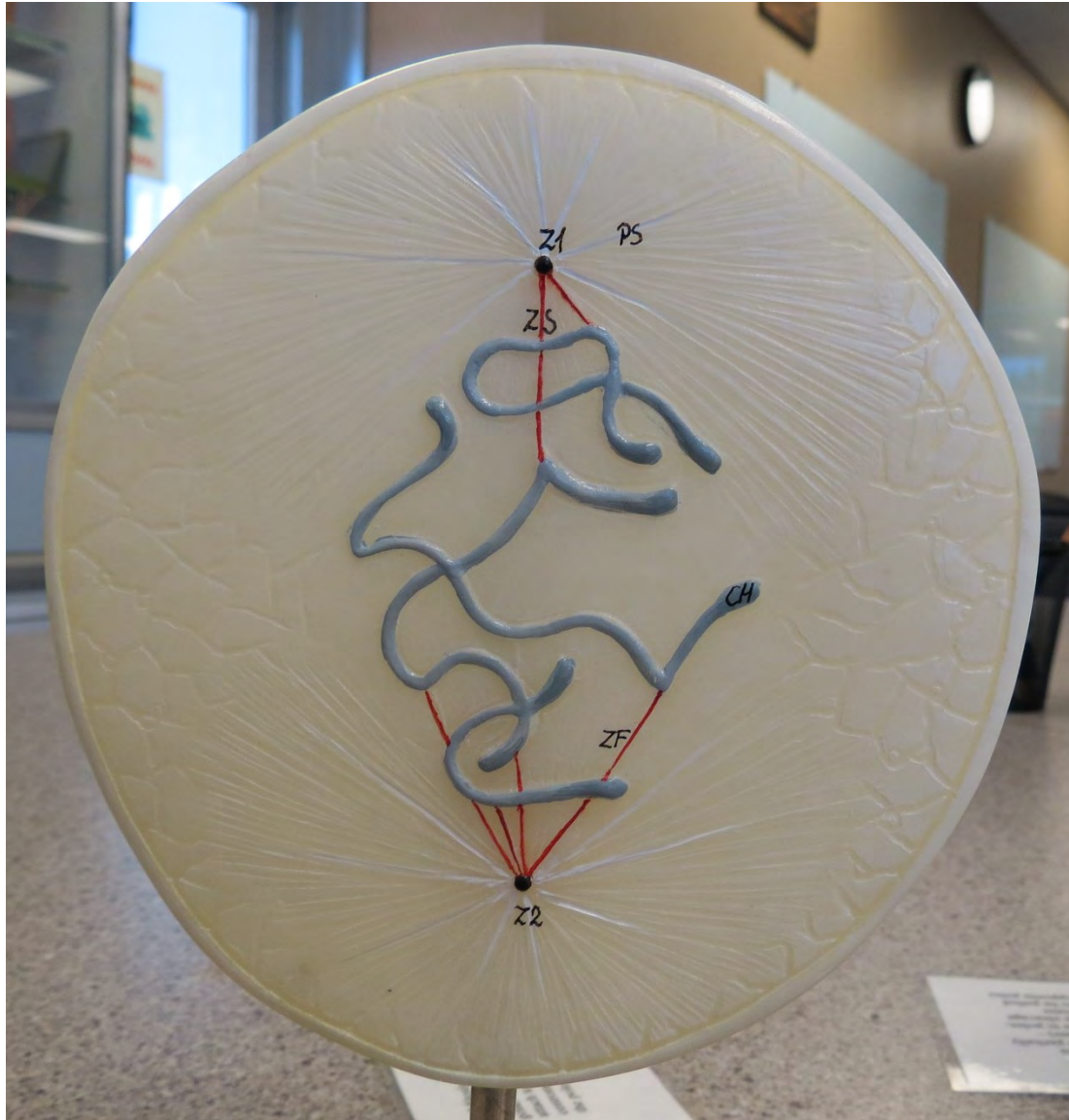
**Centrioles are
moving apart.
Nucleus (with chromatin)
is still intact.**

Early Prophase

MITOSIS MODEL



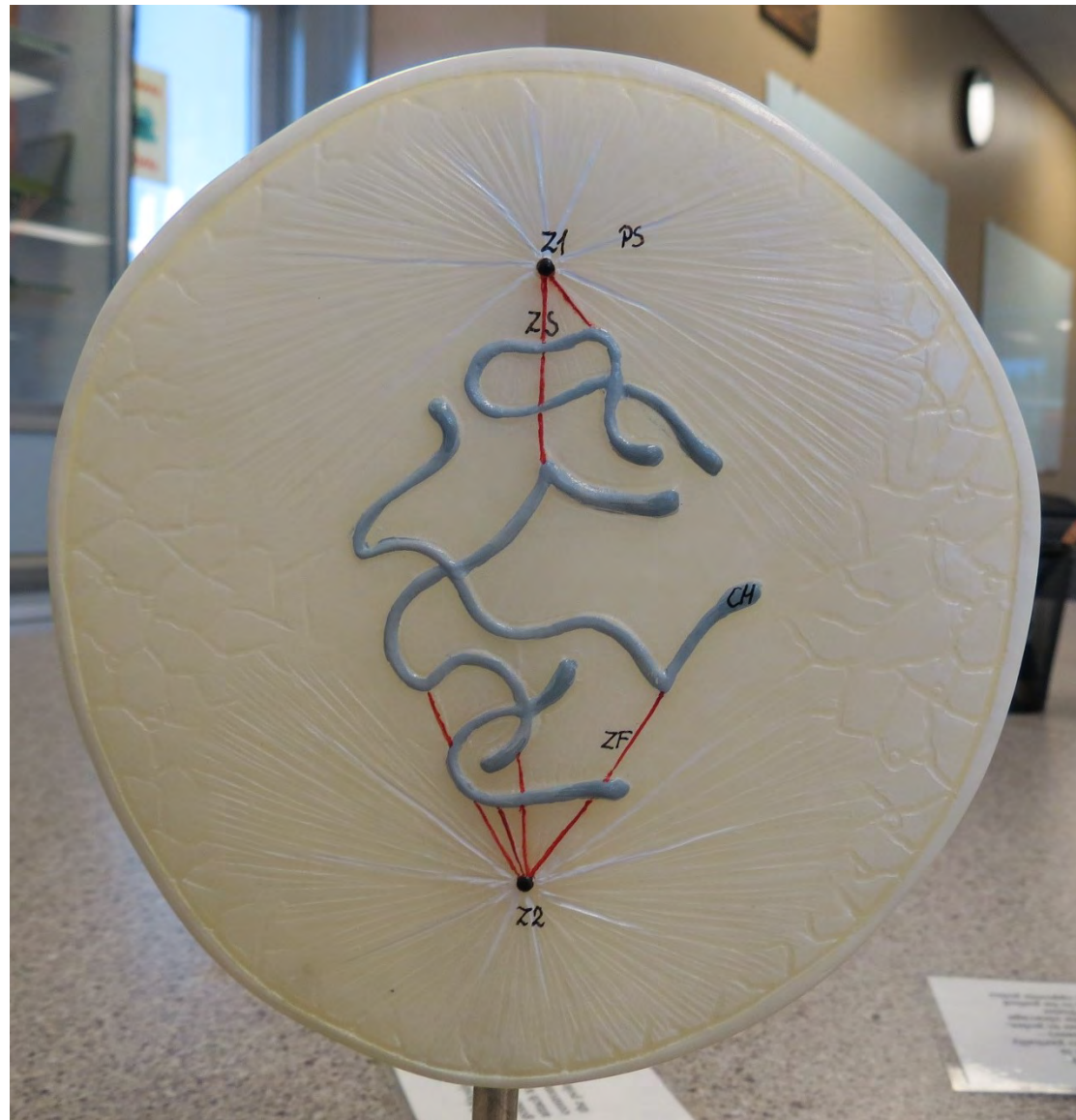
MITOSIS MODEL



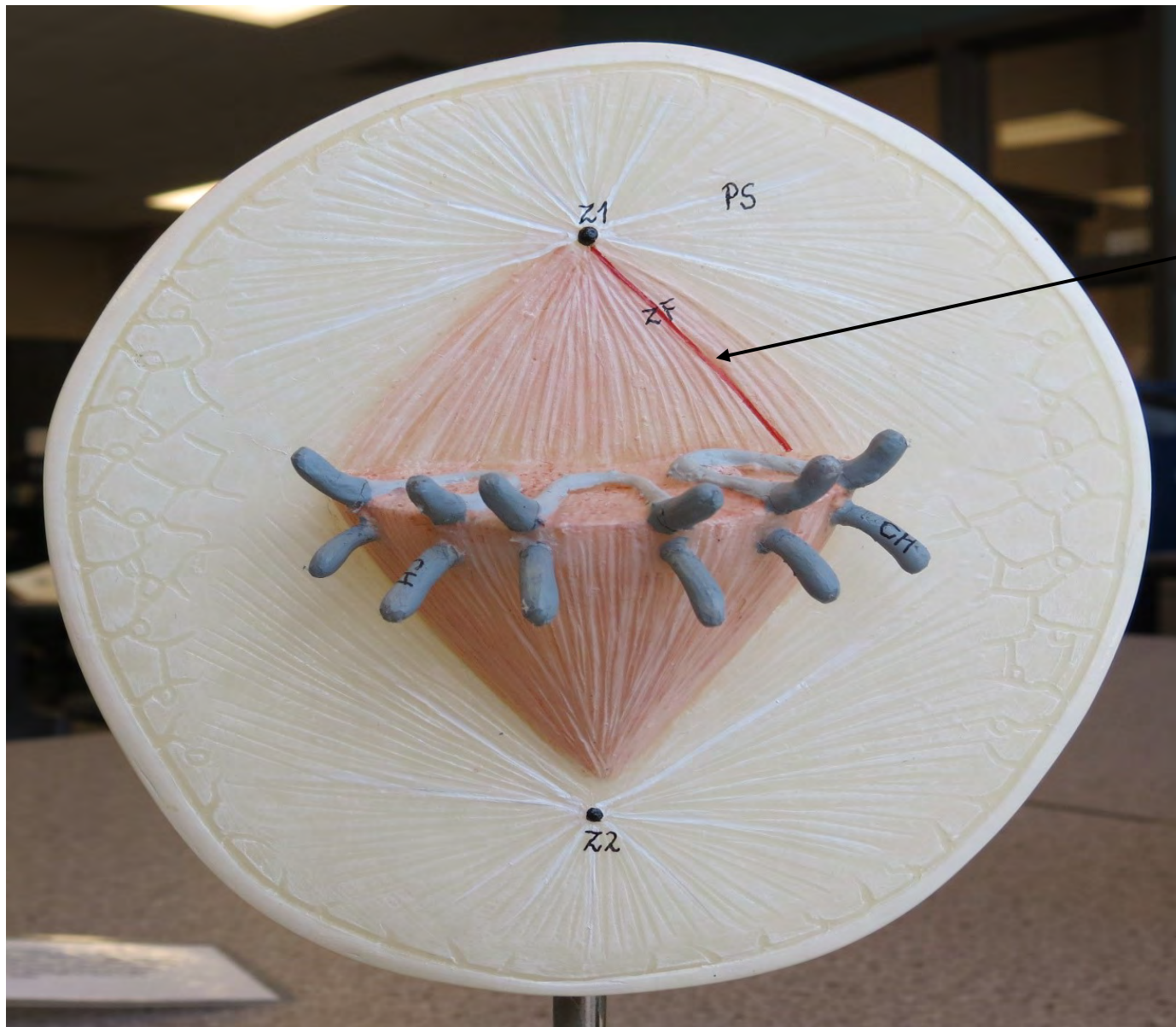
Centrioles are at opposite ends. Nucleus breaks apart, forming chromosomes.

Late Prophase

MITOSIS MODEL



MITOSIS MODEL

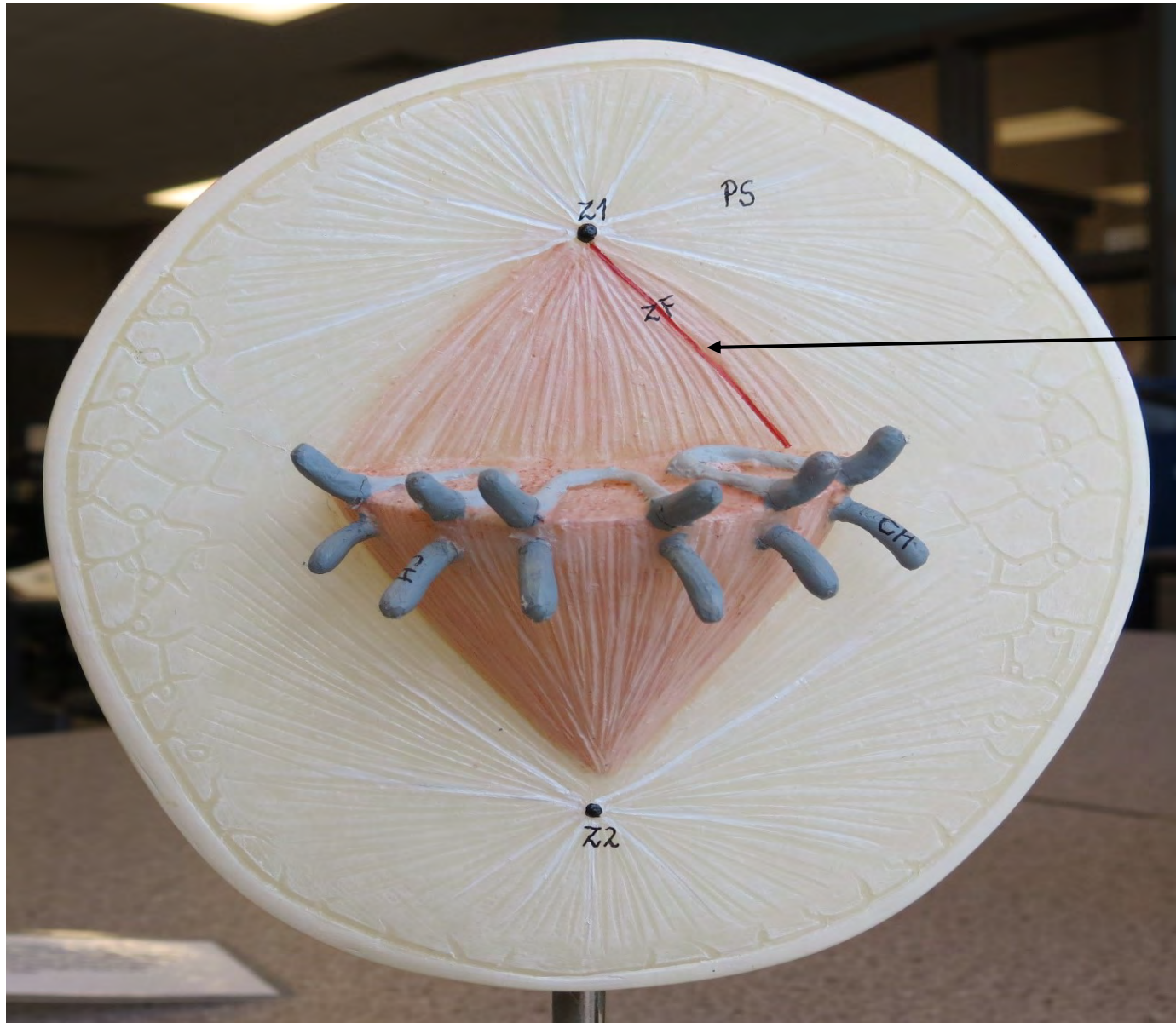


Spindle Fiber

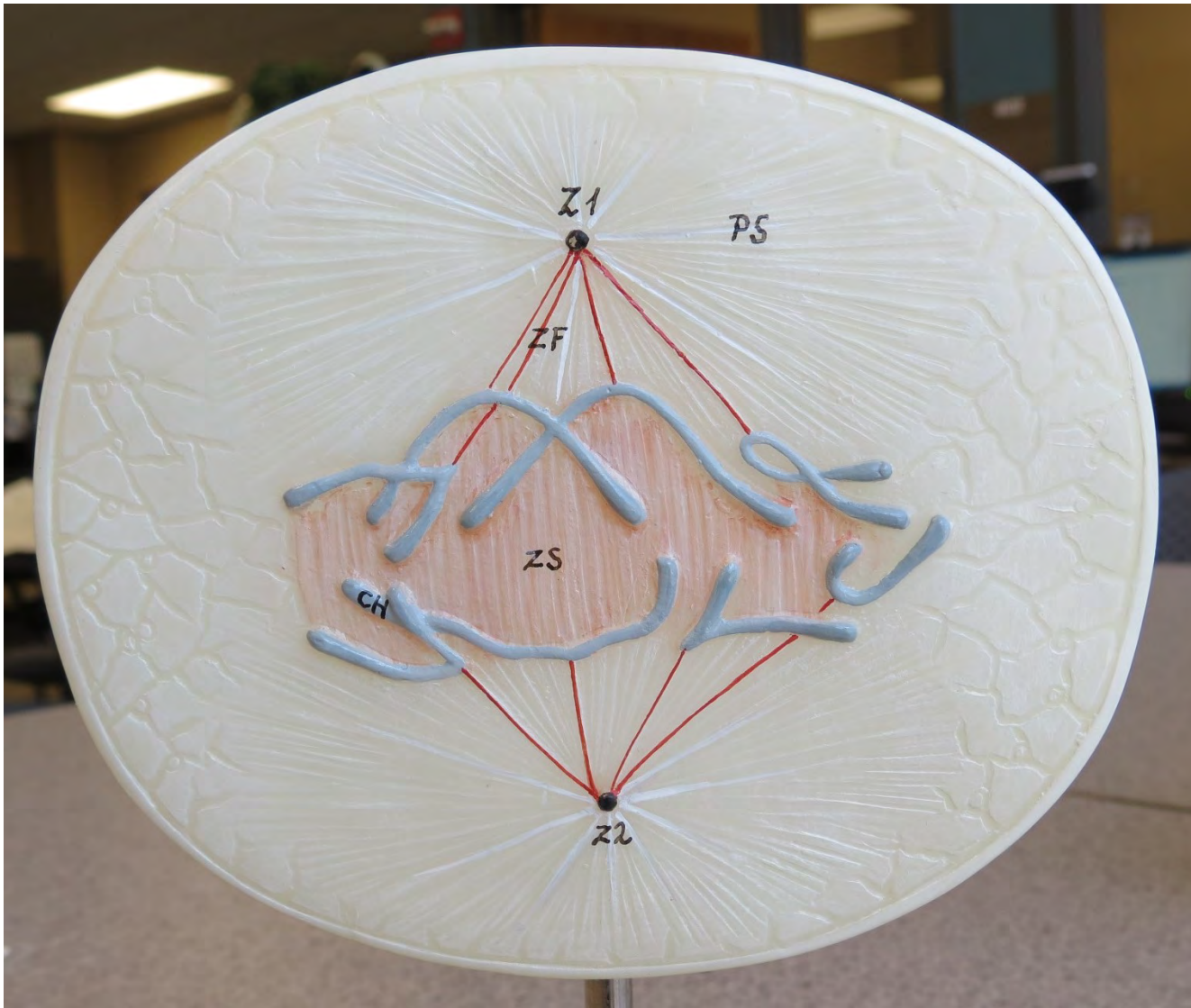
**Chromosomes
are aligned in the
middle of the cell
forming sister
chromatids.**

Metaphase

MITOSIS MODEL



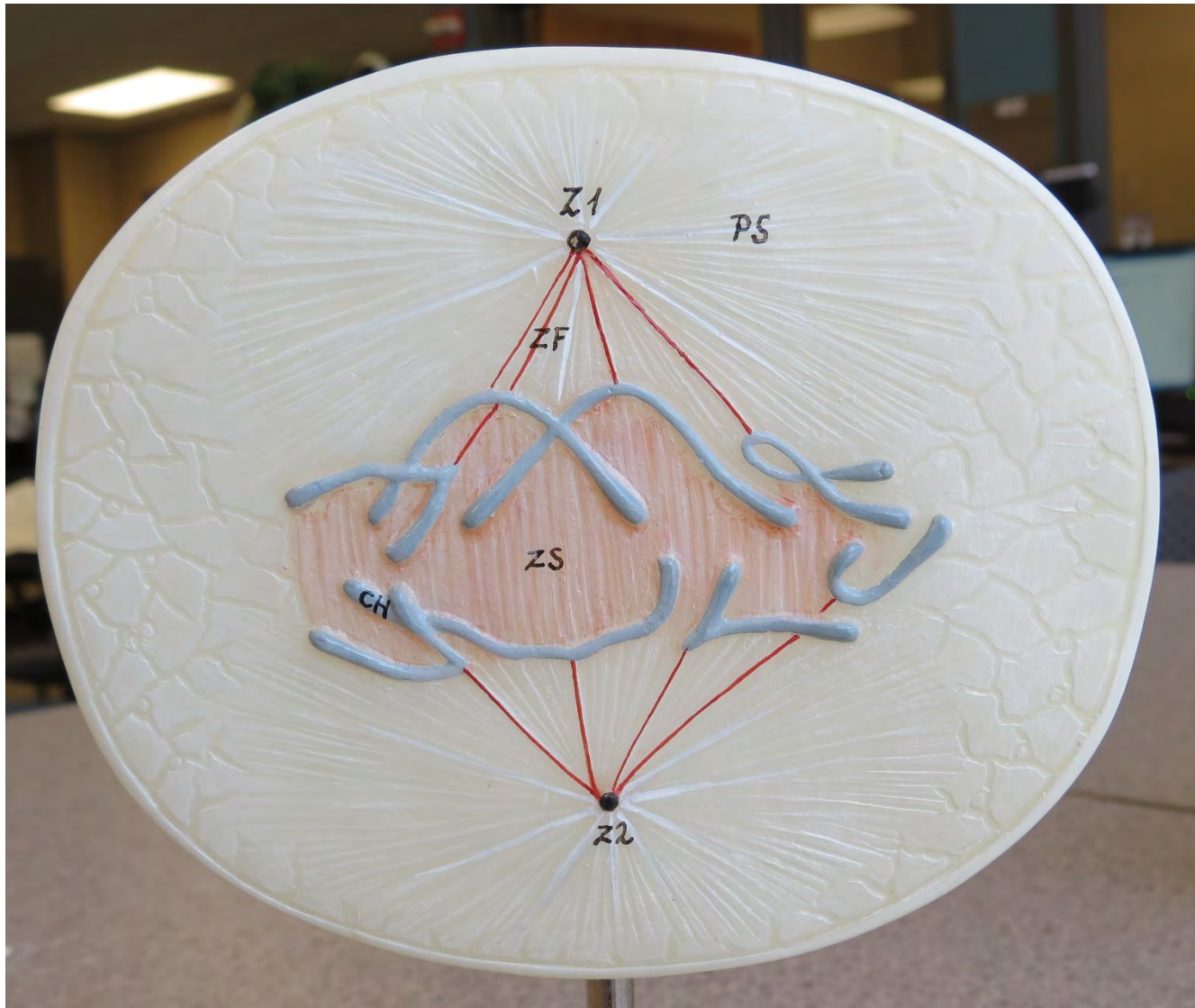
MITOSIS MODEL



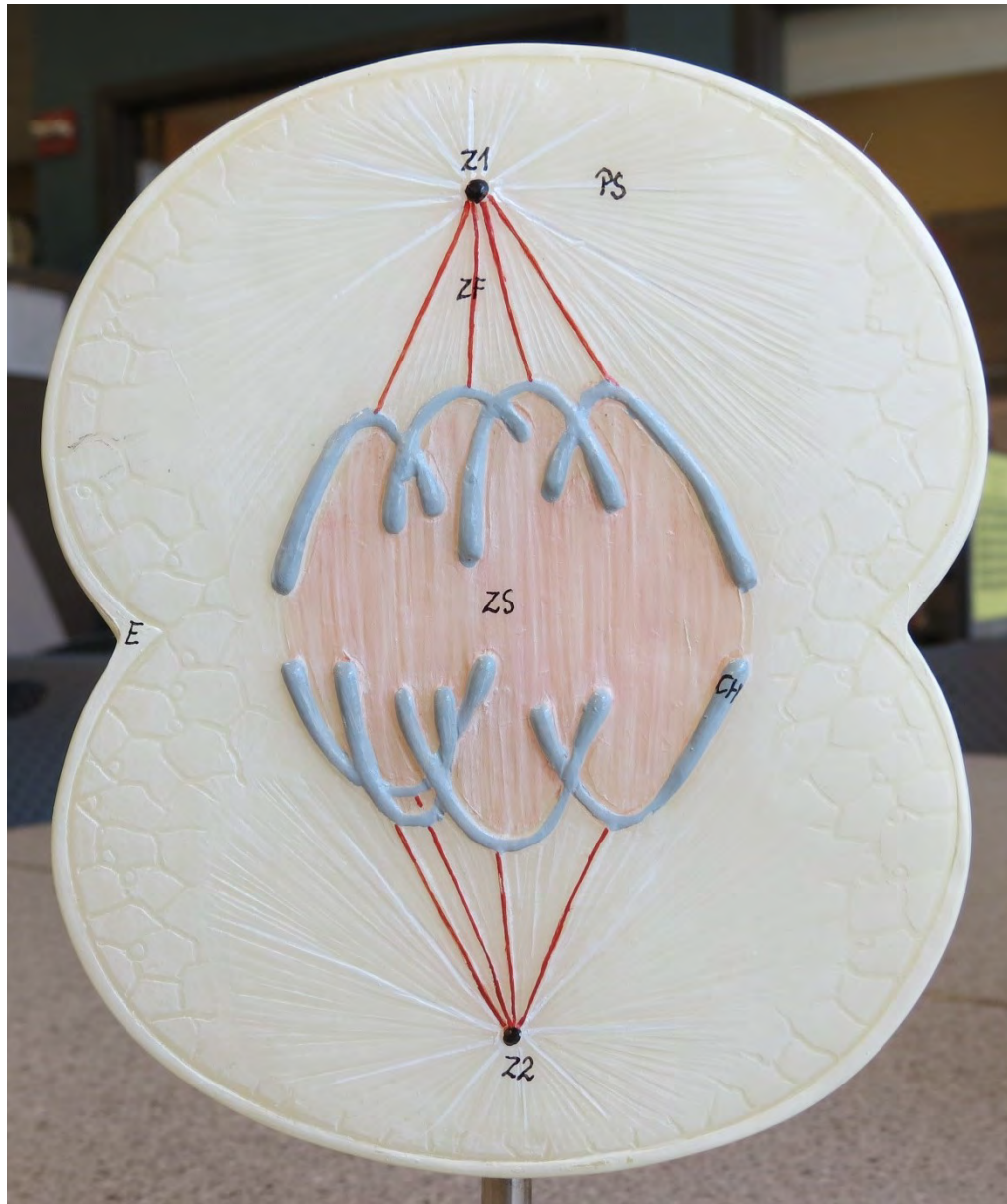
**Sister chromatids
separate forming
daughter
chromosomes.**

Anaphase

MITOSIS MODEL



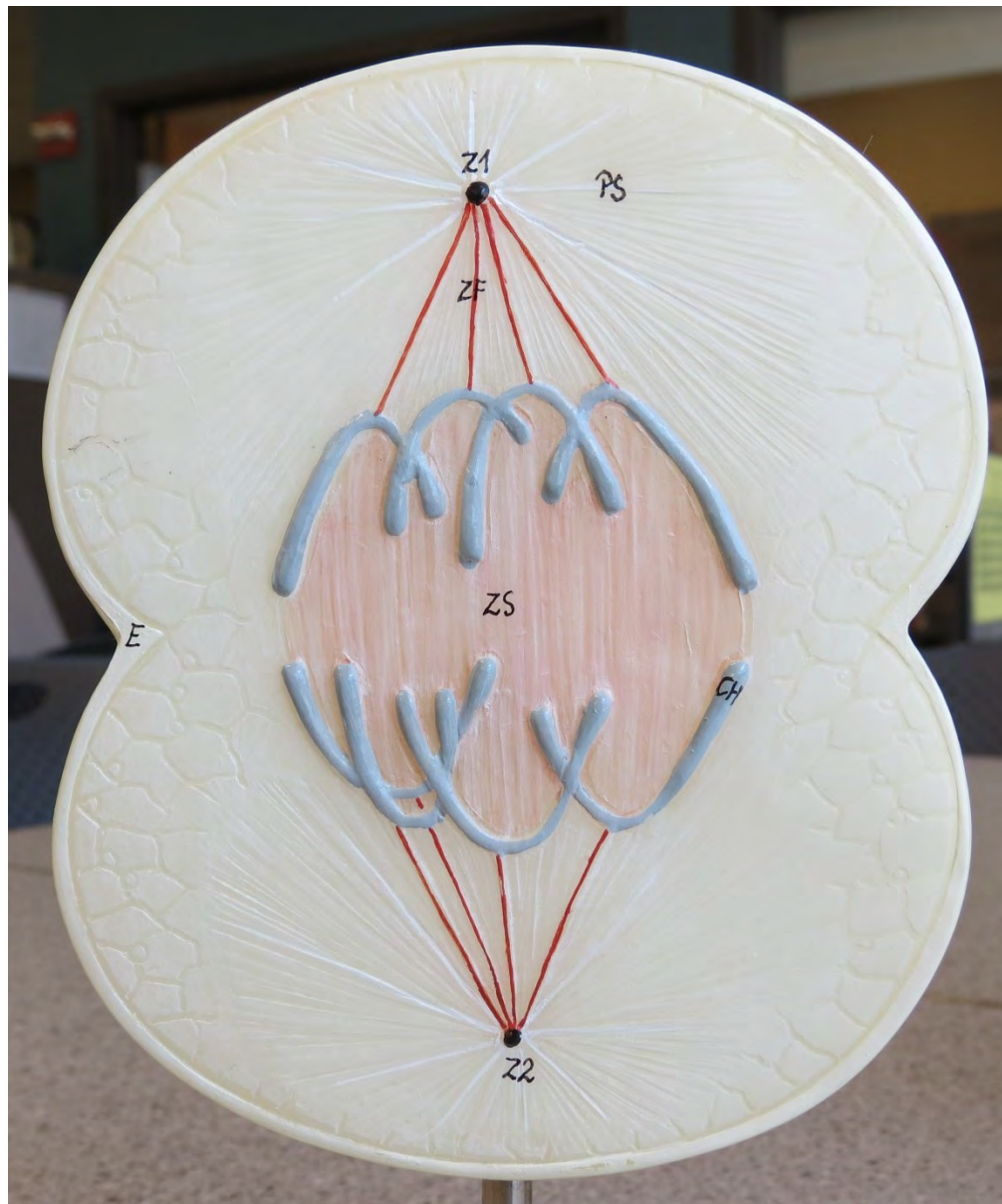
MITOSIS MODEL



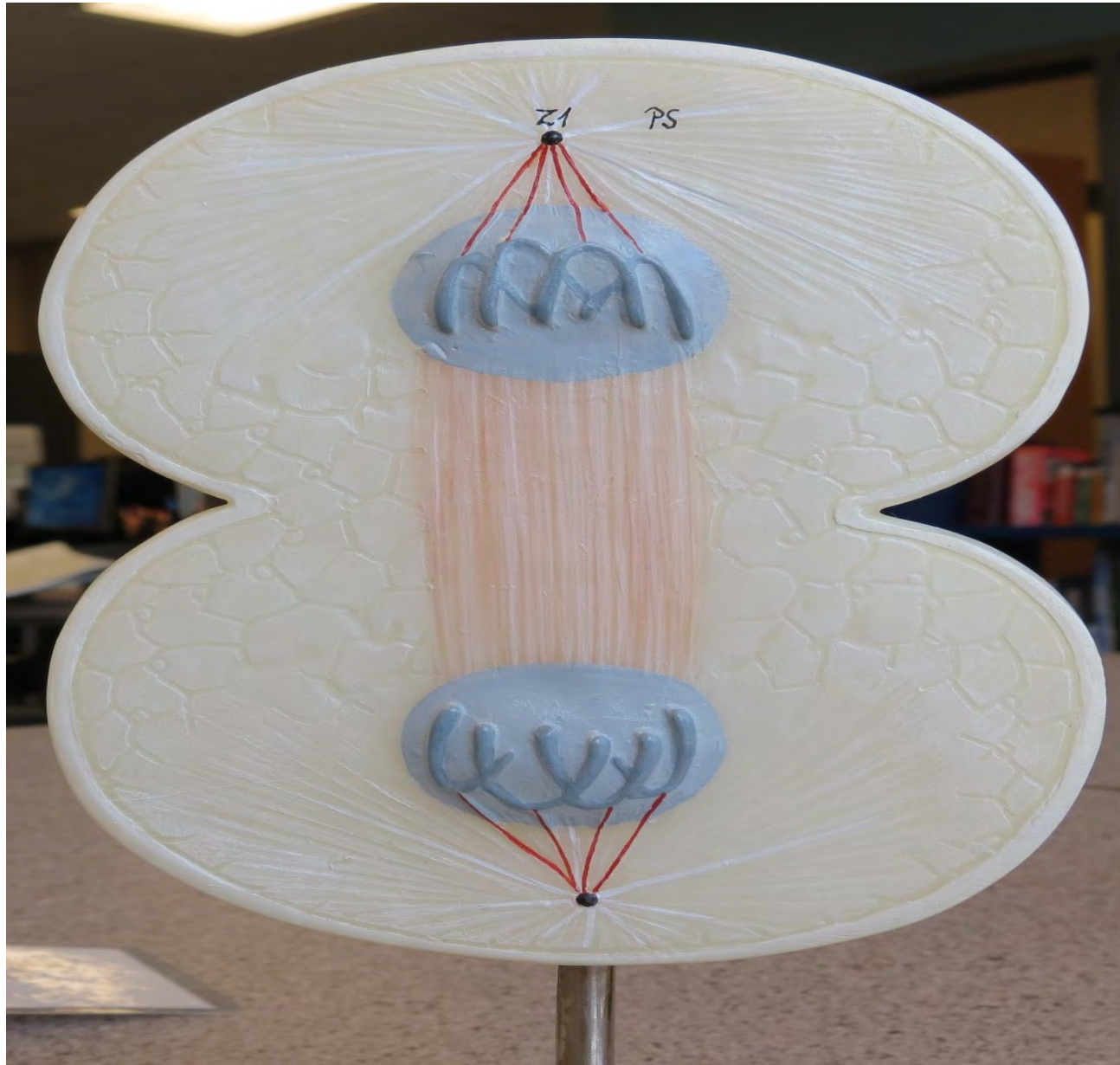
**Daughter chromosomes
become further separated.**

Late Anaphase

MITOSIS MODEL



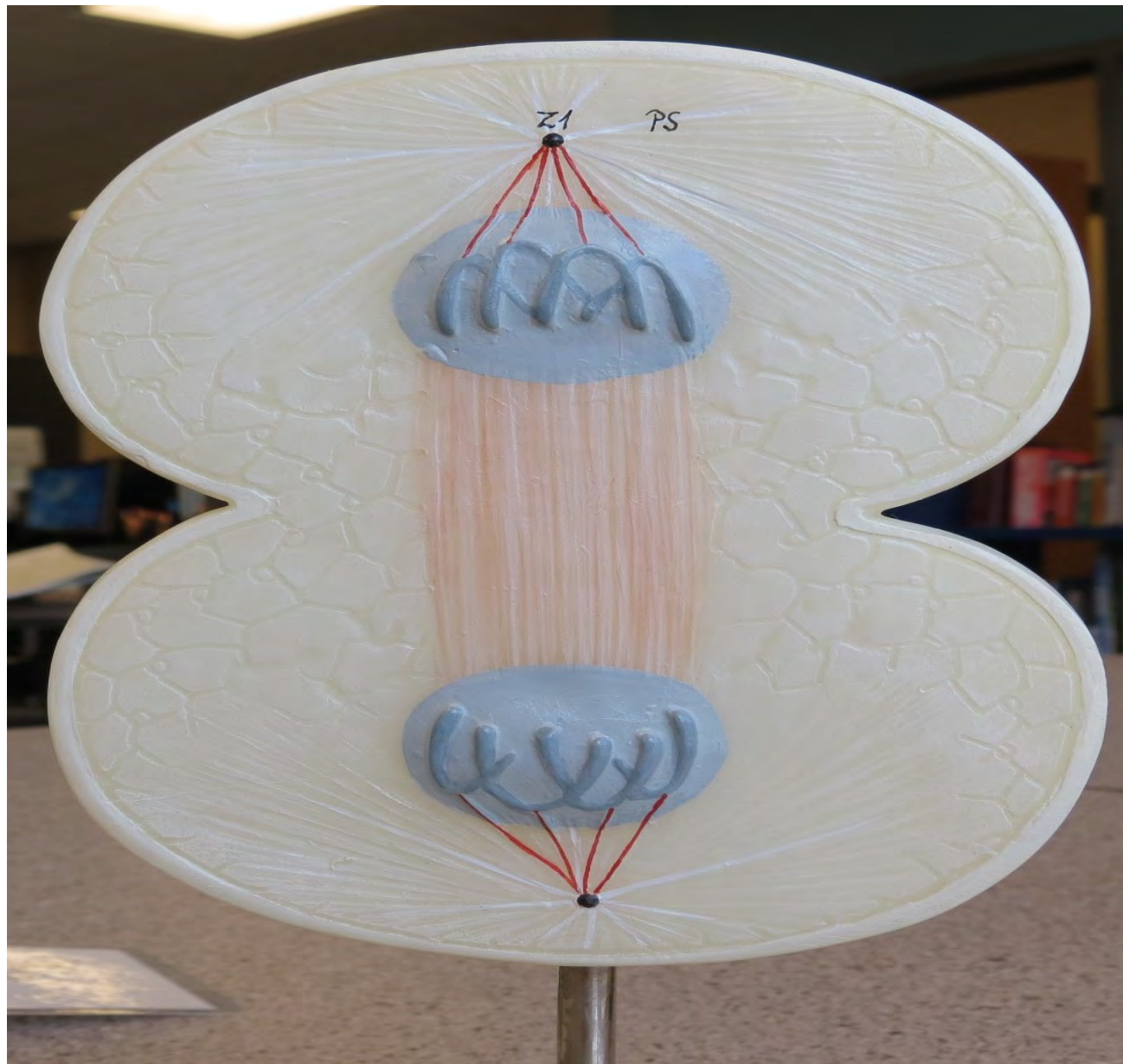
MITOSIS MODEL



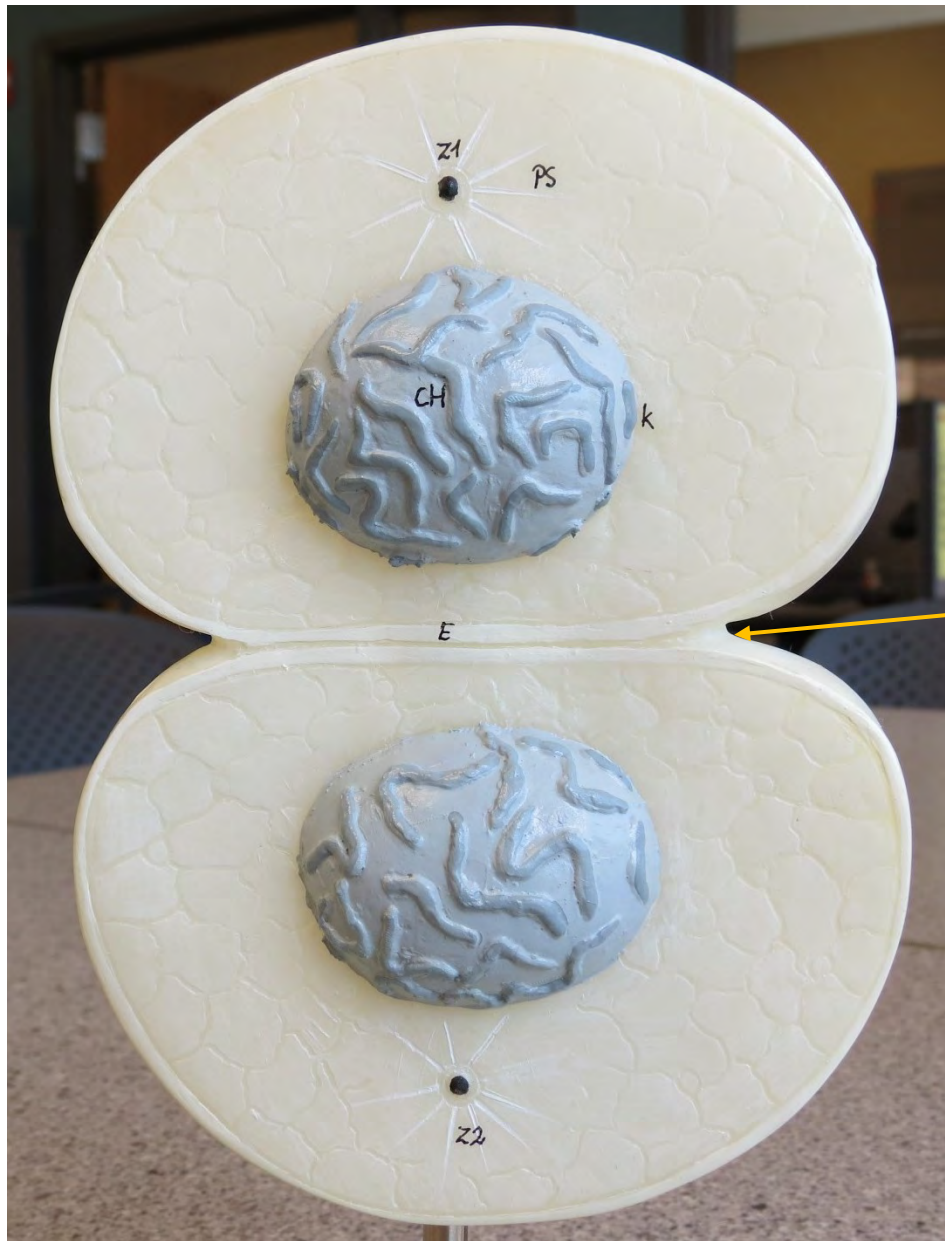
Chromosomes have completed their separation forming new nuclei. Cytokinesis causes cleavage furrow.

Telophase

MITOSIS MODEL



MITOSIS MODEL

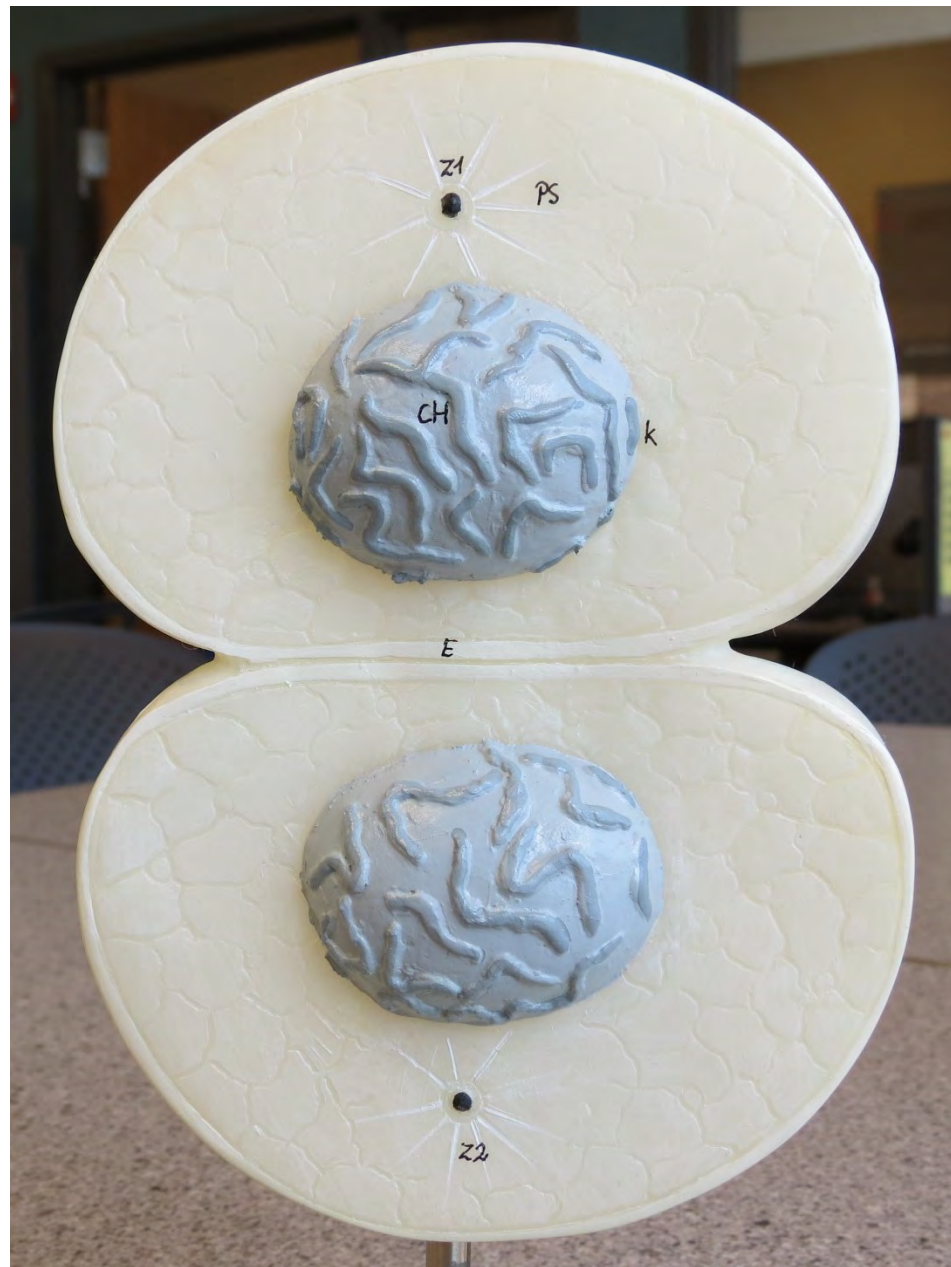


(Note cell boundary between cells.)

Cytokinesis has been completed. We now have 2 individual cells.

Daughter Cells/ Interphase

MITOSIS MODEL



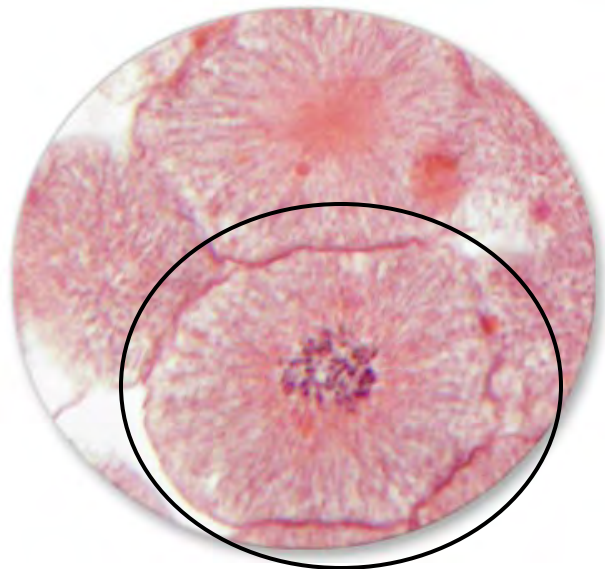
MITOSIS SLIDES



INTERPHASE



**EARLY
PROPHASE**

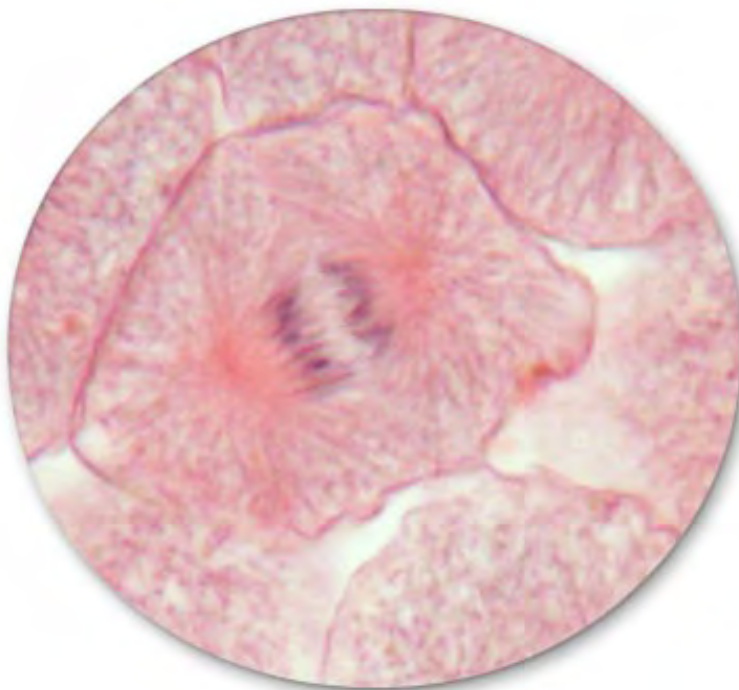


**LATE
PROPHASE**

MITOSIS SLIDES



METAPHASE

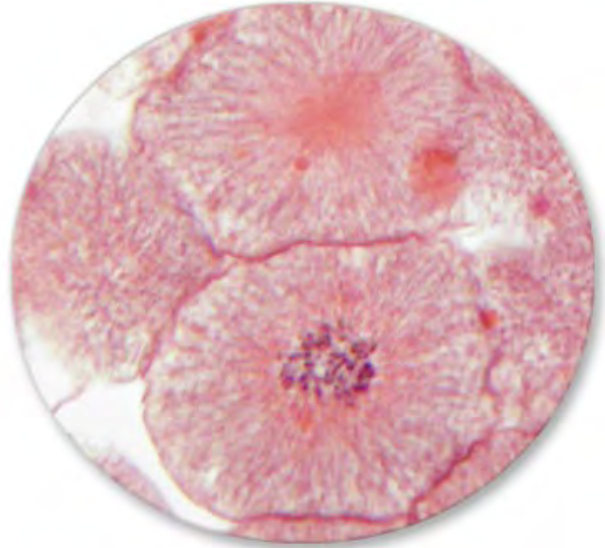


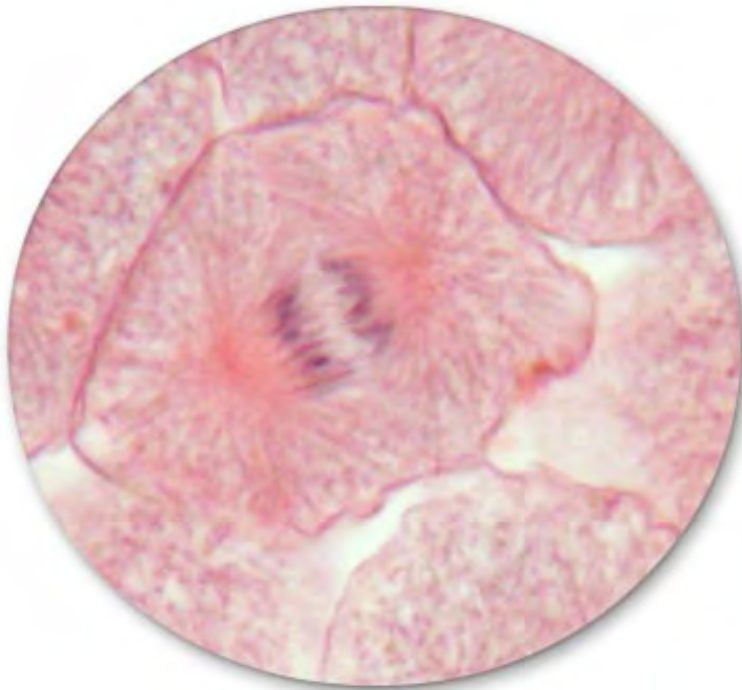
ANAPHASE

MITOSIS SLIDES



TELOPHASE





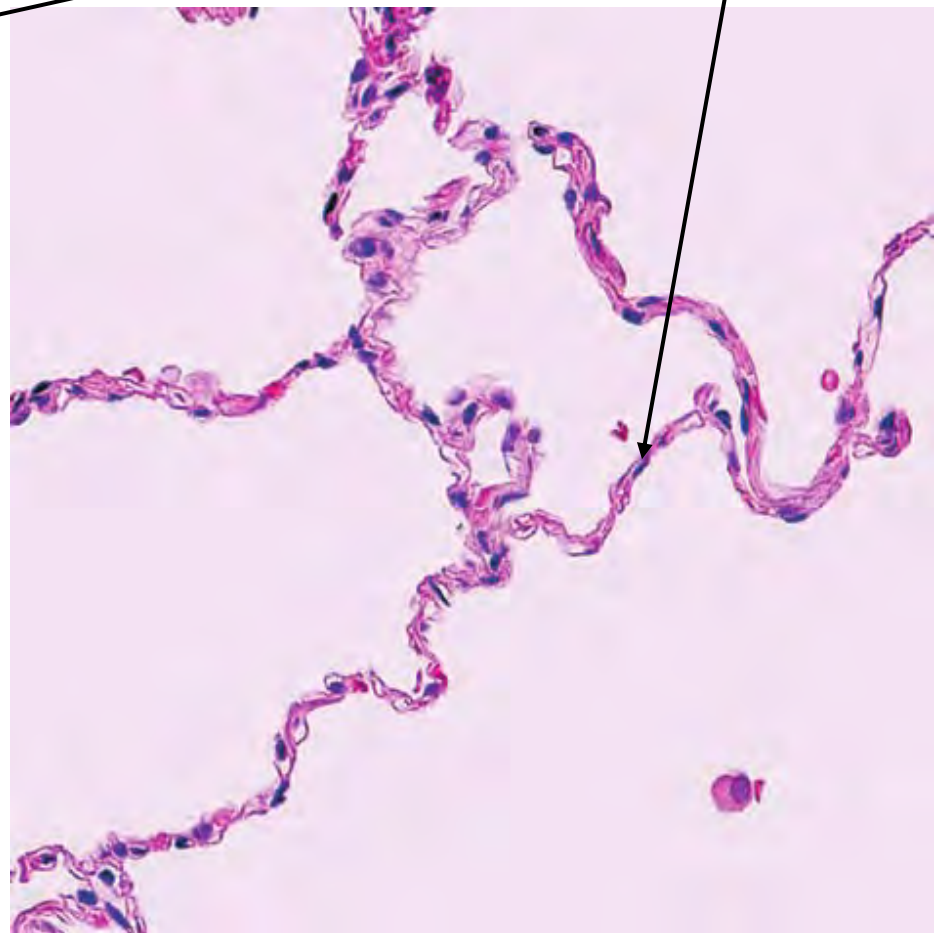
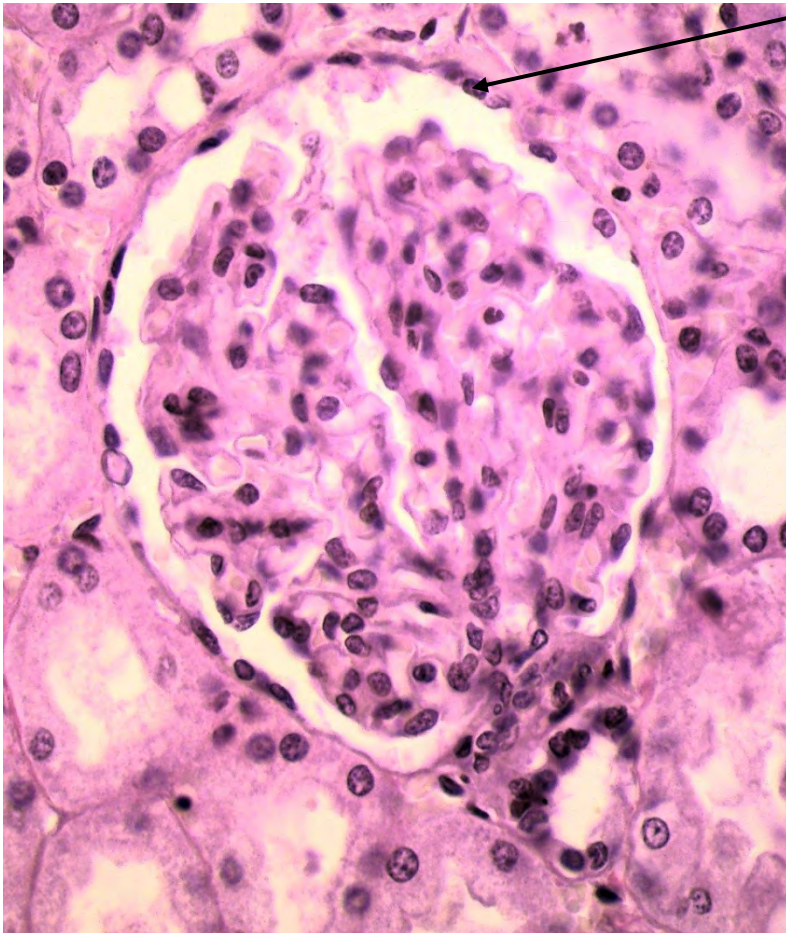


SIMPLE SQUAMOUS EPITHELIUM

Function: Diffusion and filtration

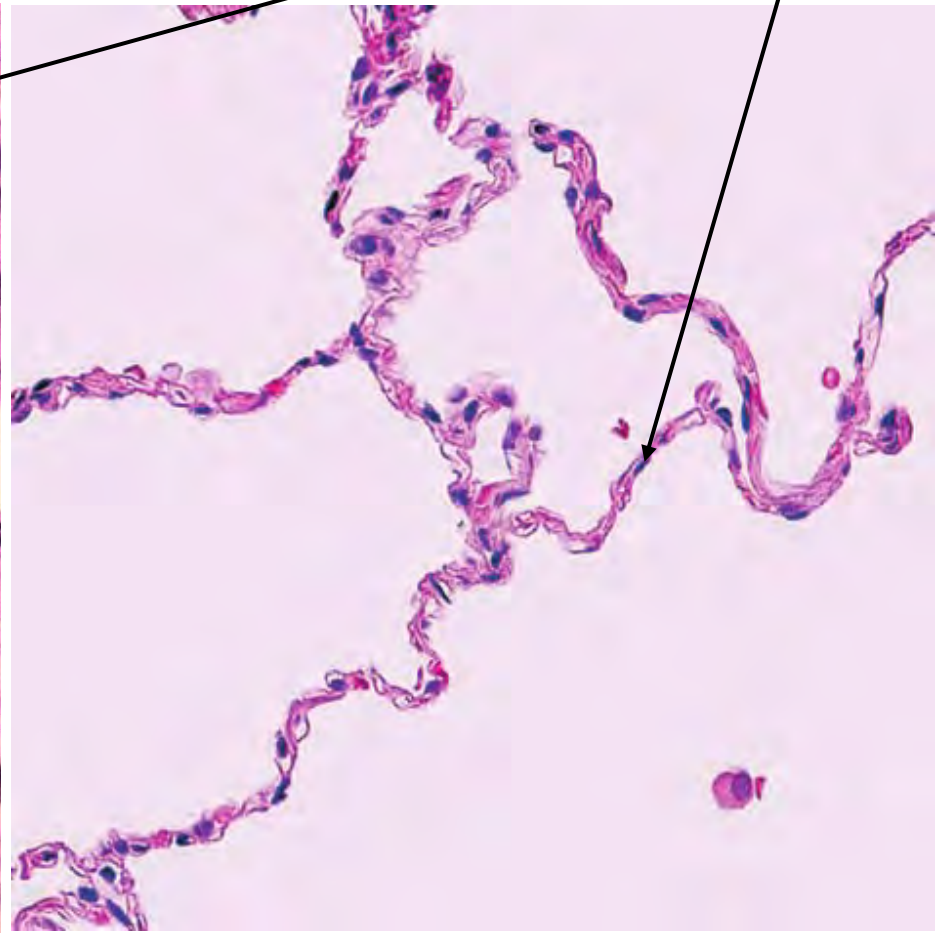
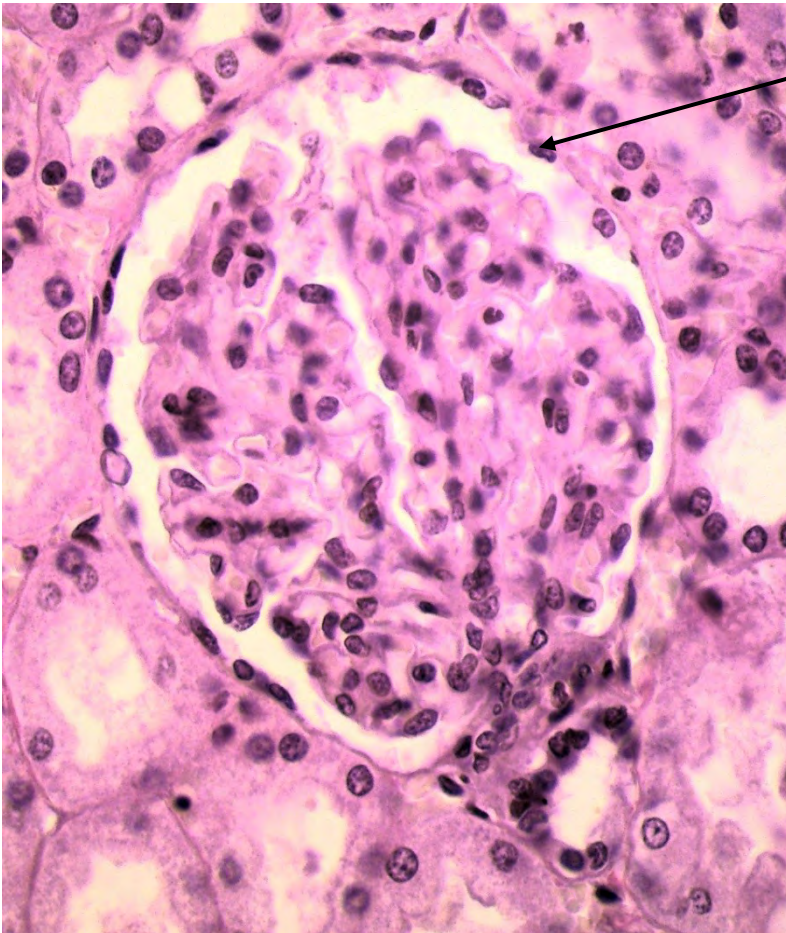
Location: Lung alveoli, kidney glomerulus, capillary walls

Simple Squamous Epithelium



Function: _____ and _____

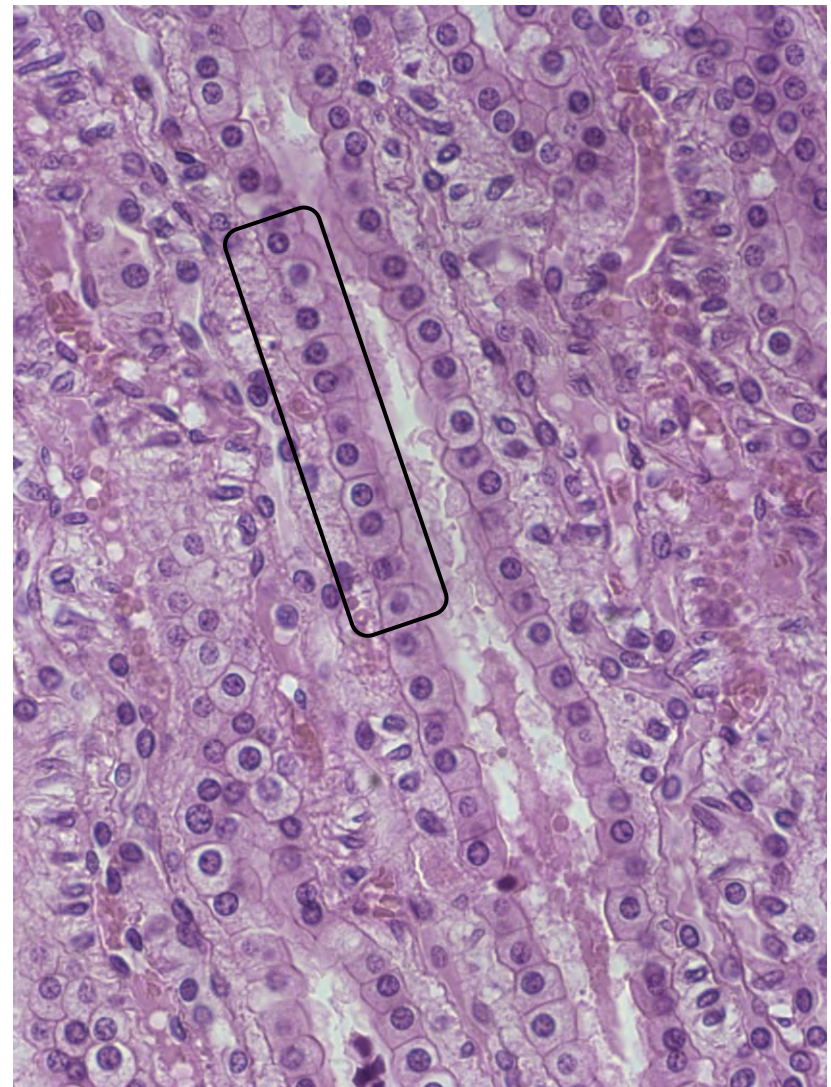
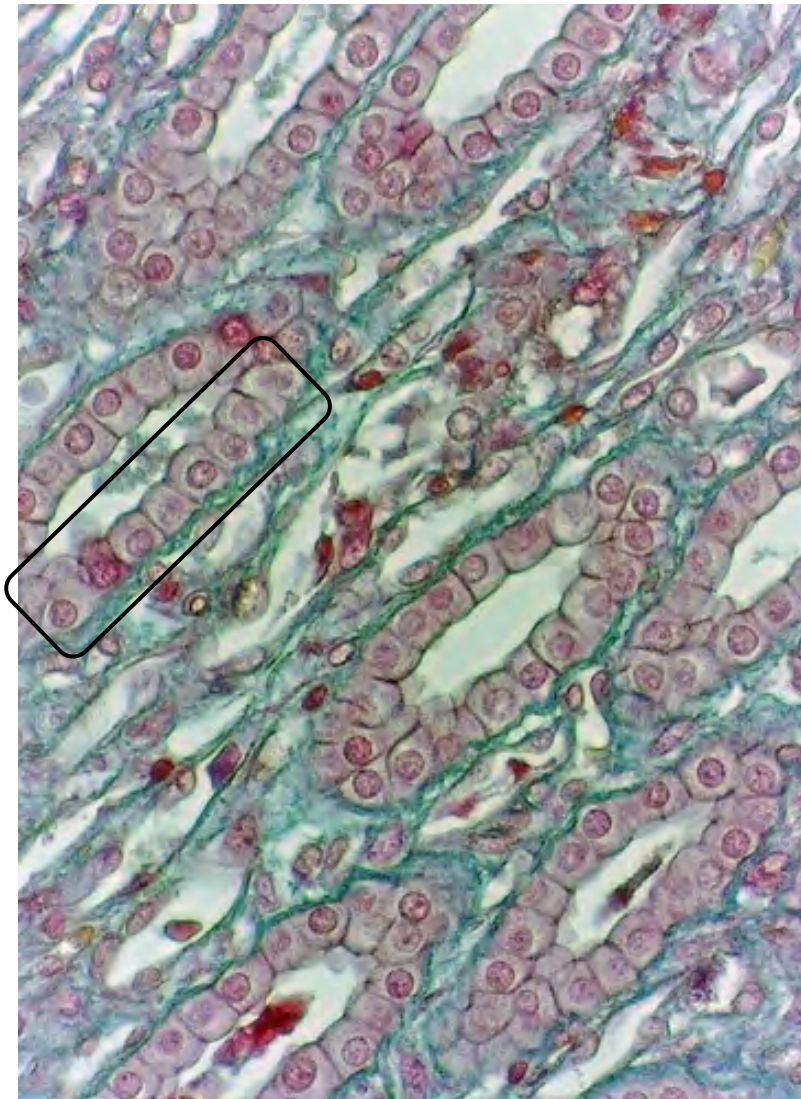
Location: _____, _____, and _____



SIMPLE CUBOIDAL EPITHELIUM

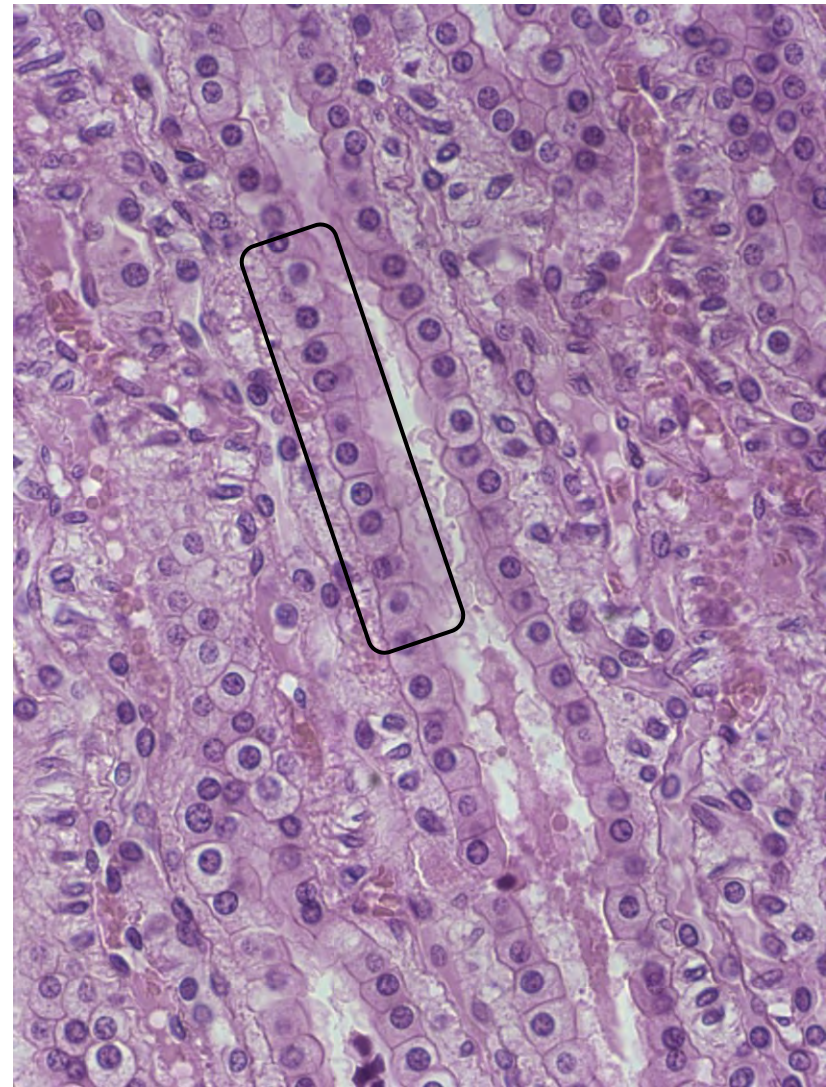
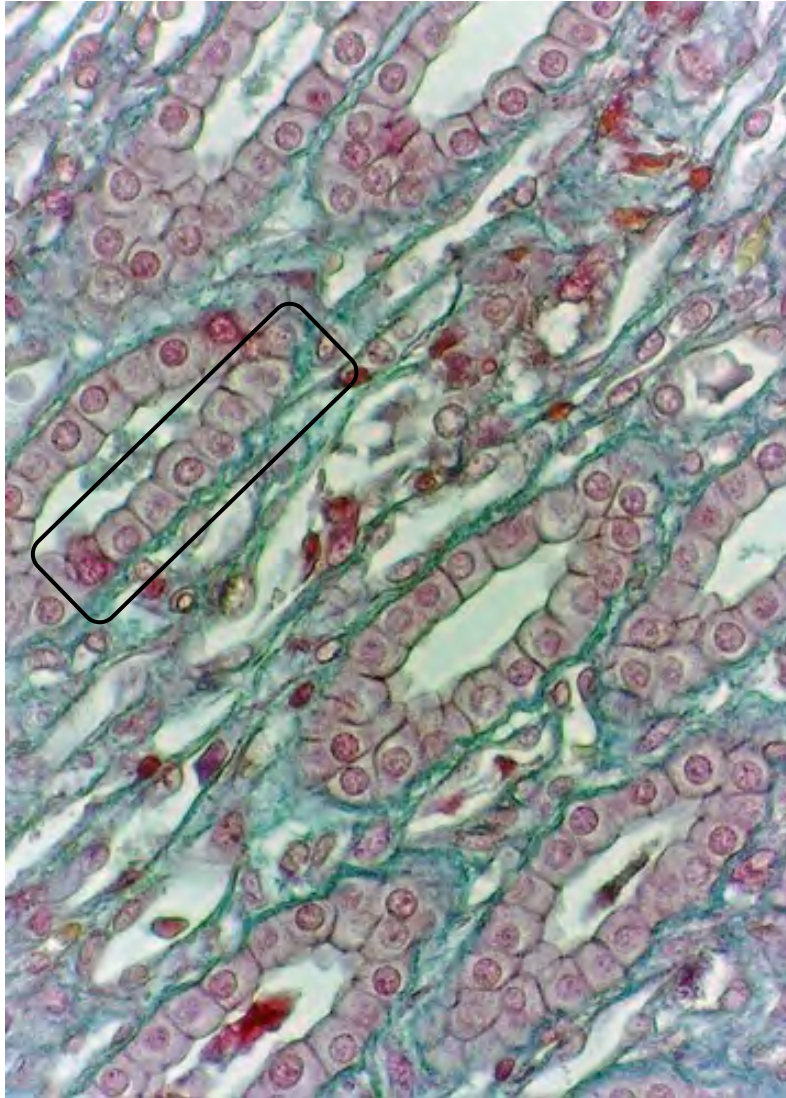
Function: Secretion and some absorption

Location: Any secretory gland, kidney tubules and other ducts

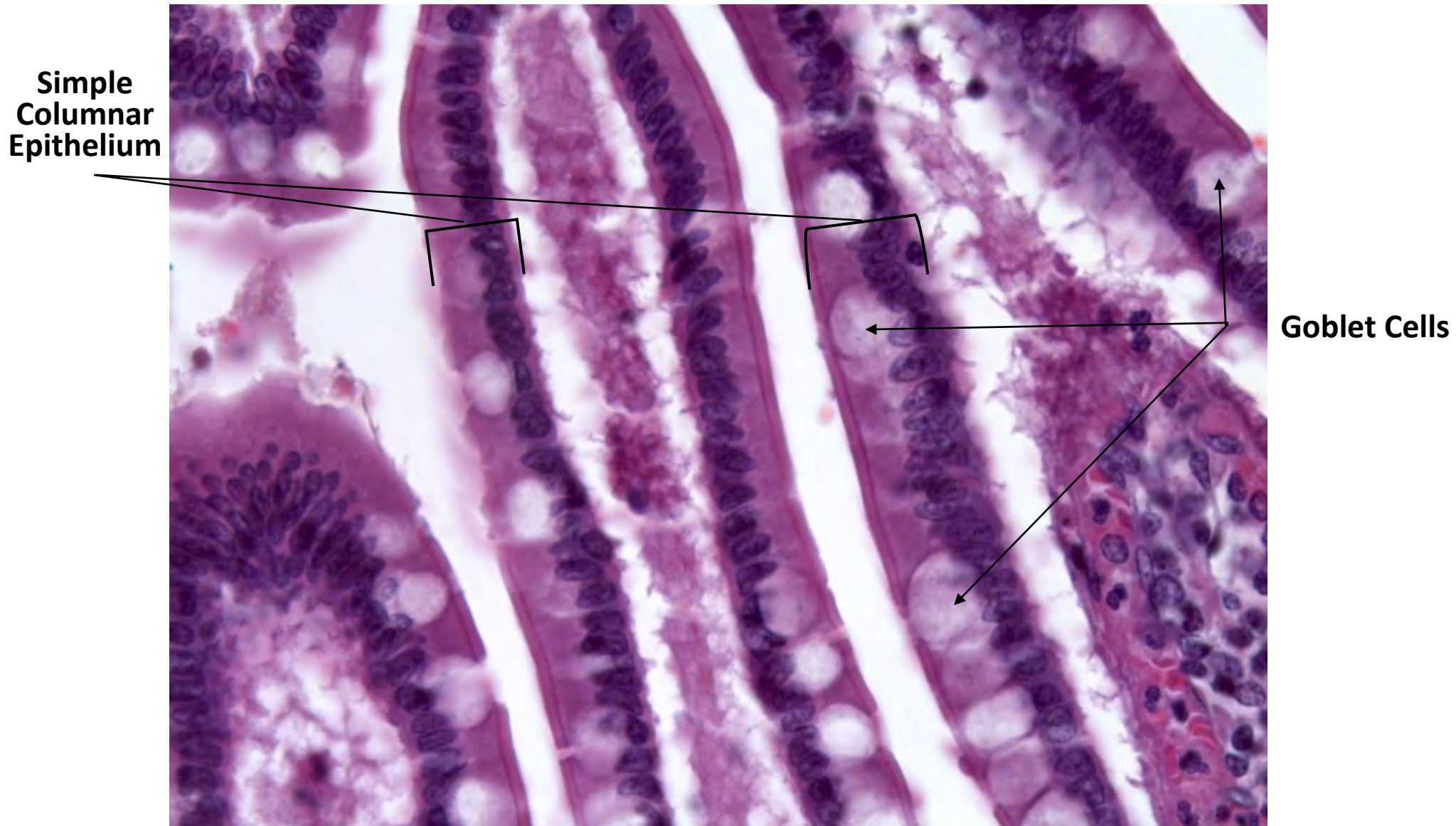


Function: _____ and _____

Location: _____, _____, and _____

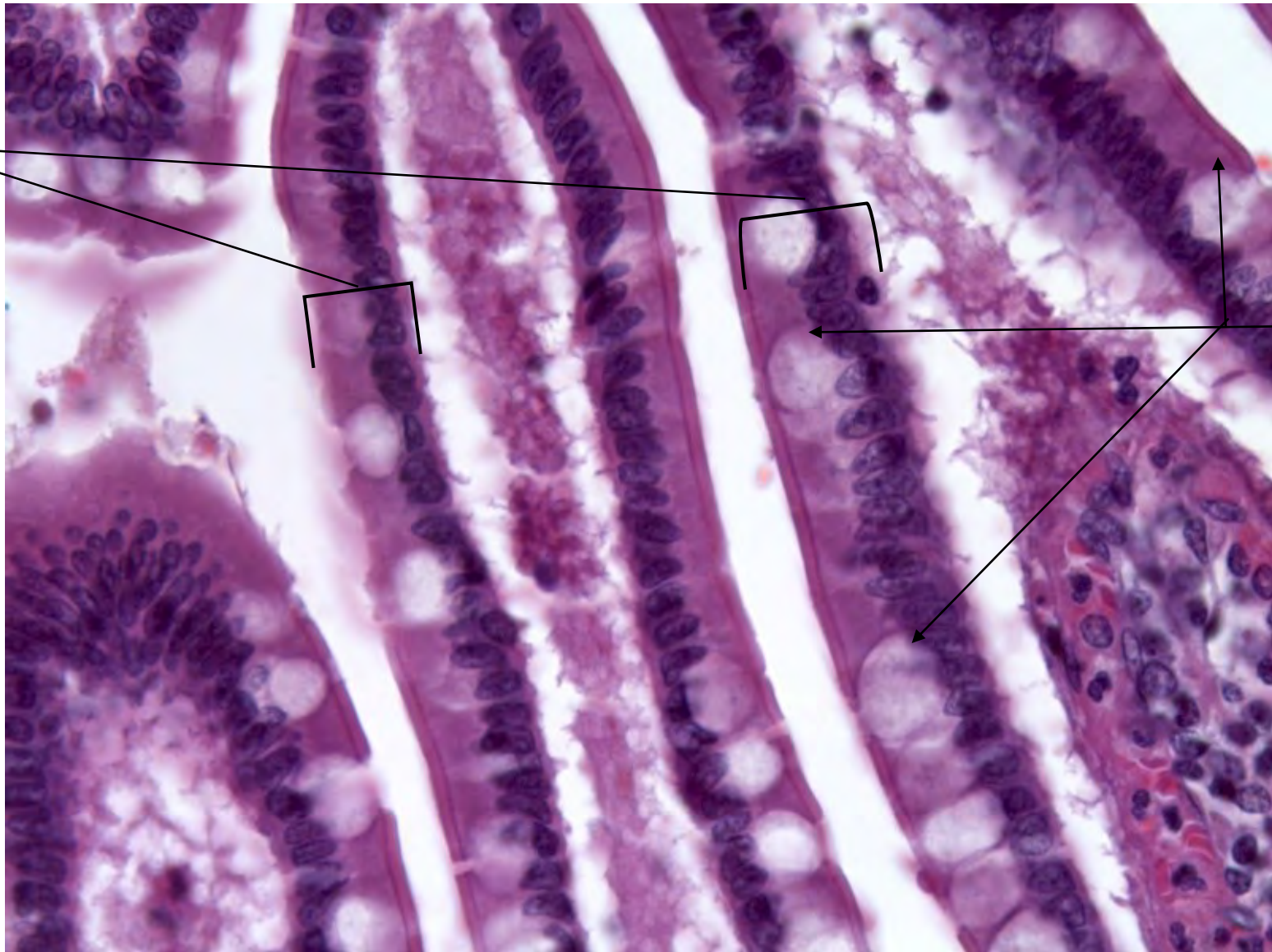


SIMPLE COLUMNAR EPITHELIUM



Function: Absorption or secretion

Location: Lining of small intestine, vas deferens, and other high pressure ducts



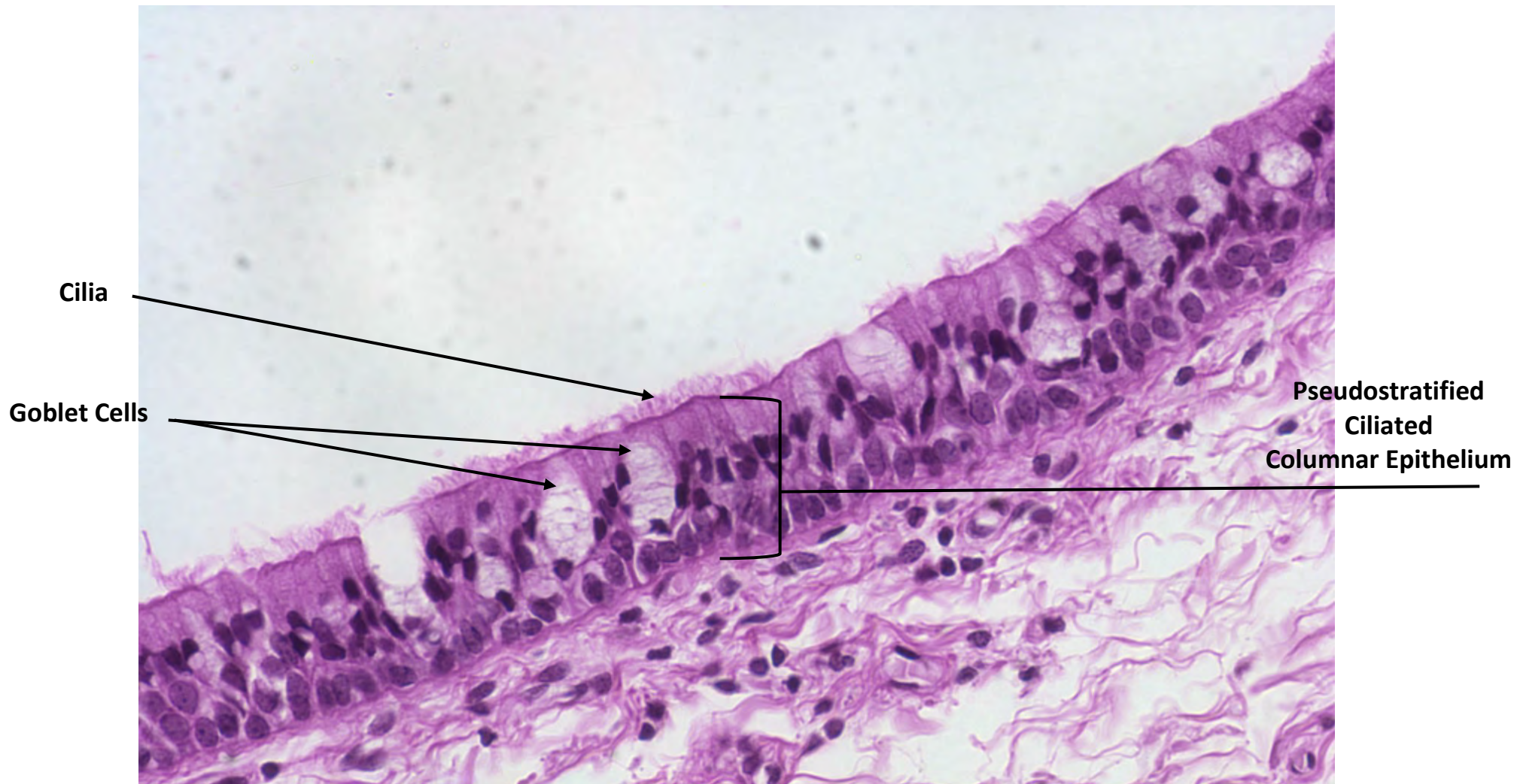
Function: _____

Location: _____, _____, and _____

PSEUDOSTRATIFIED CILIATED COLUMNAR EPITHELIUM

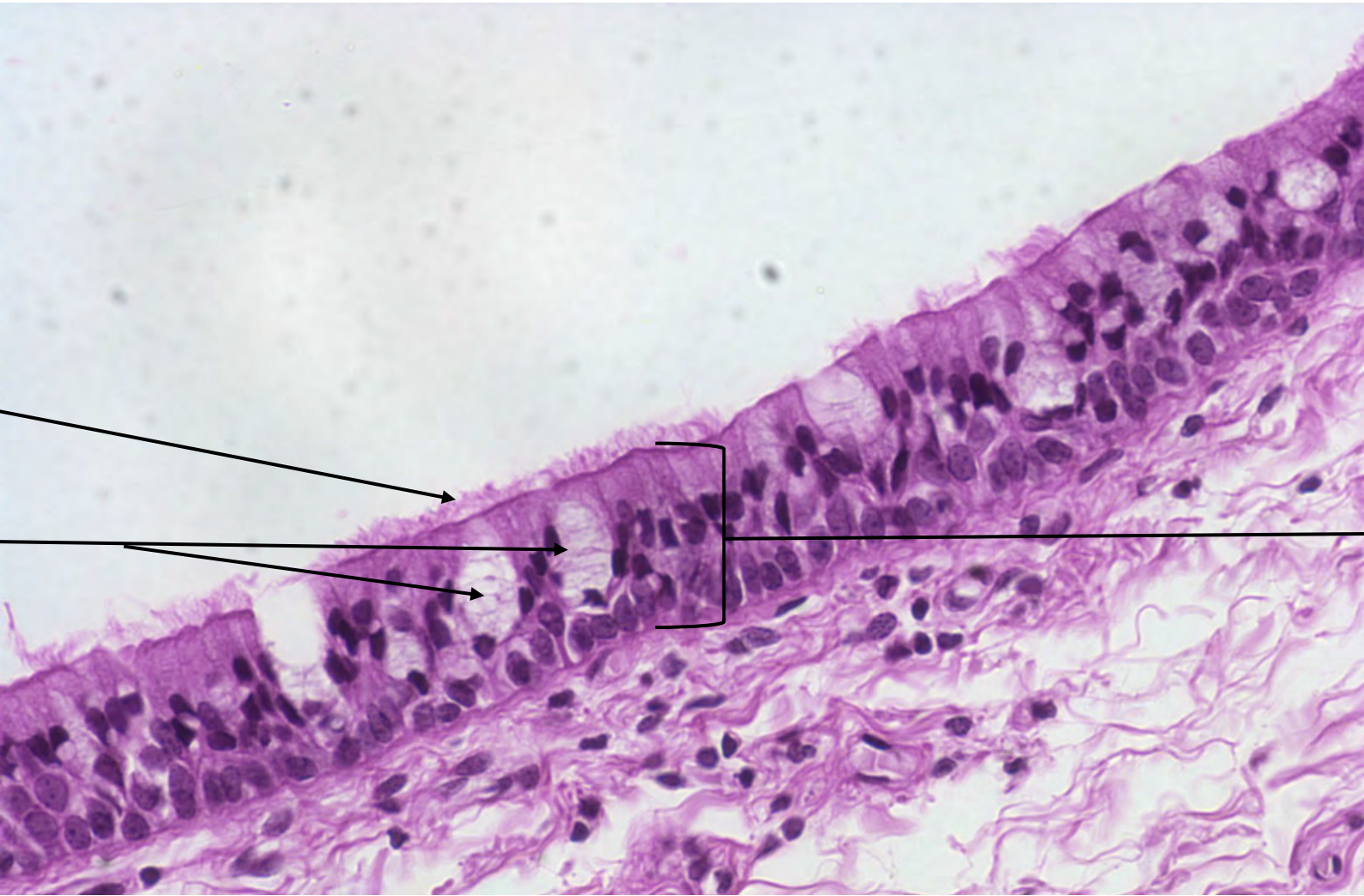
Function: Protection, removal of foreign material

Location: Nasal cavities, sinuses, pharynx, trachea, and bronchi of lungs



Function: _____, _____

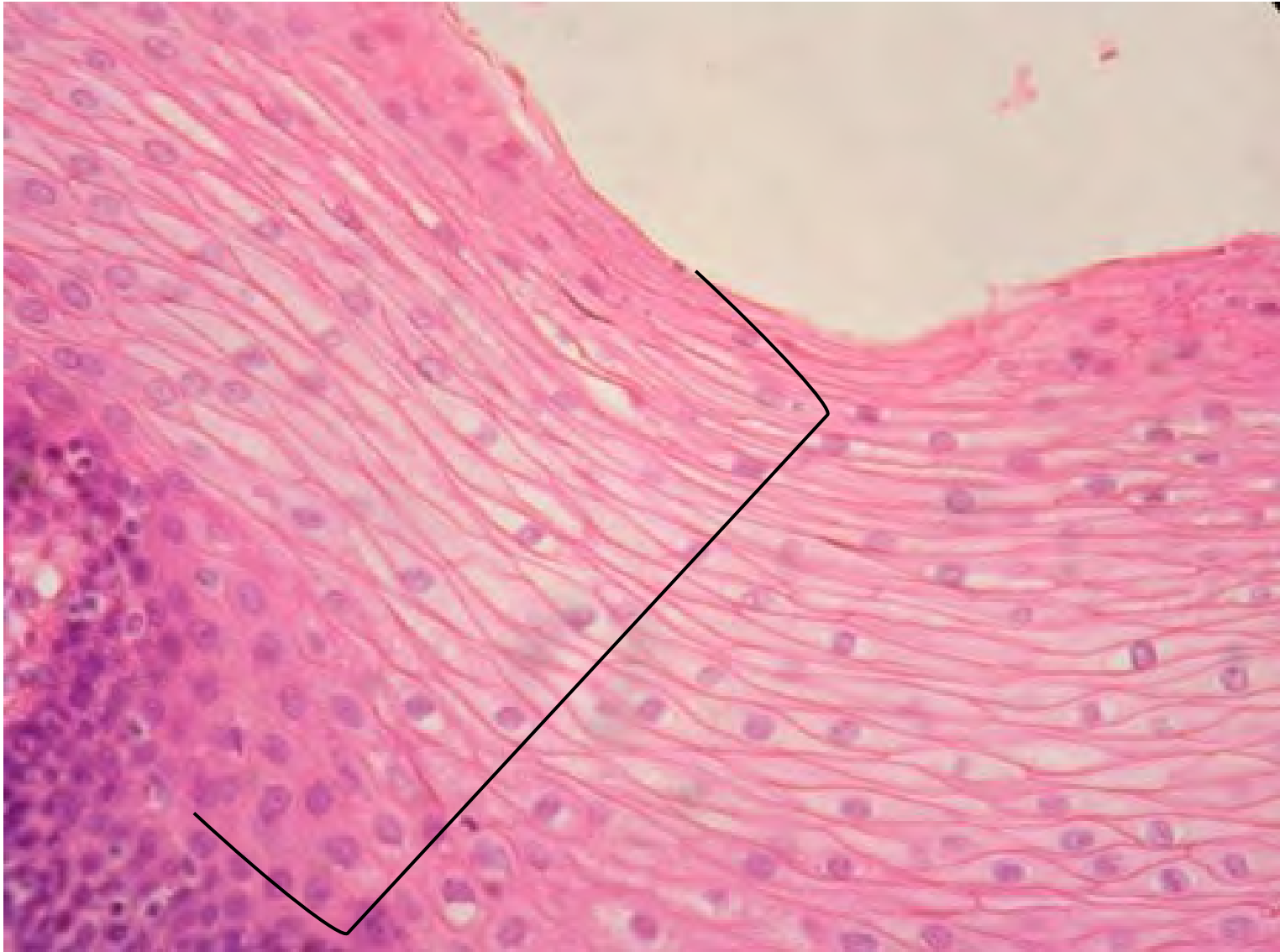
Location: _____, _____, _____, _____, and _____



STRATIFIED SQUAMOUS EPITHELIUM

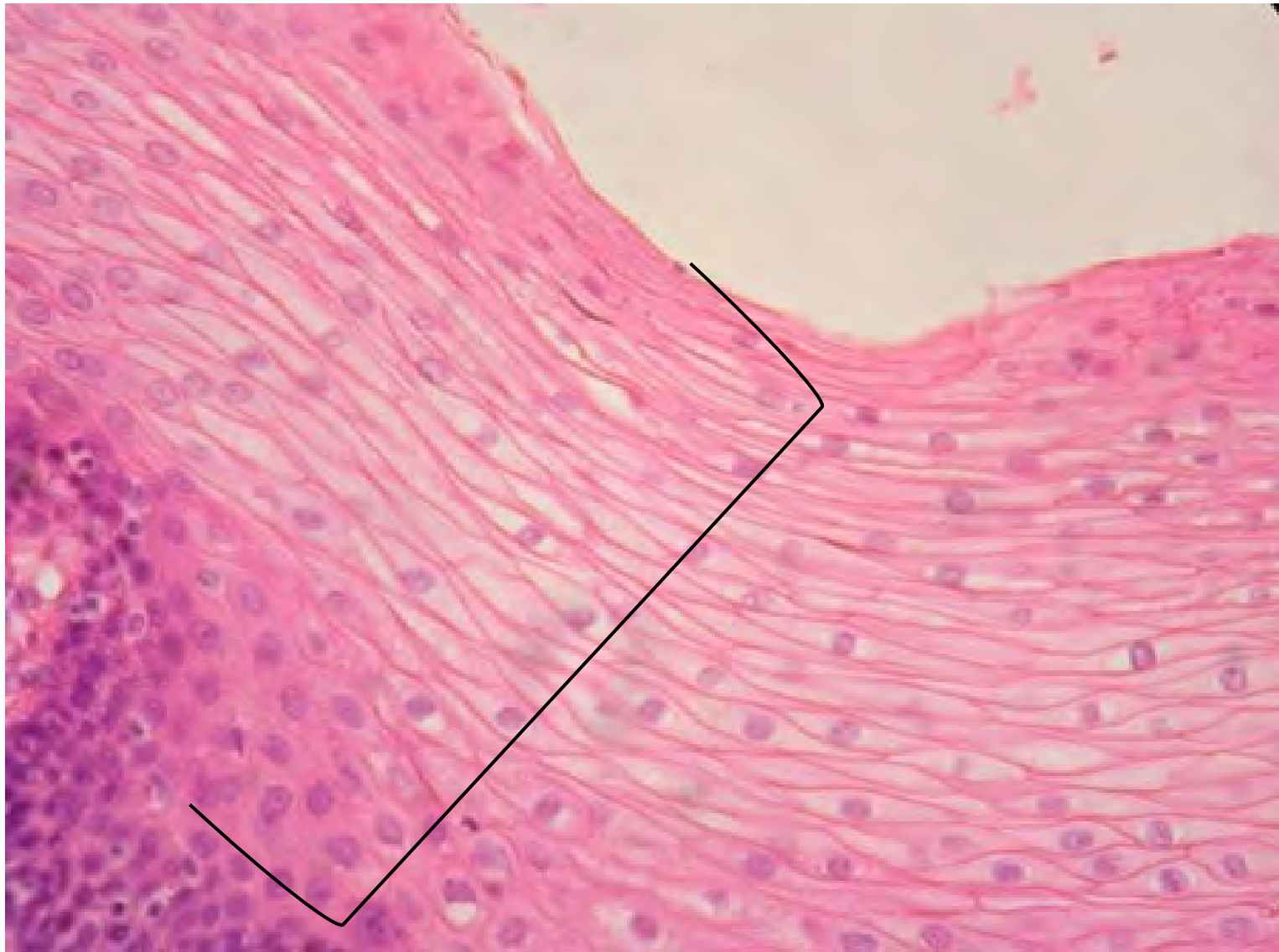
Function: Protection against abrasion

Location: Epidermis, oropharynx, anal canal

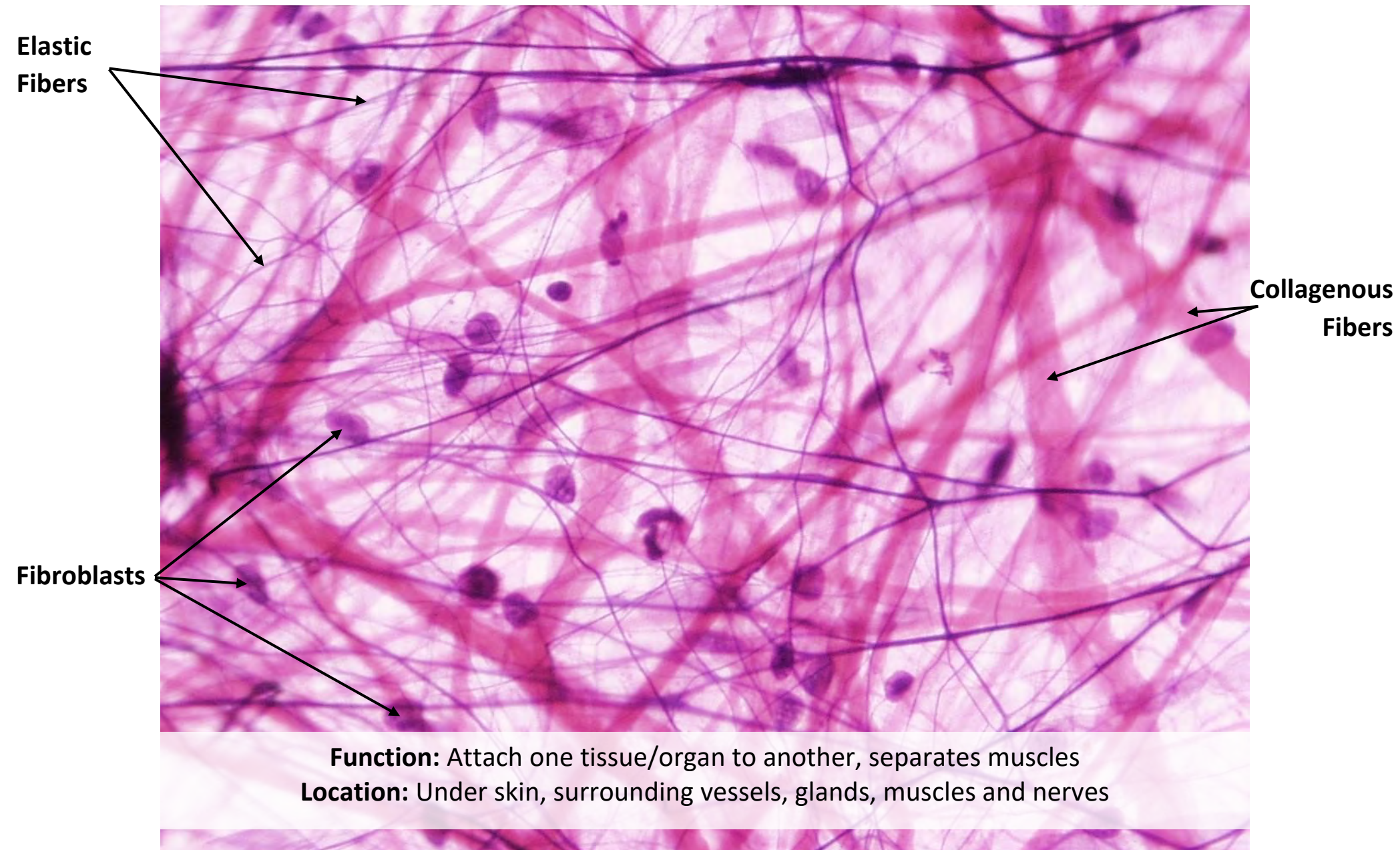


Function: _____

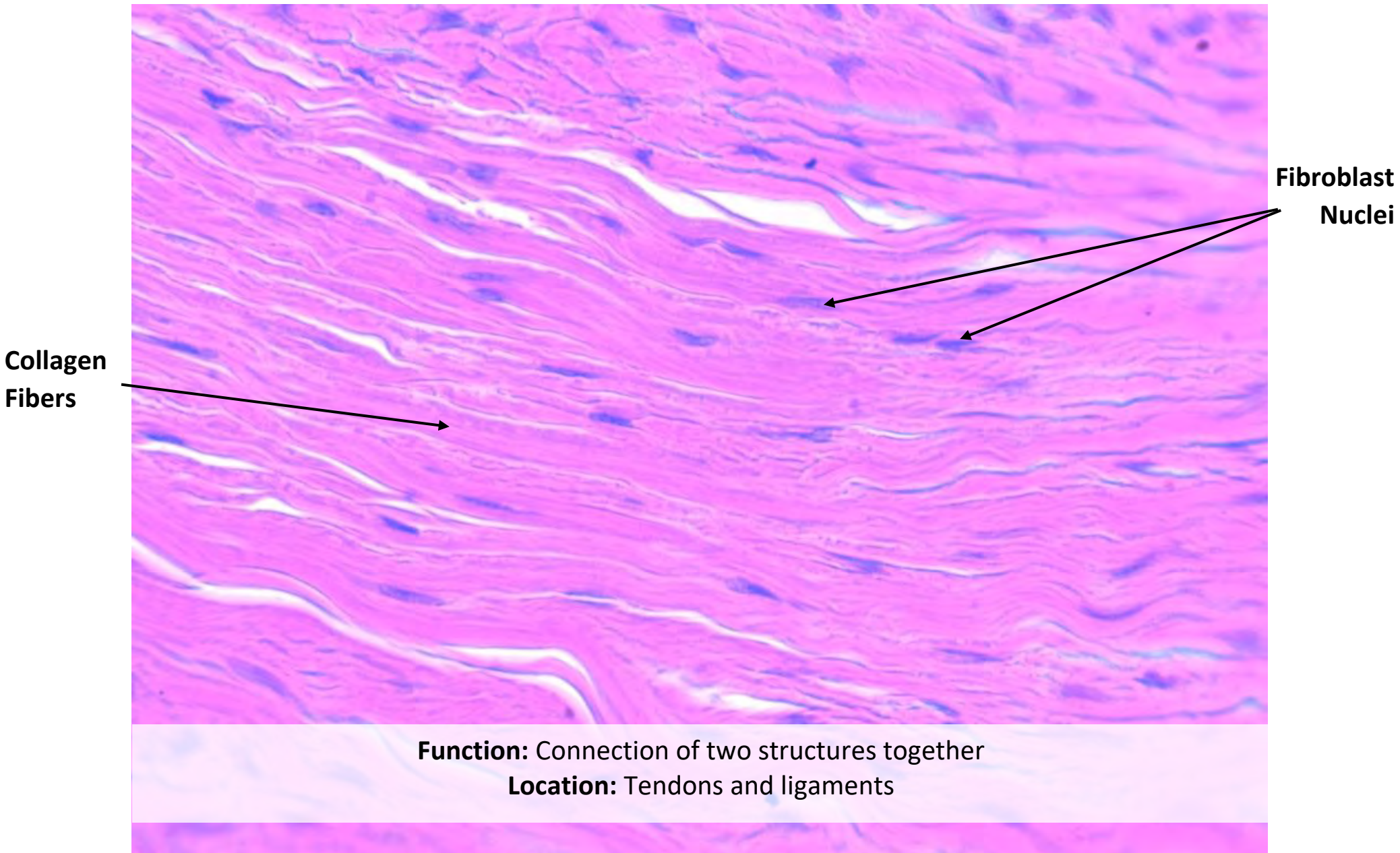
Location: _____, _____, and _____



AREOLAR CONNECTIVE TISSUE



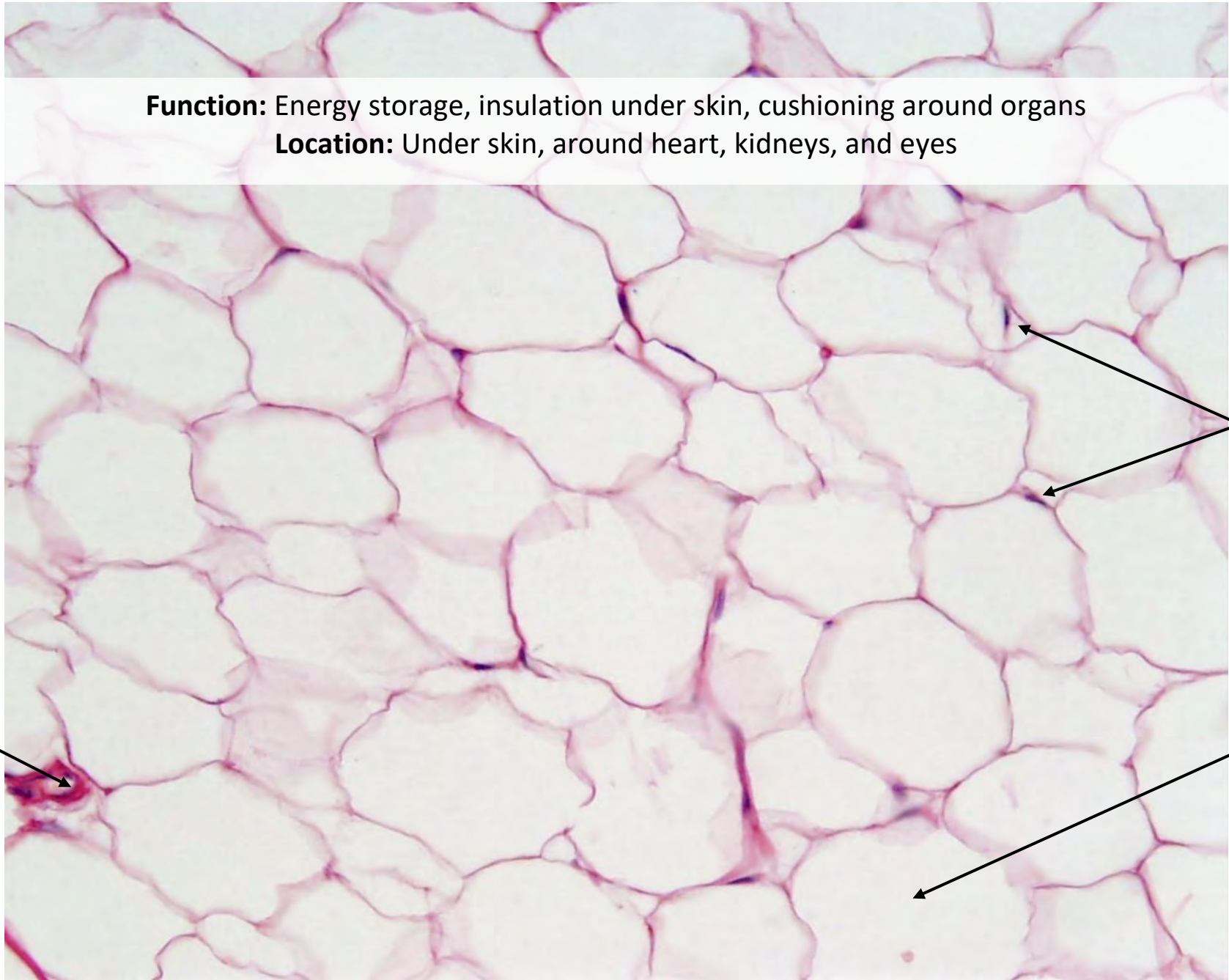
DENSE REGULAR CONNECTIVE TISSUE



ADIPOSE TISSUE

Function: Energy storage, insulation under skin, cushioning around organs

Location: Under skin, around heart, kidneys, and eyes

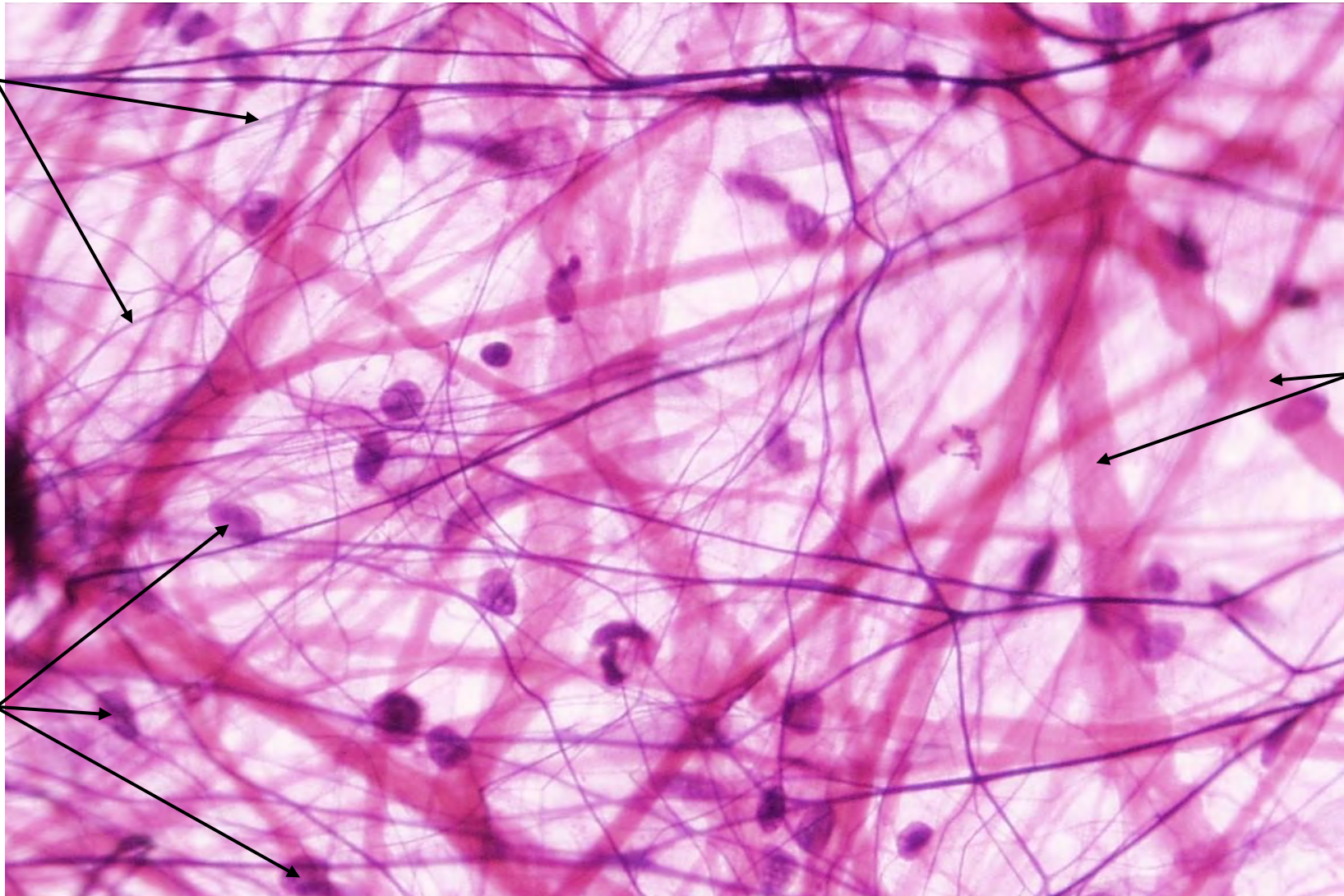


Adipocyte
Nucleus

Lipid
within
Adipocyte

Blood
Vessel

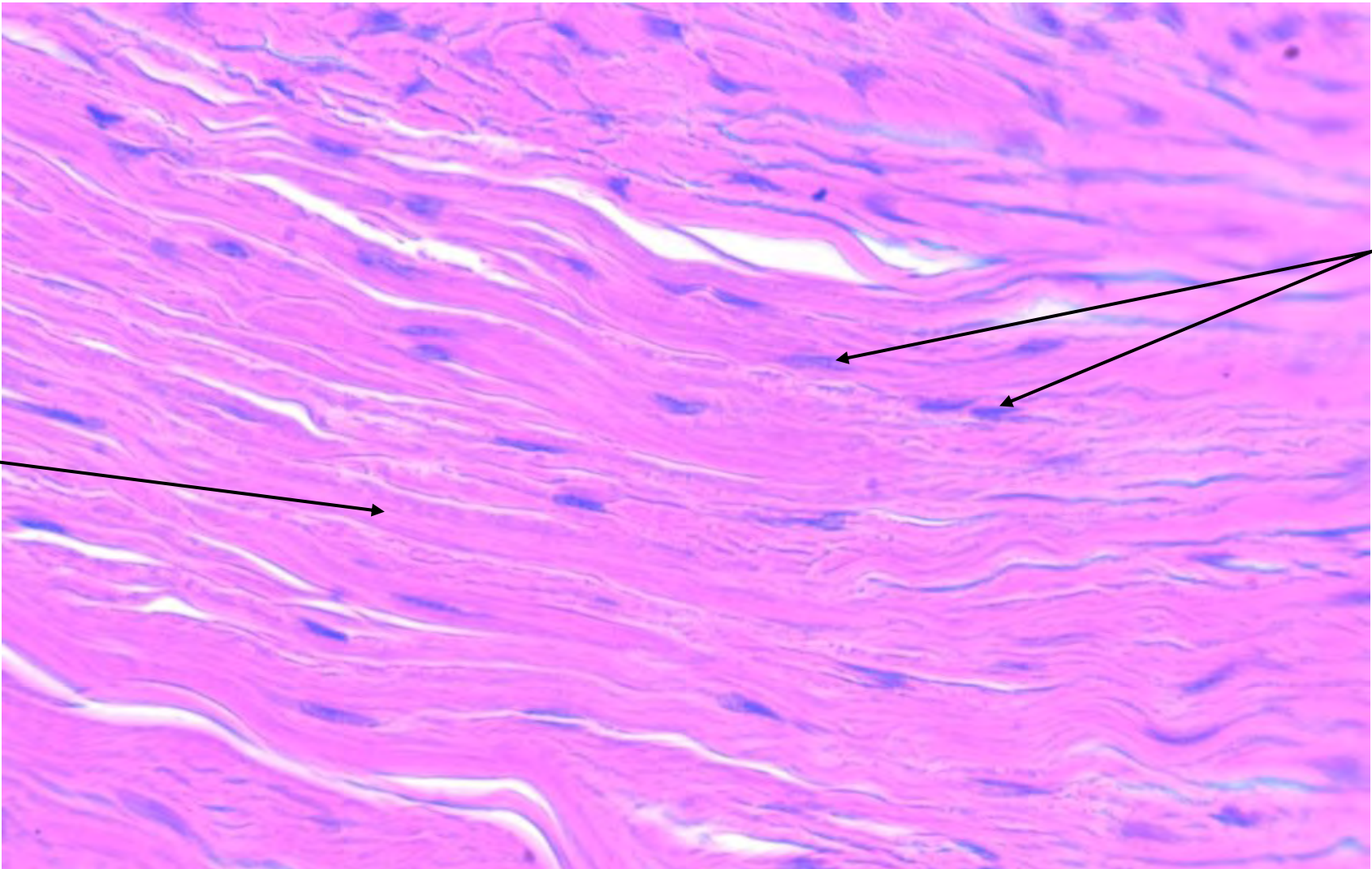
AREOLAR CONNECTIVE TISSUE



Function: _____, _____, _____

Location: _____, _____, _____, _____, and _____

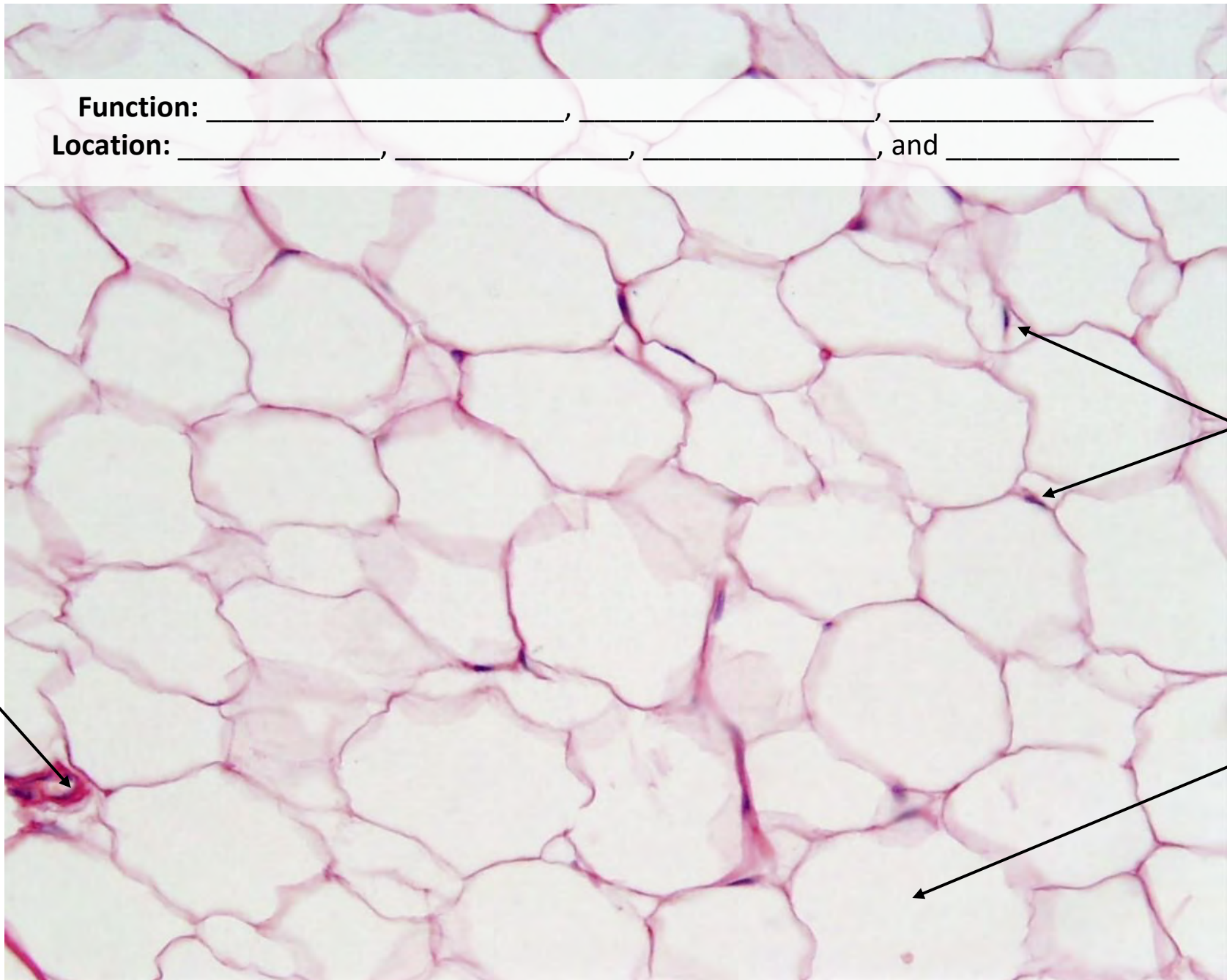
DENSE REGULAR CONNECTIVE TISSUE



Function: _____

Location: _____

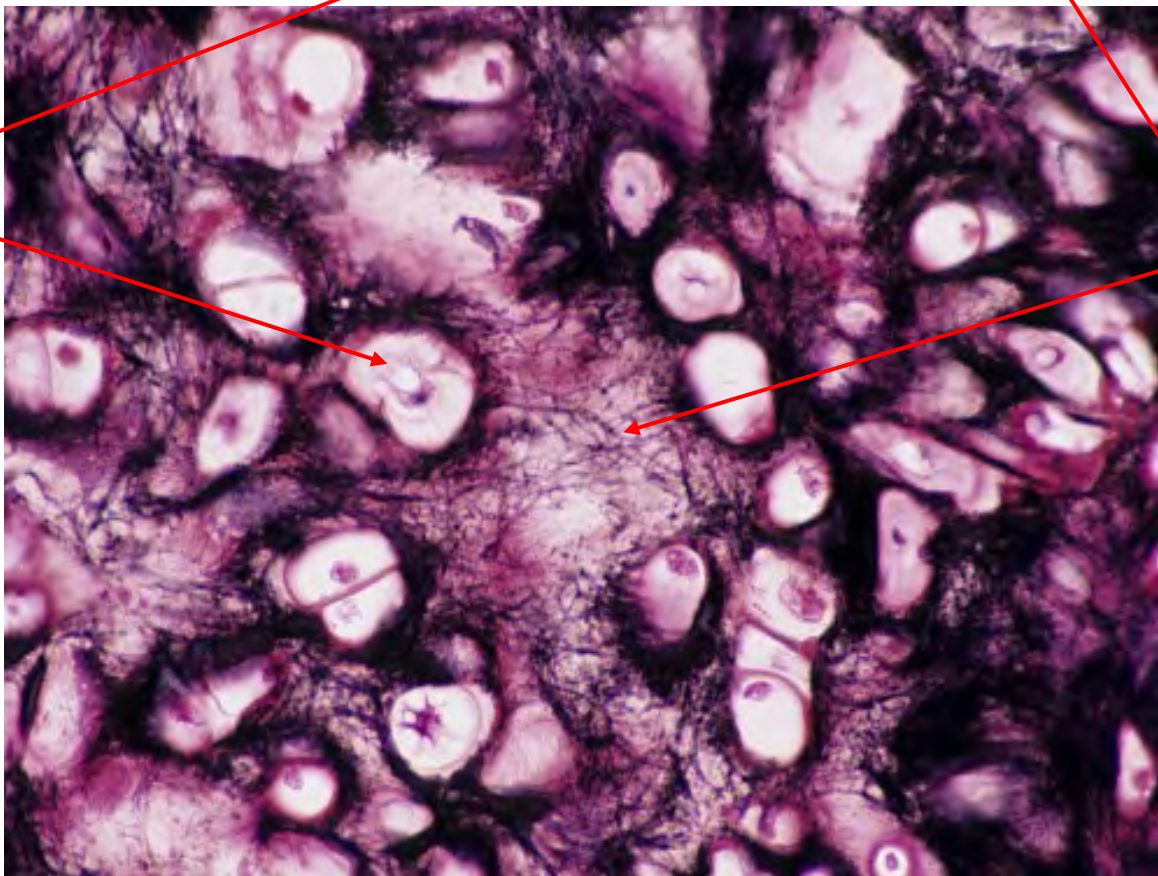
ADIPOSE TISSUE



ELASTIC CARTILAGE



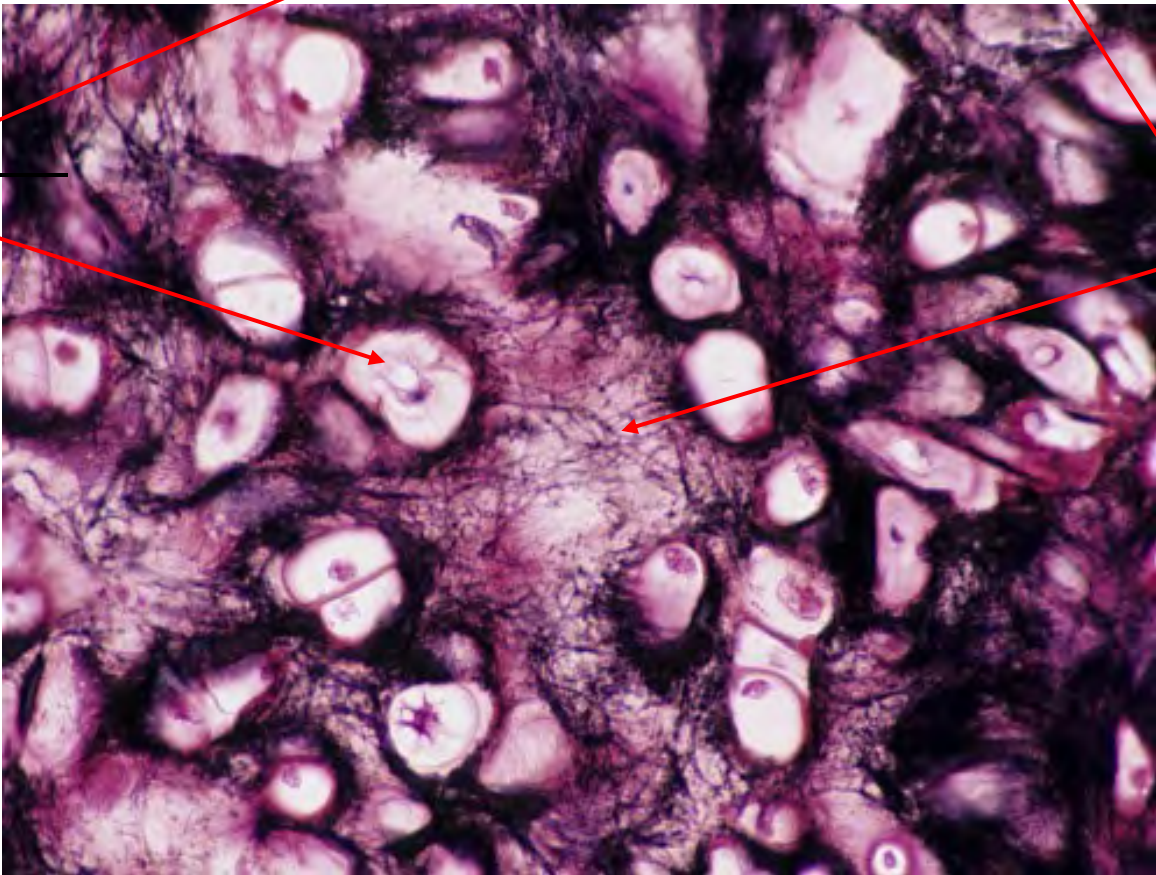
Perichondrium



Lacunae
with
Chondrocytes

Elastic
Fibers

Function: Provide flexible support
Location: Outer ear, epiglottis, larynx



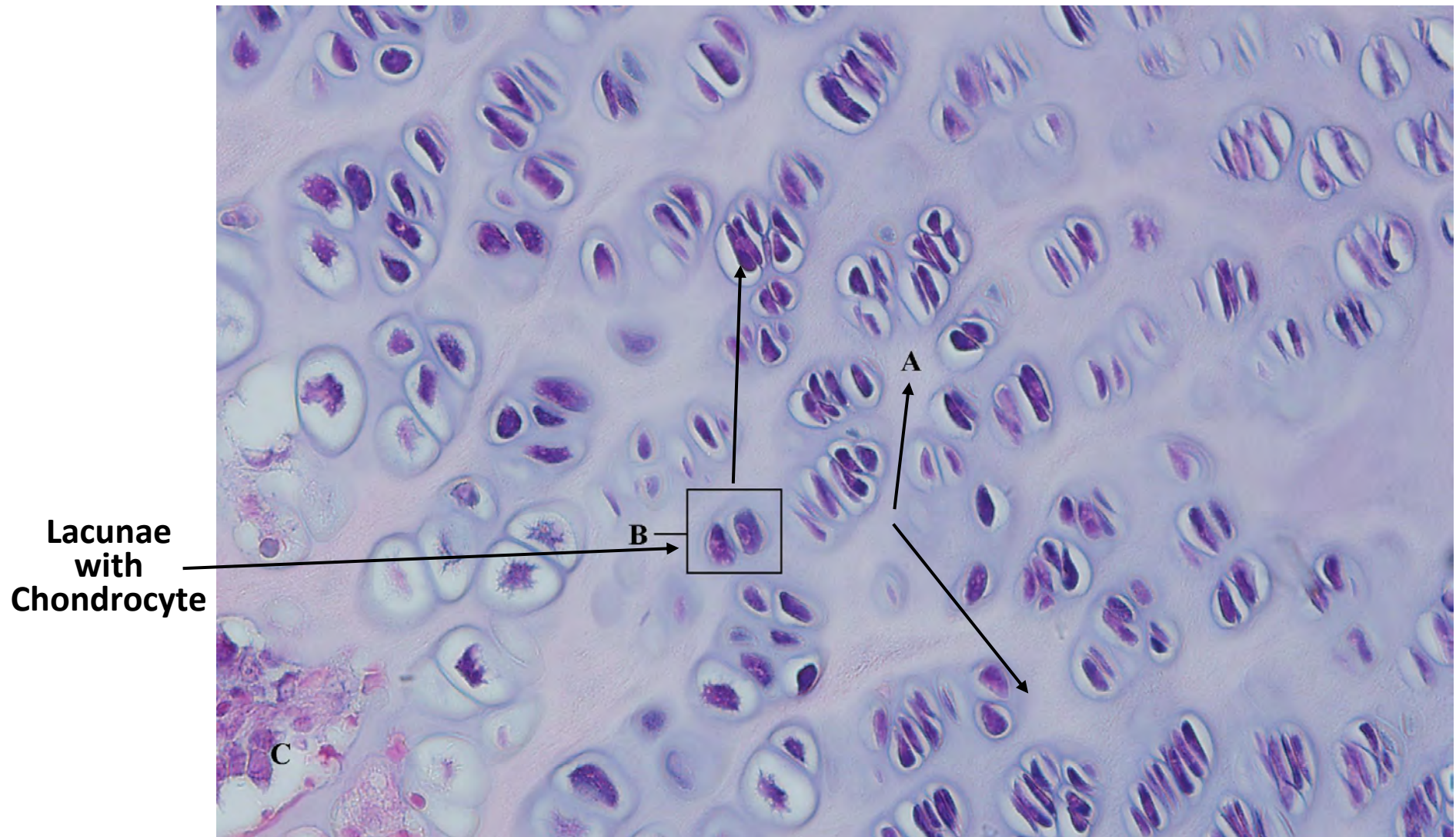
Function: _____

Location: _____ , _____ , _____

FIBROCARILAGE

Function: Reinforces ligaments and forms articular discs

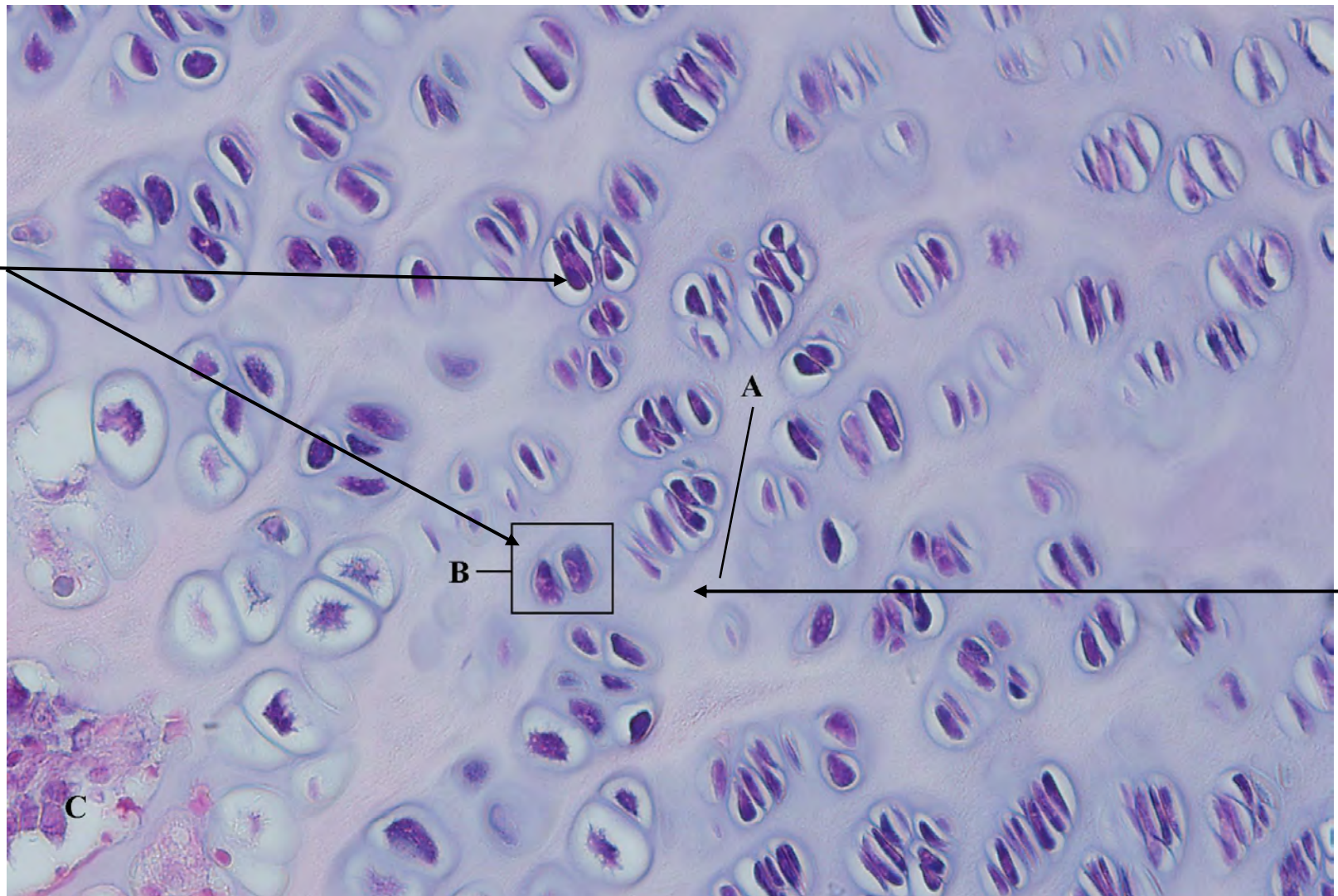
Location: Joints, pubic symphysis



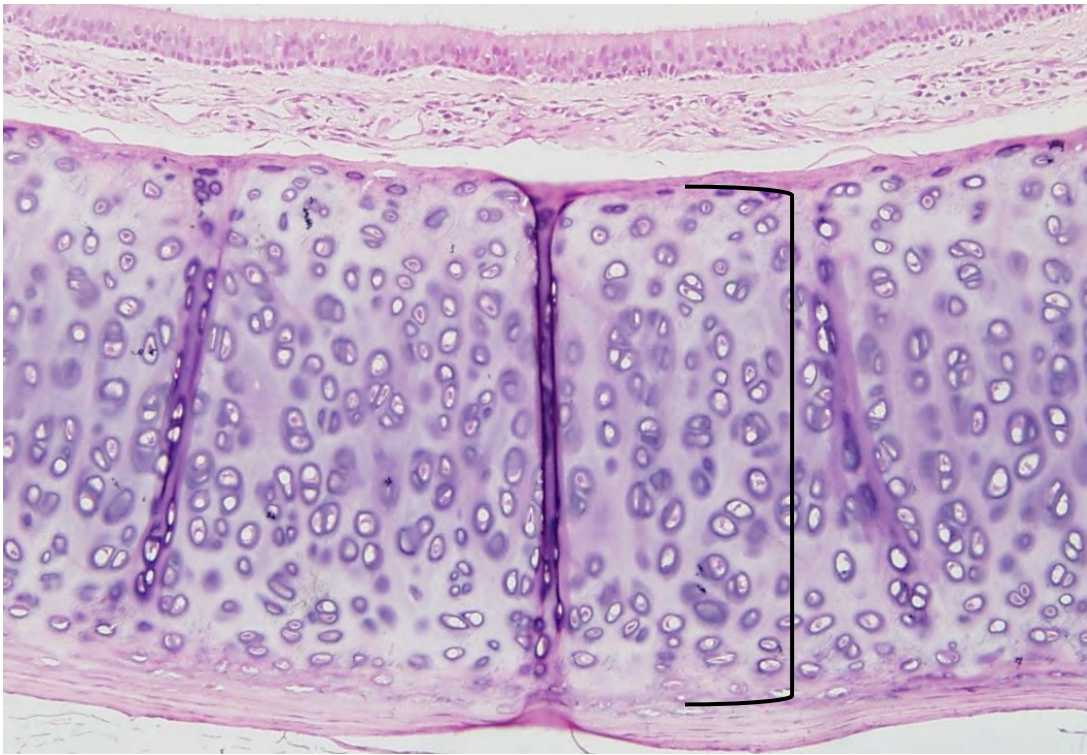
FIBROCARILAGE

Function: _____ and _____

Location: _____, _____

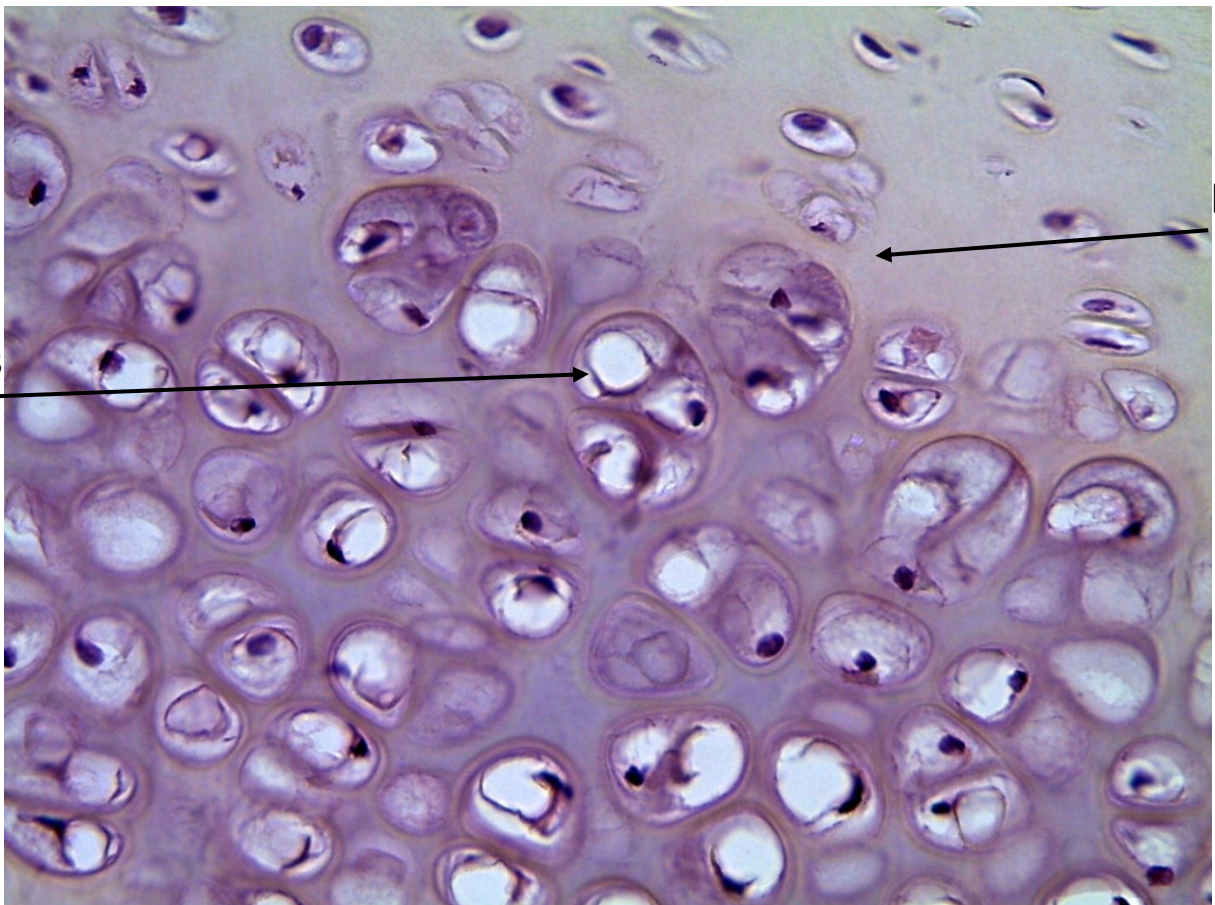


HYALINE CARTILAGE



Function: Support

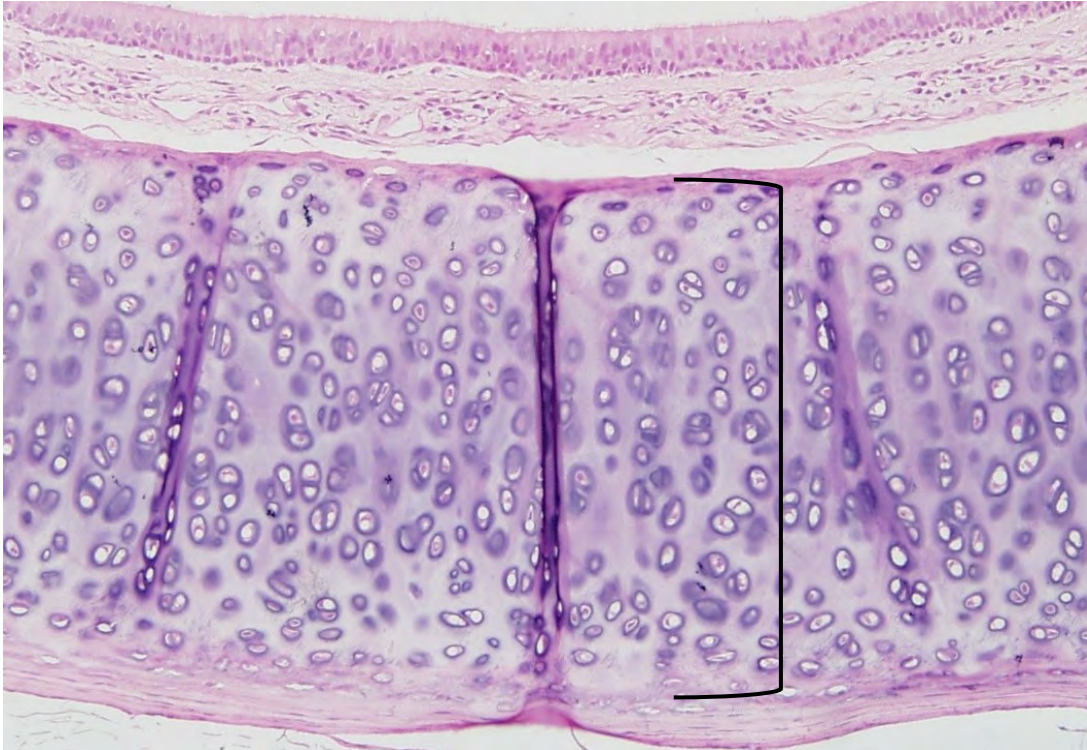
Location: Costal cartilage, end of nose



Matrix

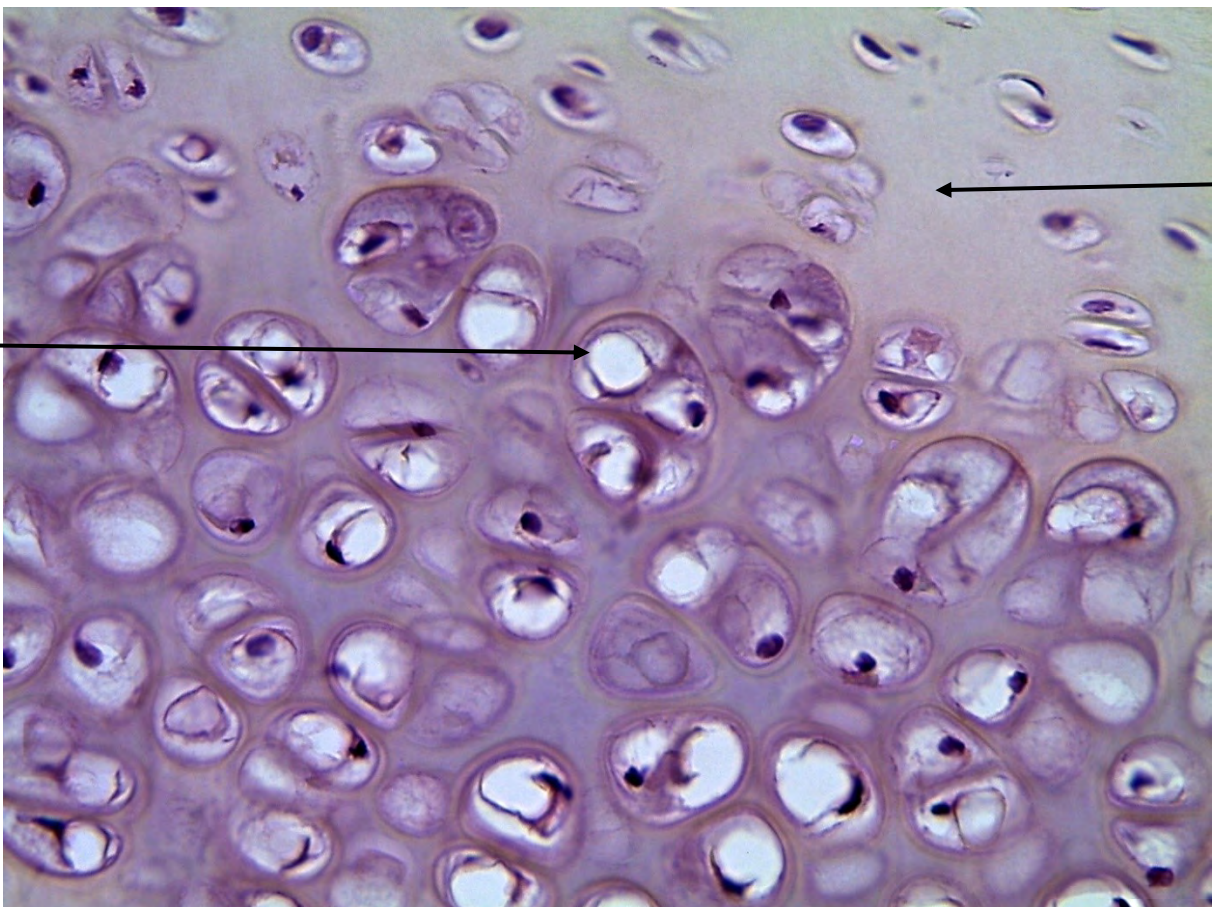
**Chondrocytes
in Lacunae**

HYALINE CARTILAGE

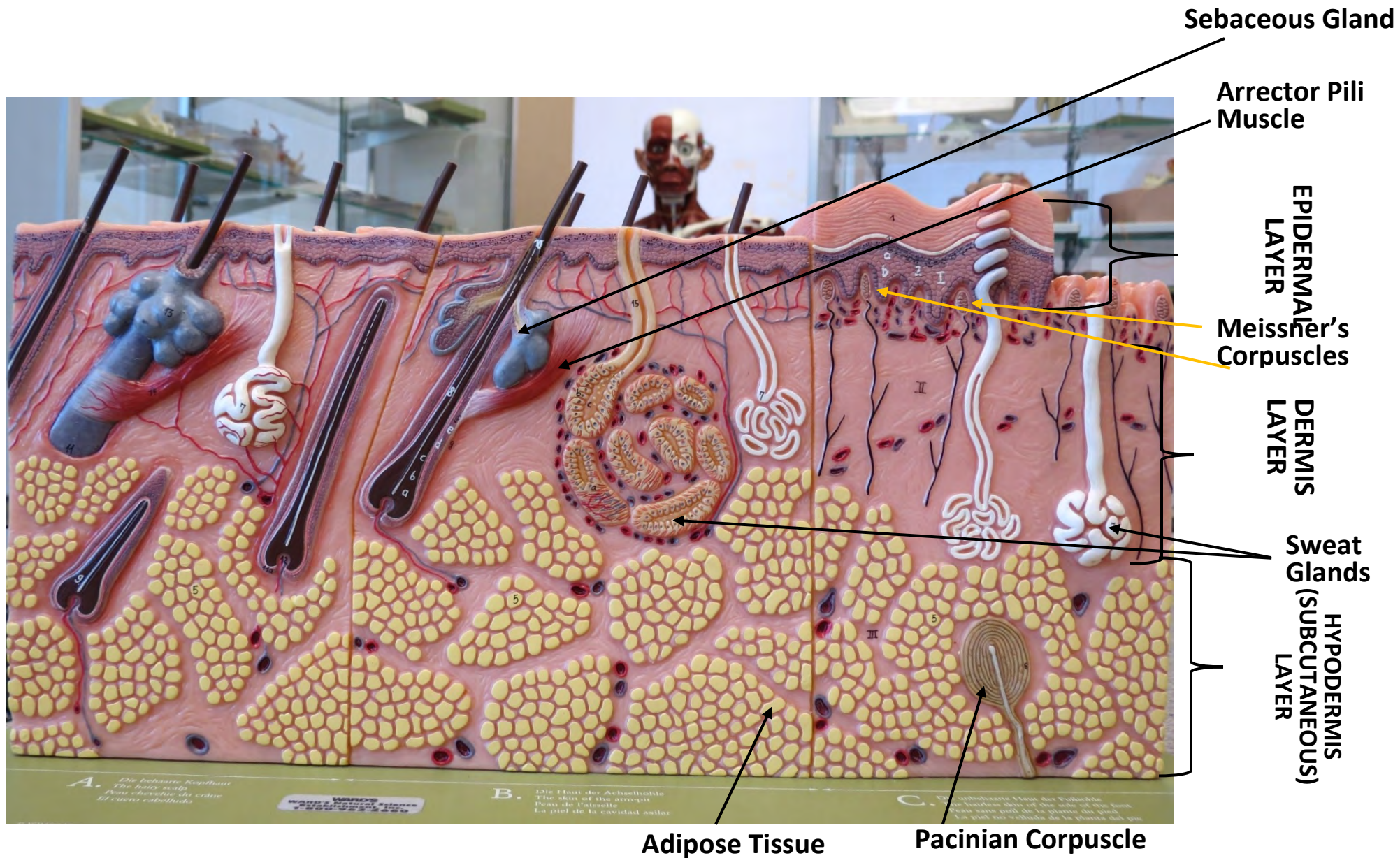


Function: _____

Location: _____ and _____



SKIN MODEL



SKIN MODEL

Stratum Corneum

Stratum Spinosum

Stratum Lucidum

THICK SKIN

THIN SKIN

Hair Shaft

Stratum Granulosum

Stratum Basale

Hair Root

Hair Follicle

Arrector Pili Muscle

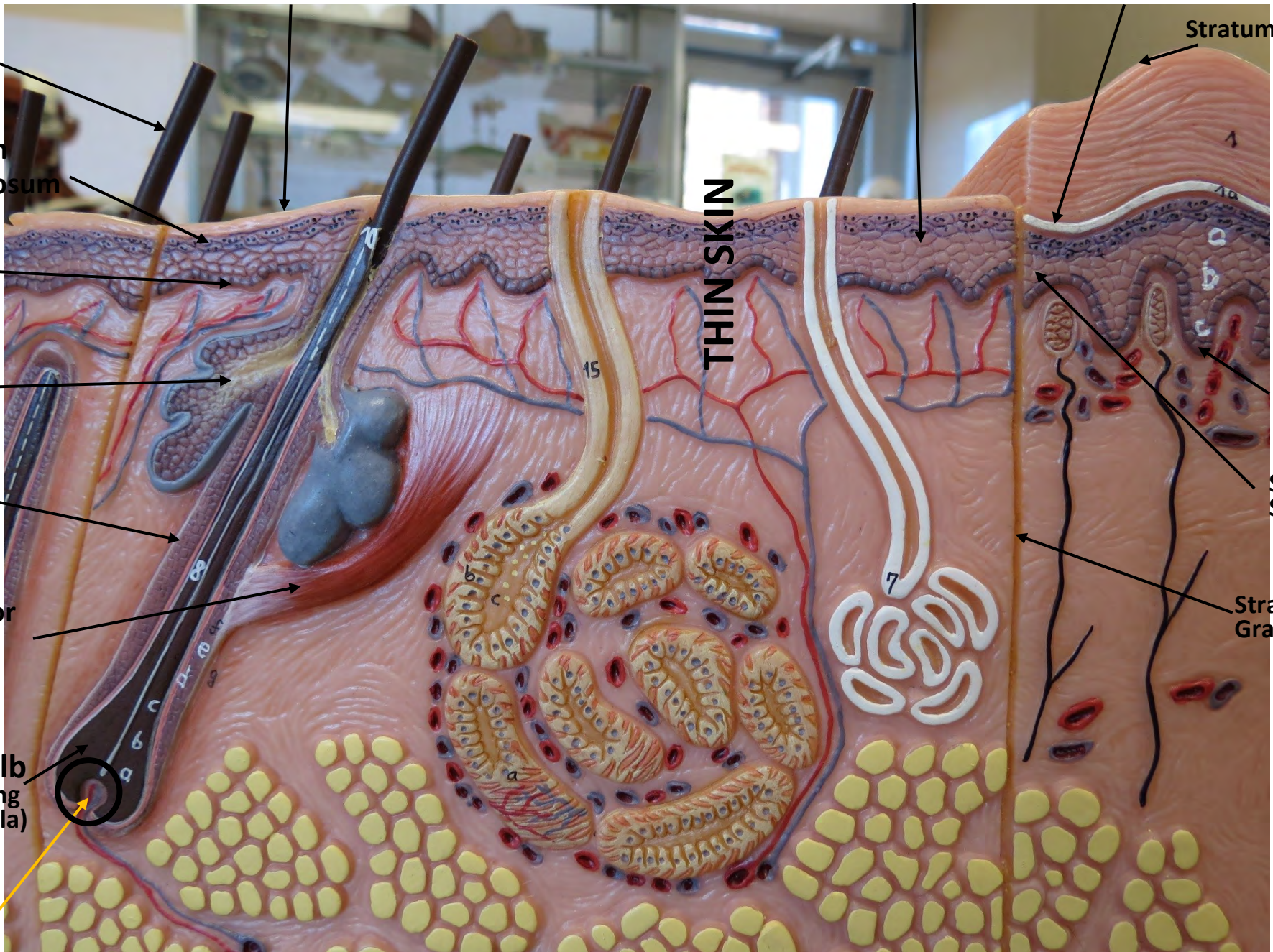
Hair Bulb
(containing hair papilla)

Papilla

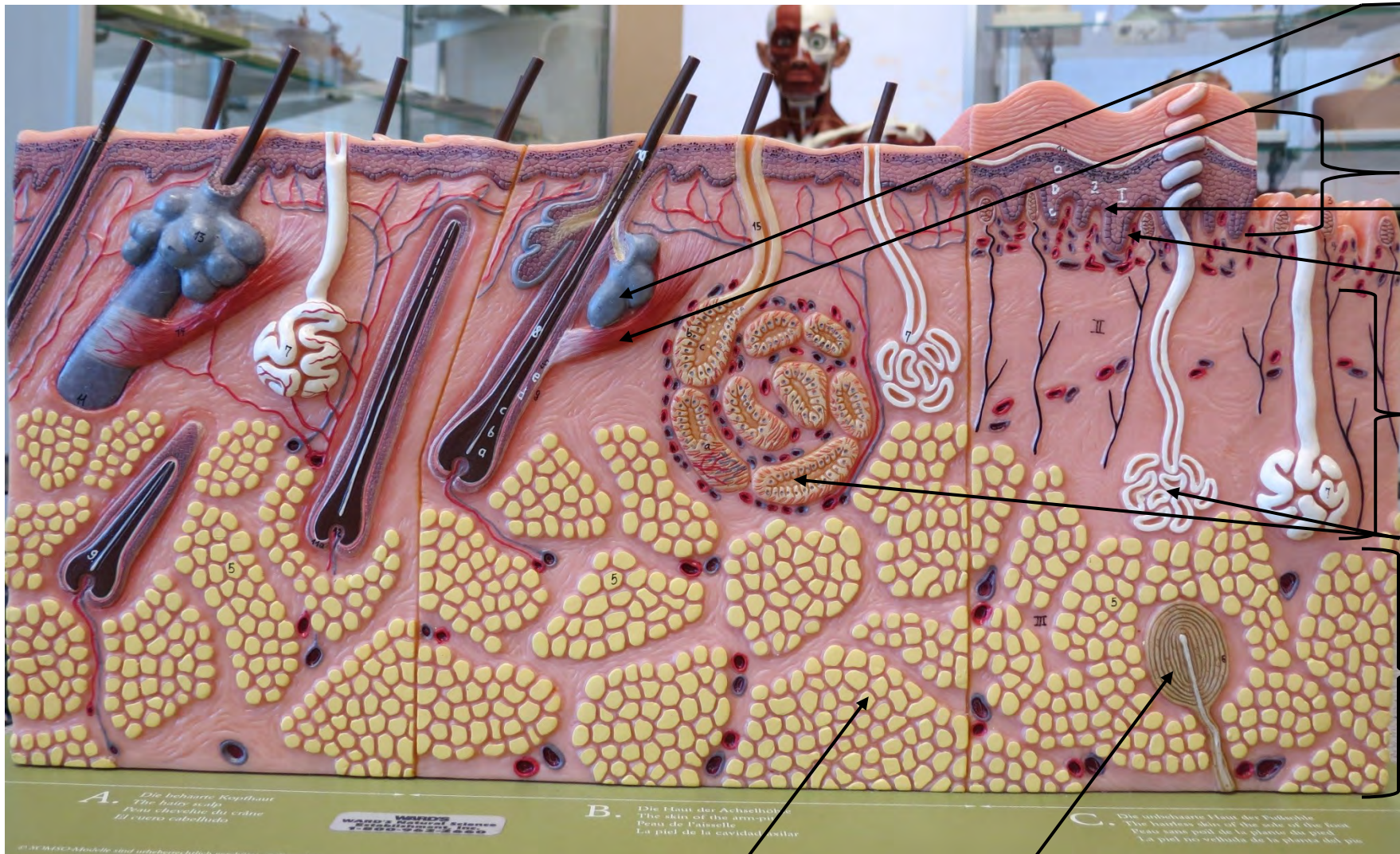
Stratum Basale

Stratum Spinosum

Stratum Granulosum



SKIN MODEL



This anatomical model illustrates the structural differences between thin and thick skin. The left side, labeled 'Thin Skin', shows a cross-section with a relatively thin epidermis and a thin layer of dermis. The right side, labeled 'Thick Skin', shows a much thicker epidermis with prominent dermal papillae and a thicker dermis. Various structures are labeled with numbers and letters, and arrows point to specific features.

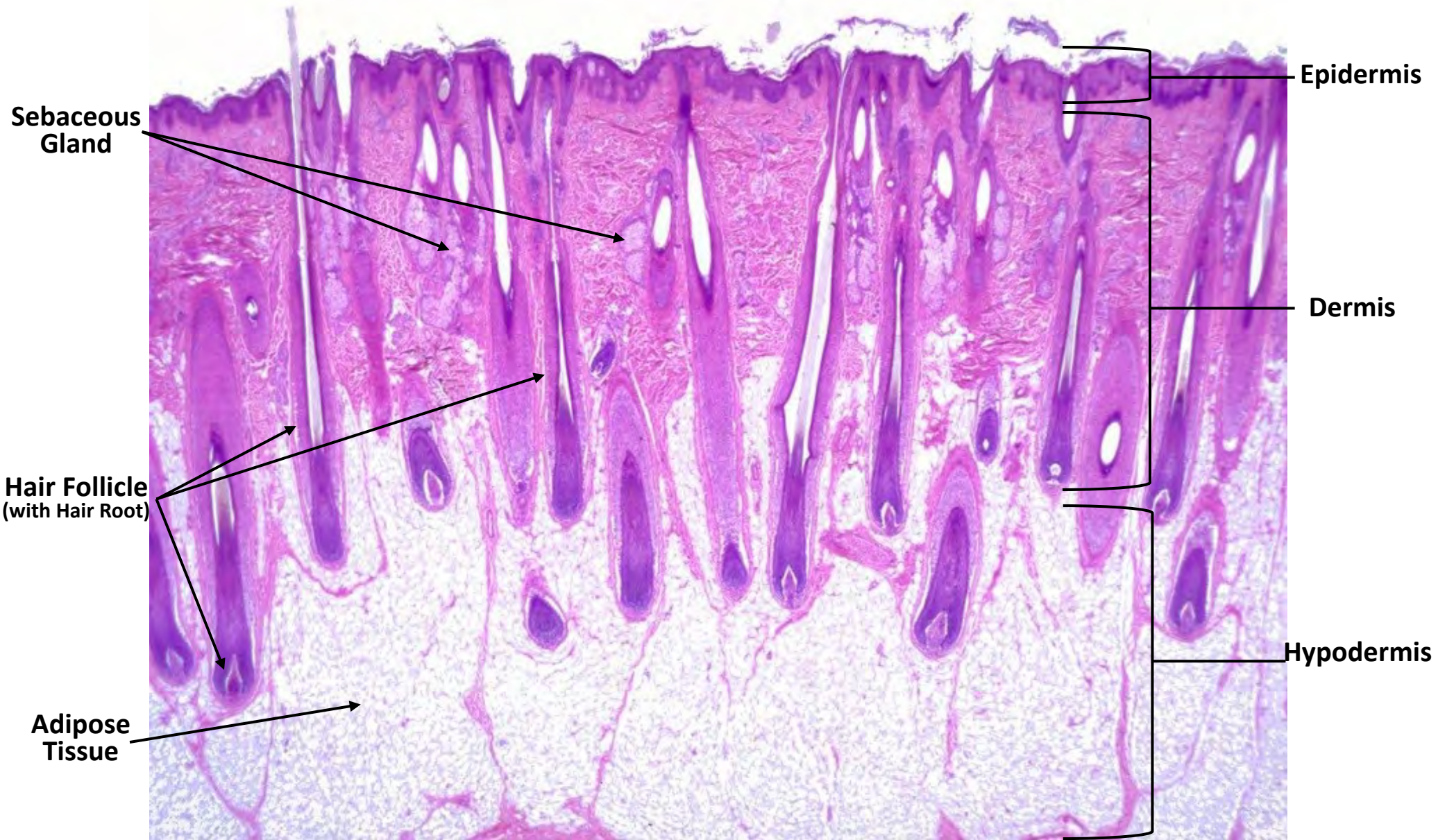
Thin Skin

Thick Skin

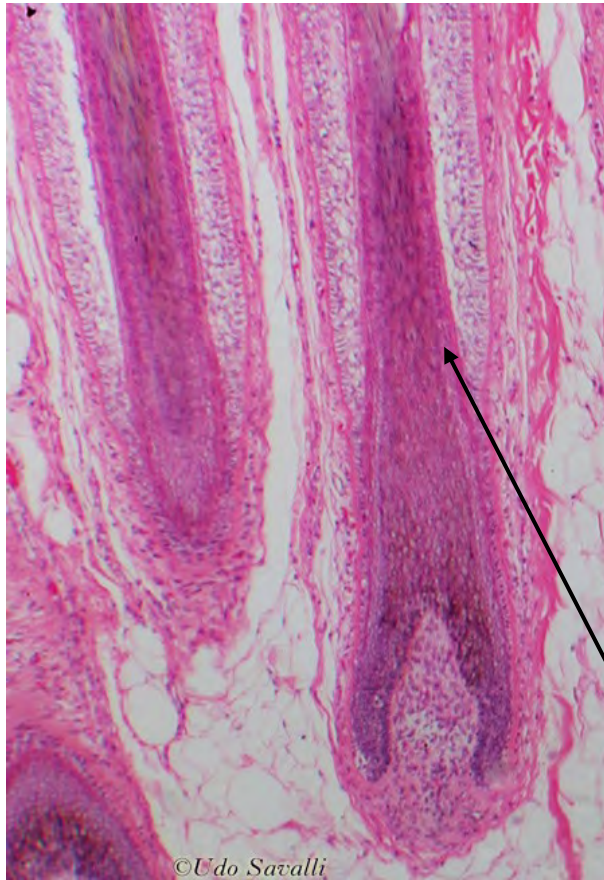
Thin Skin

Thick Skin

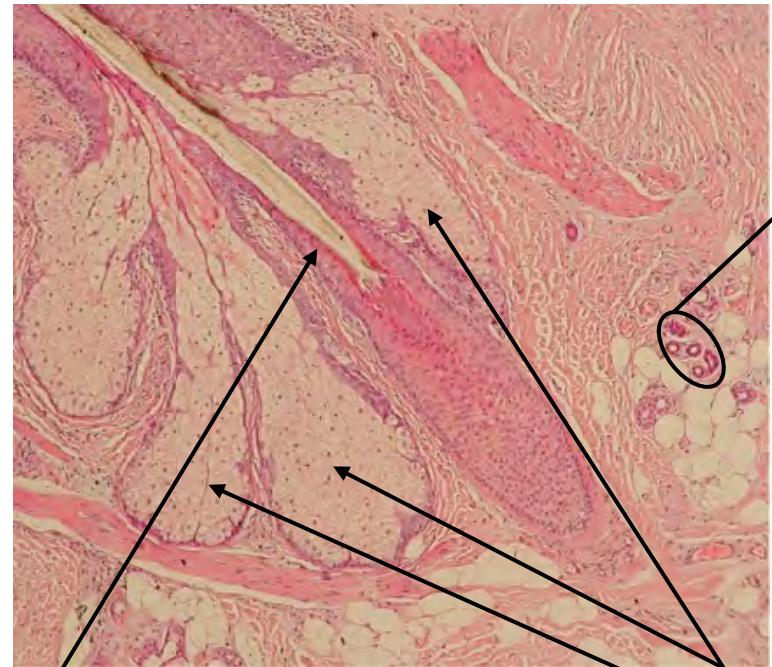
SKIN SLIDES



SKIN SLIDES

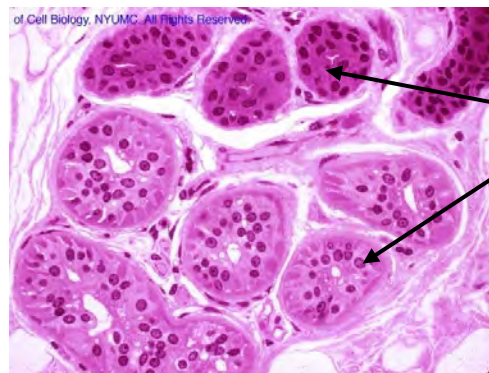


**Hair Follicle
(with Hair Root)**

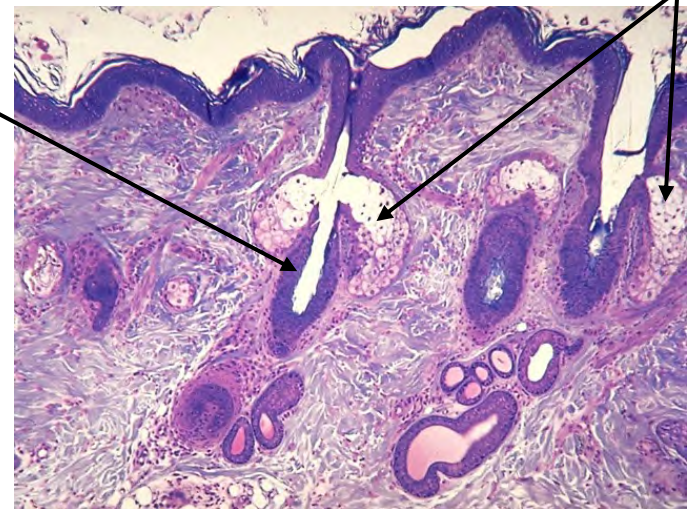


**Sweat
Glands**

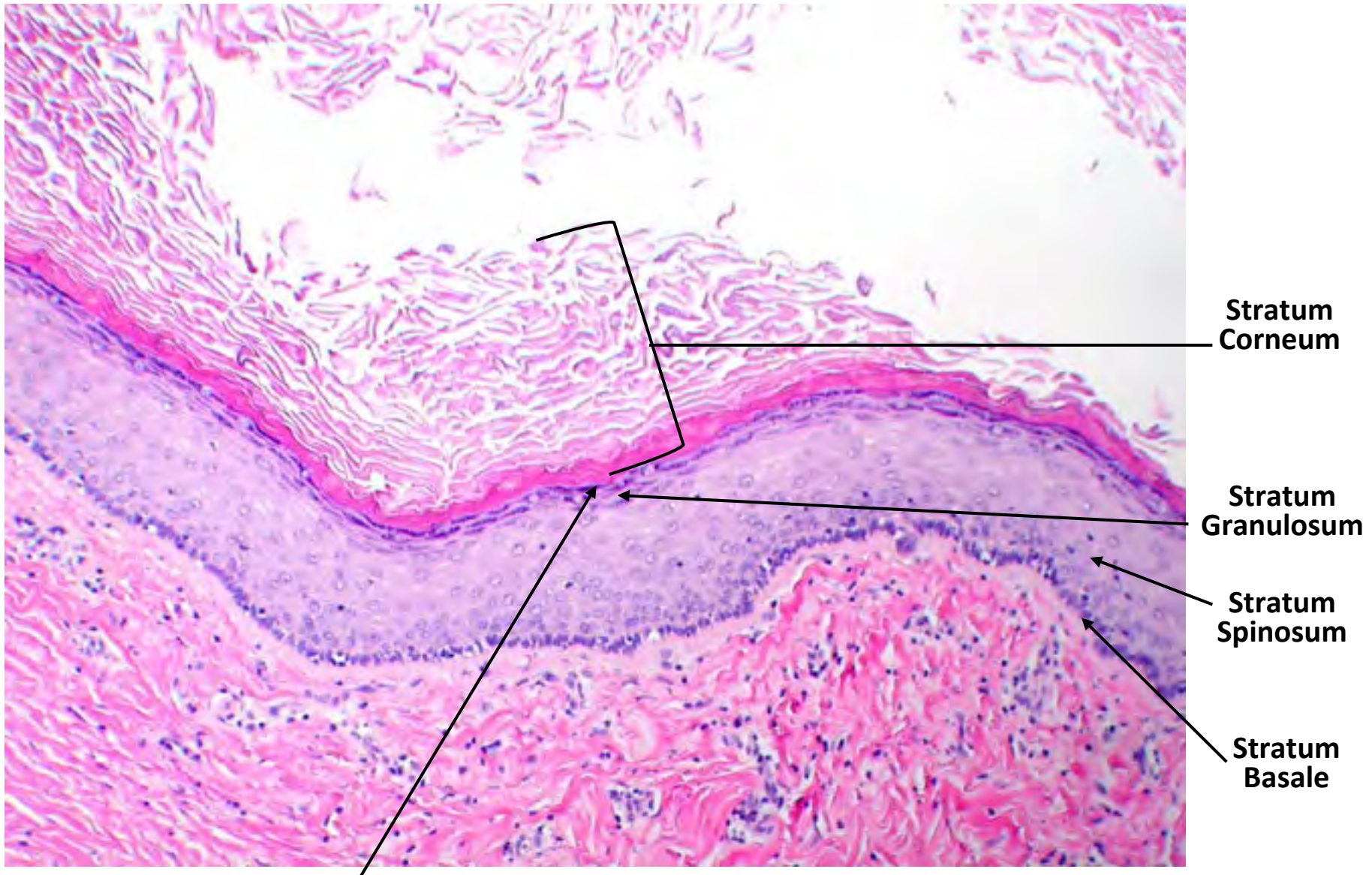
**Sebaceous
Gland**



**Sweat
Glands**



SKIN SLIDES



**Stratum
Corneum**

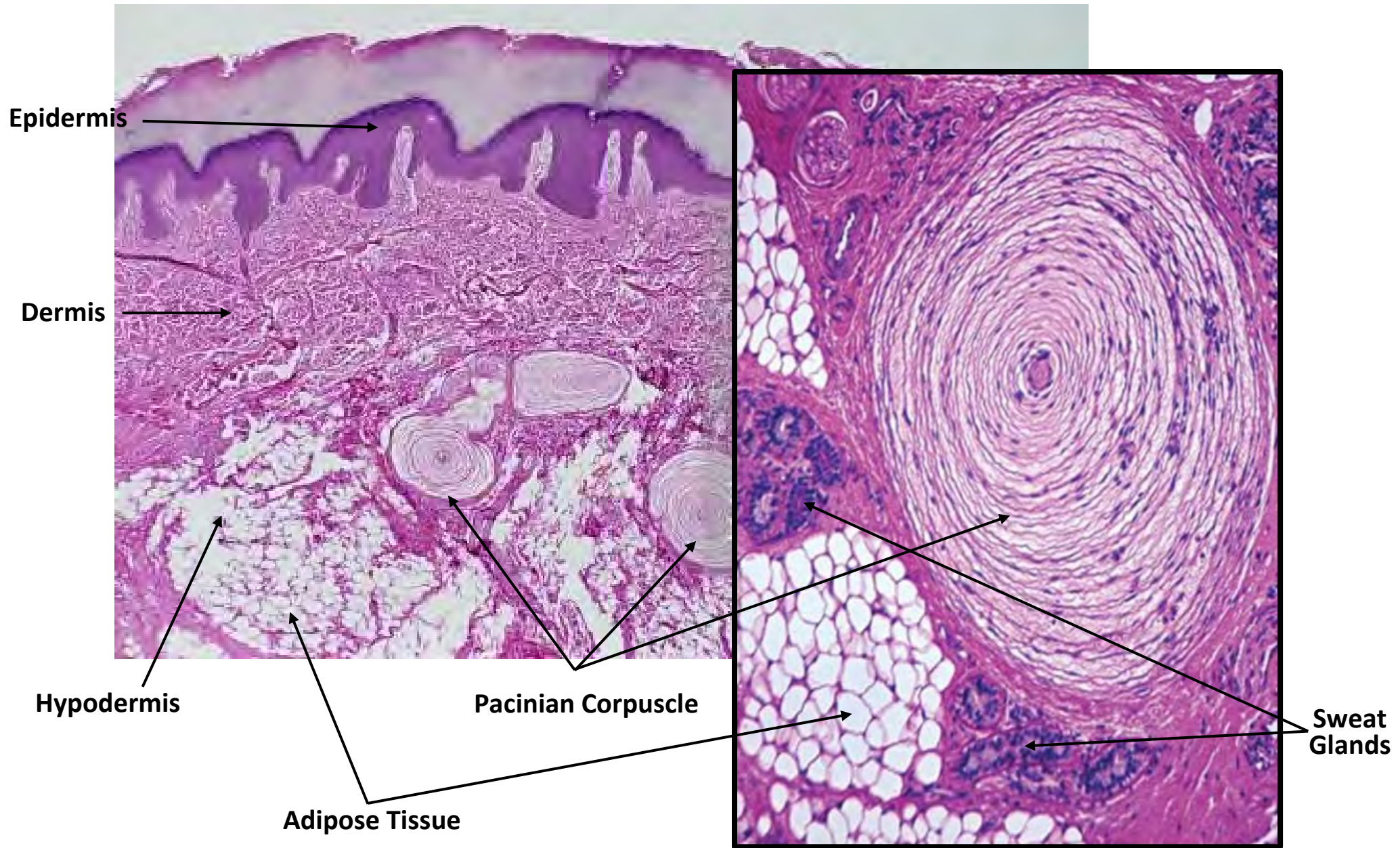
**Stratum
Granulosum**

**Stratum
Spinosum**

**Stratum
Basale**

Stratum Lucidum
(area between Graunlosum &
Corneum. Usually cannot be seen)

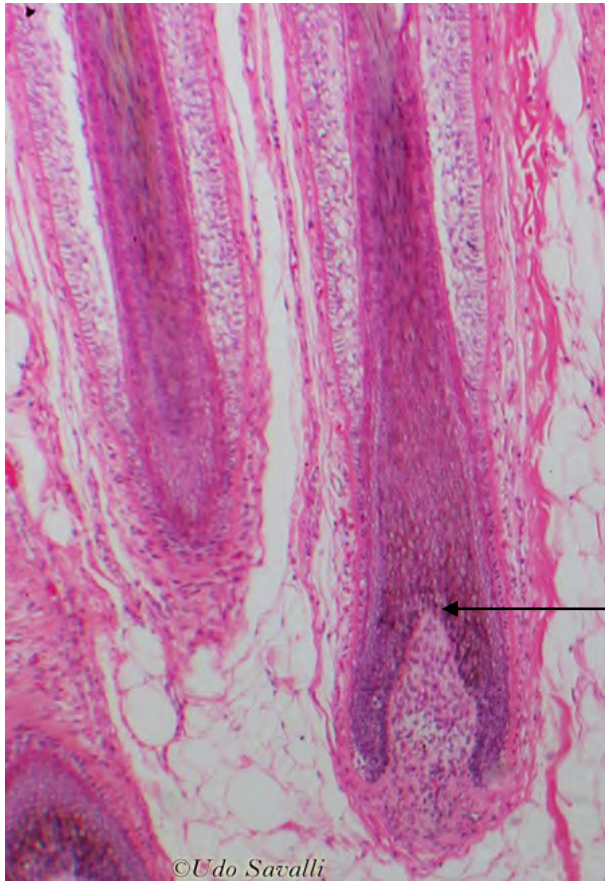
SKIN SLIDES



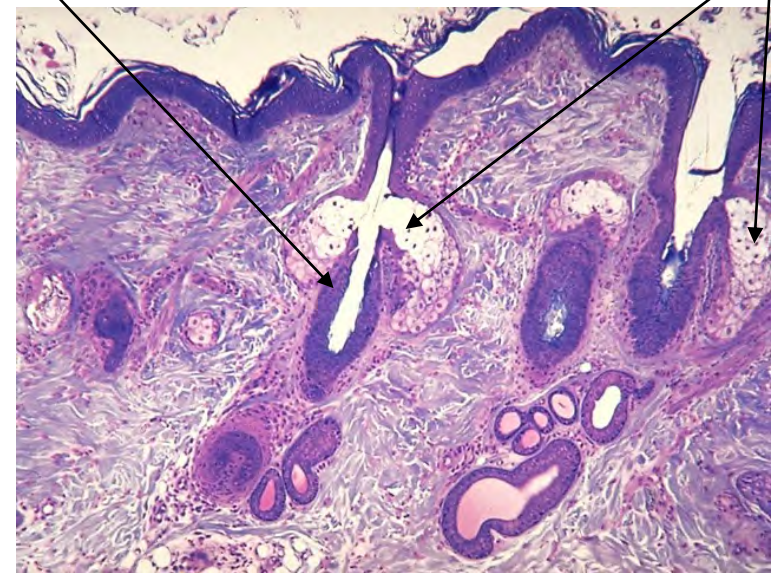
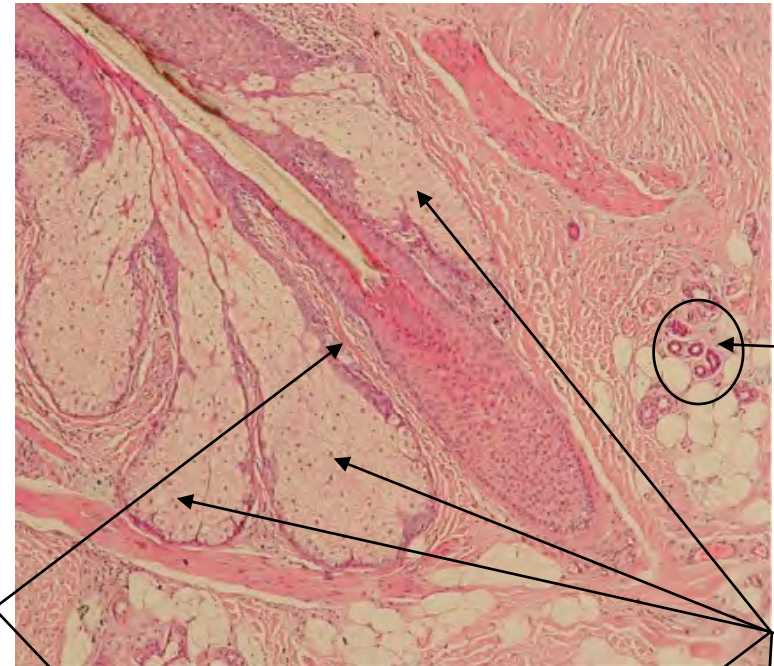
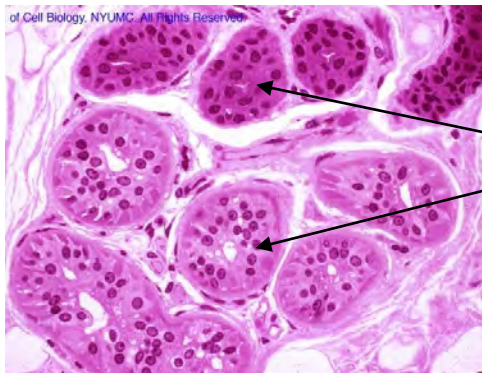
SKIN SLIDES



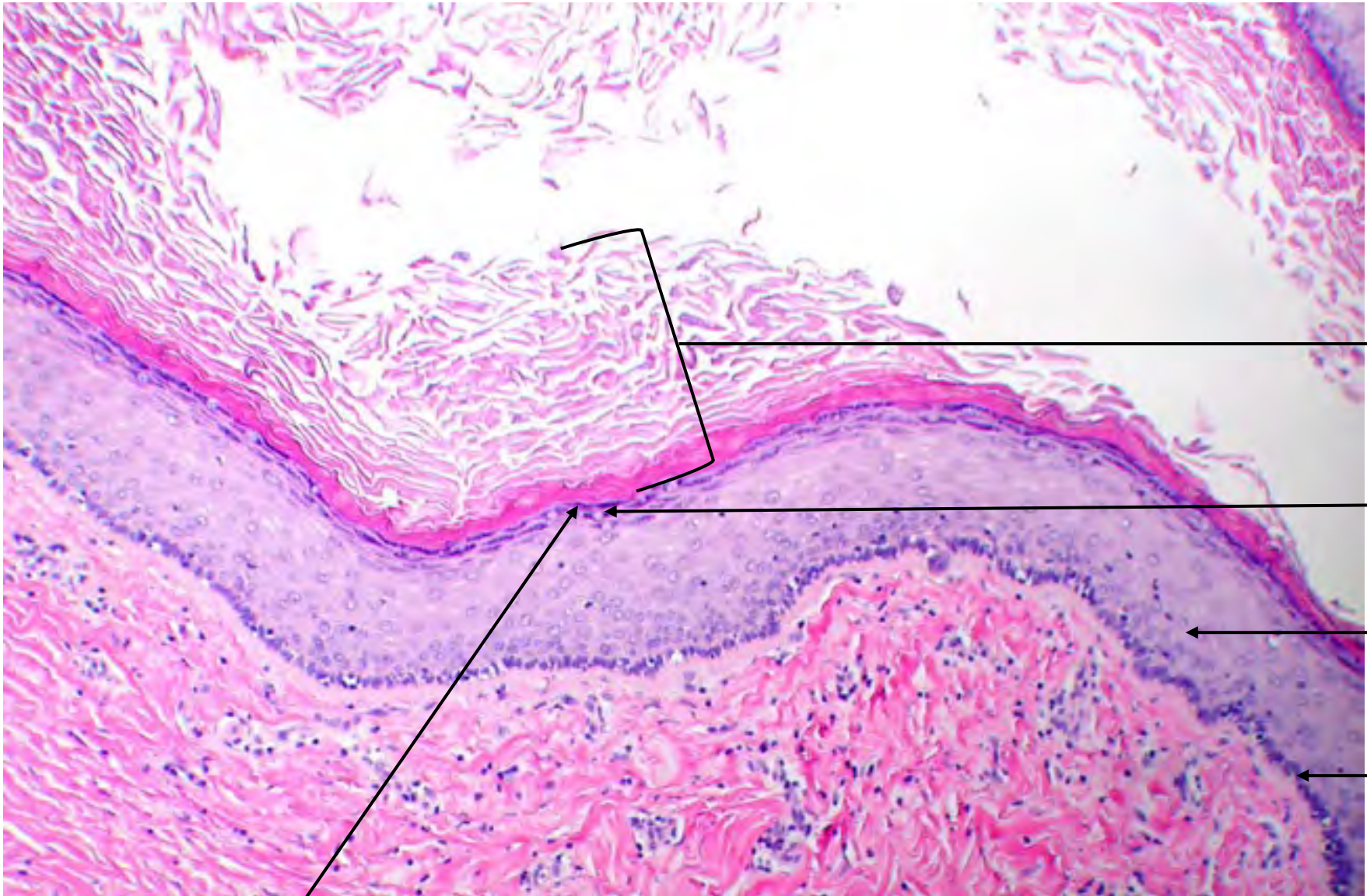
SKIN SLIDES



©Udo Savalli



SKIN SLIDES



SKIN SLIDES

