



Tissue organization

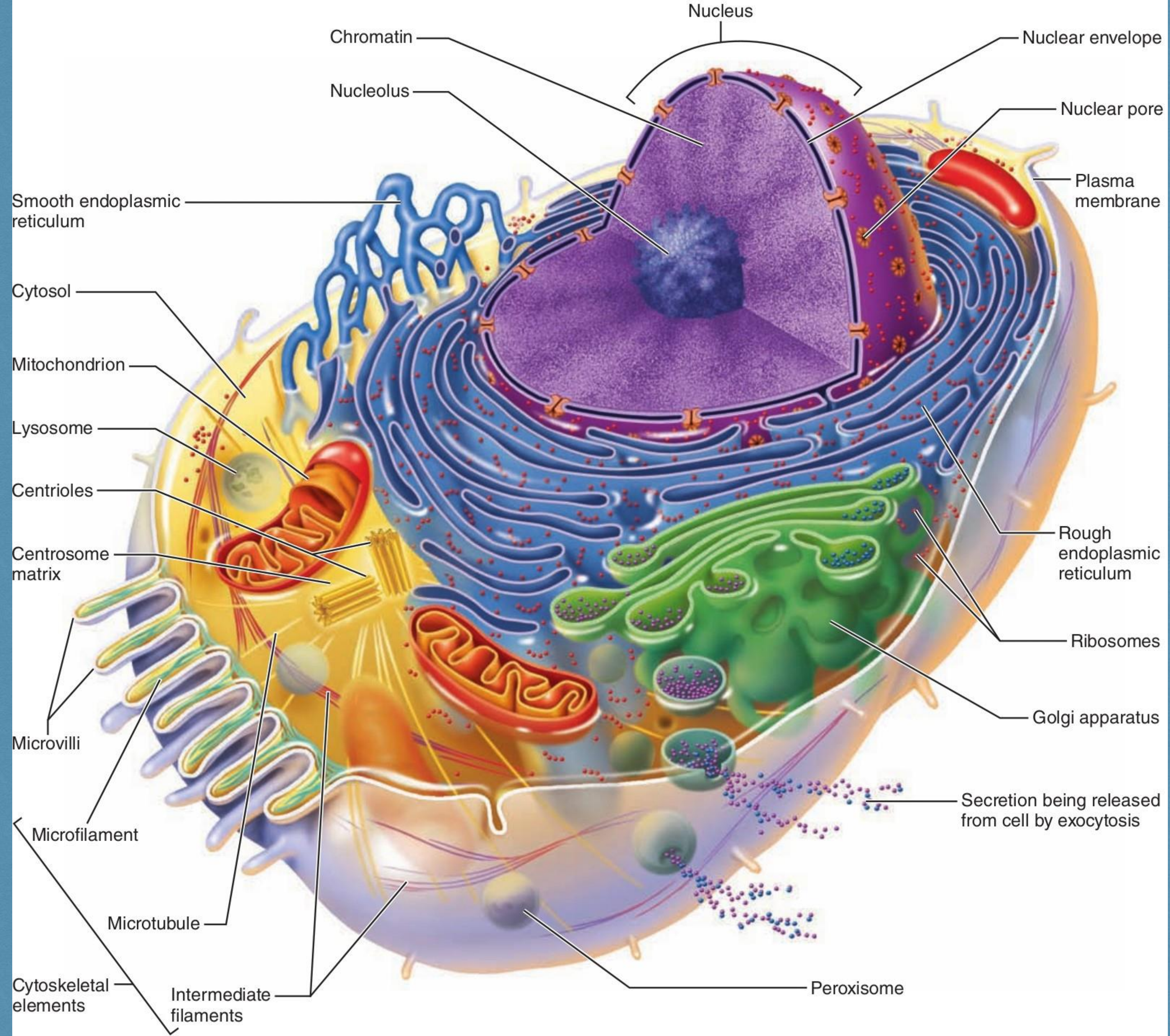
A presentation in anatomy by

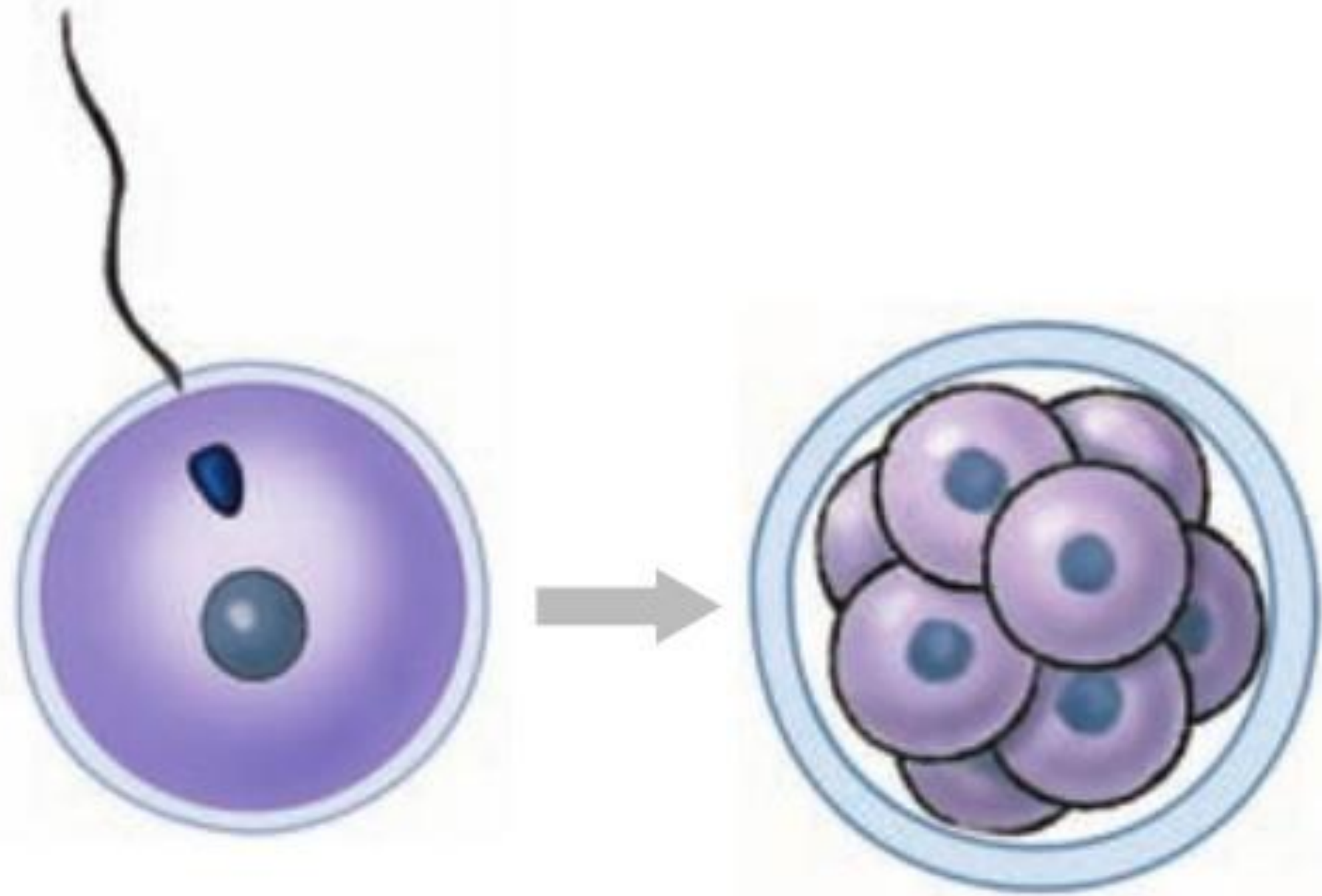
Dr. Ahmed Jawad
MBChB, FIBMS - CTVS, FACS

Dr. Huda fadhil
MBChB, FIBMS - Family

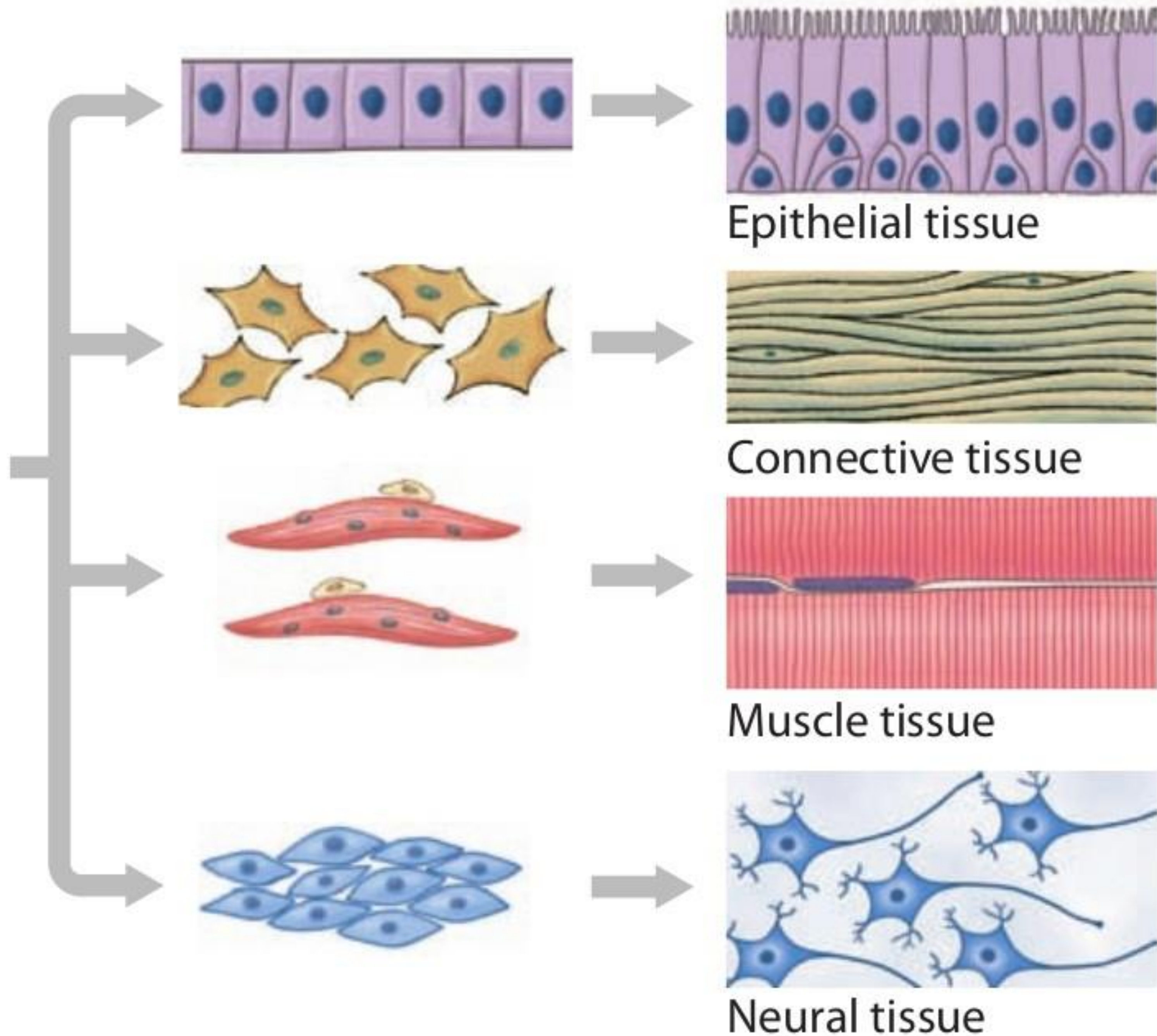
Dr. Muhanned Sabah
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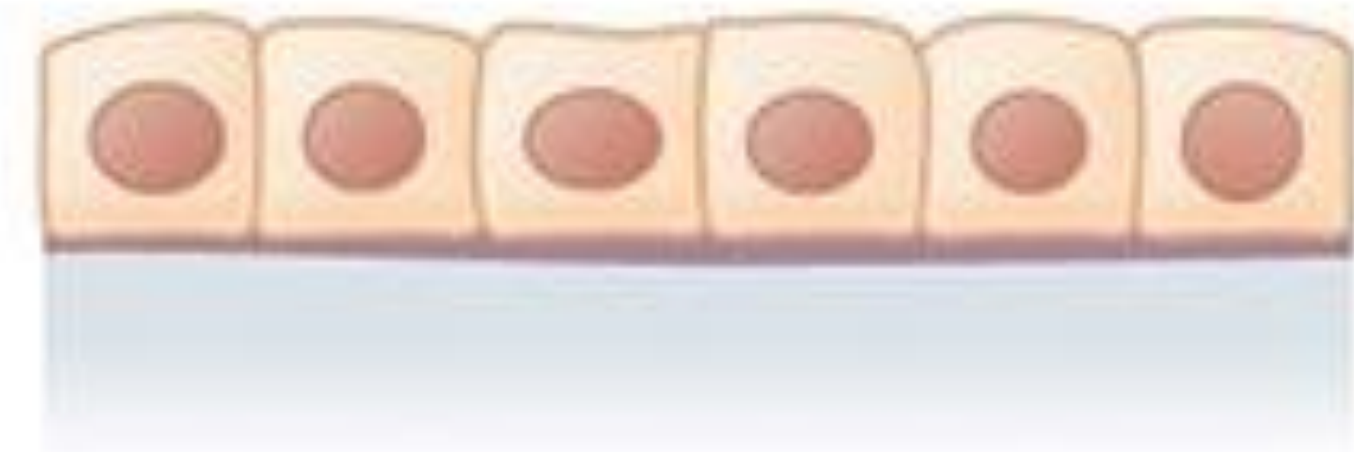


The differentiation of the four tissue types from a single cell: the fertilized ovum

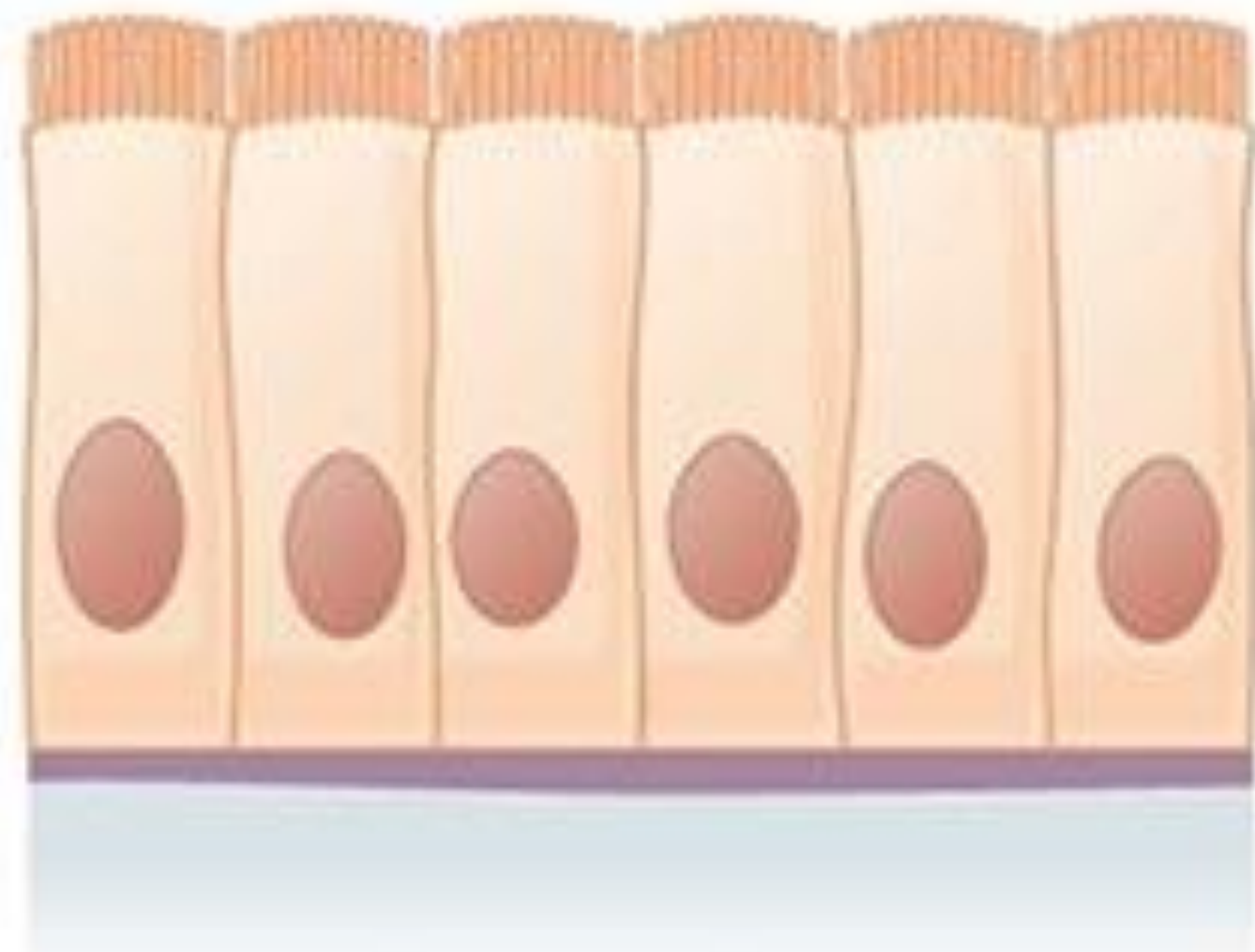




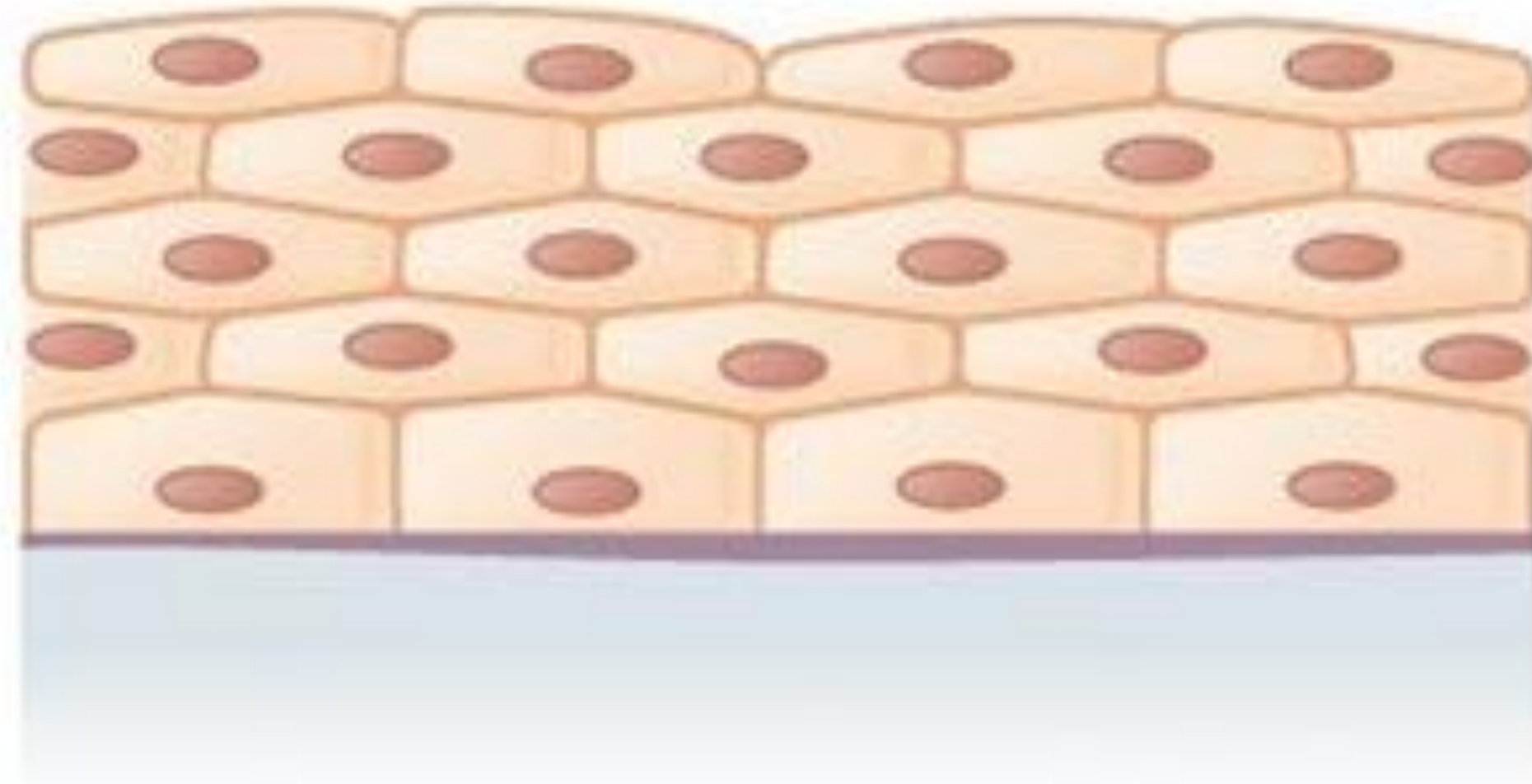
Simple squamous epithelium



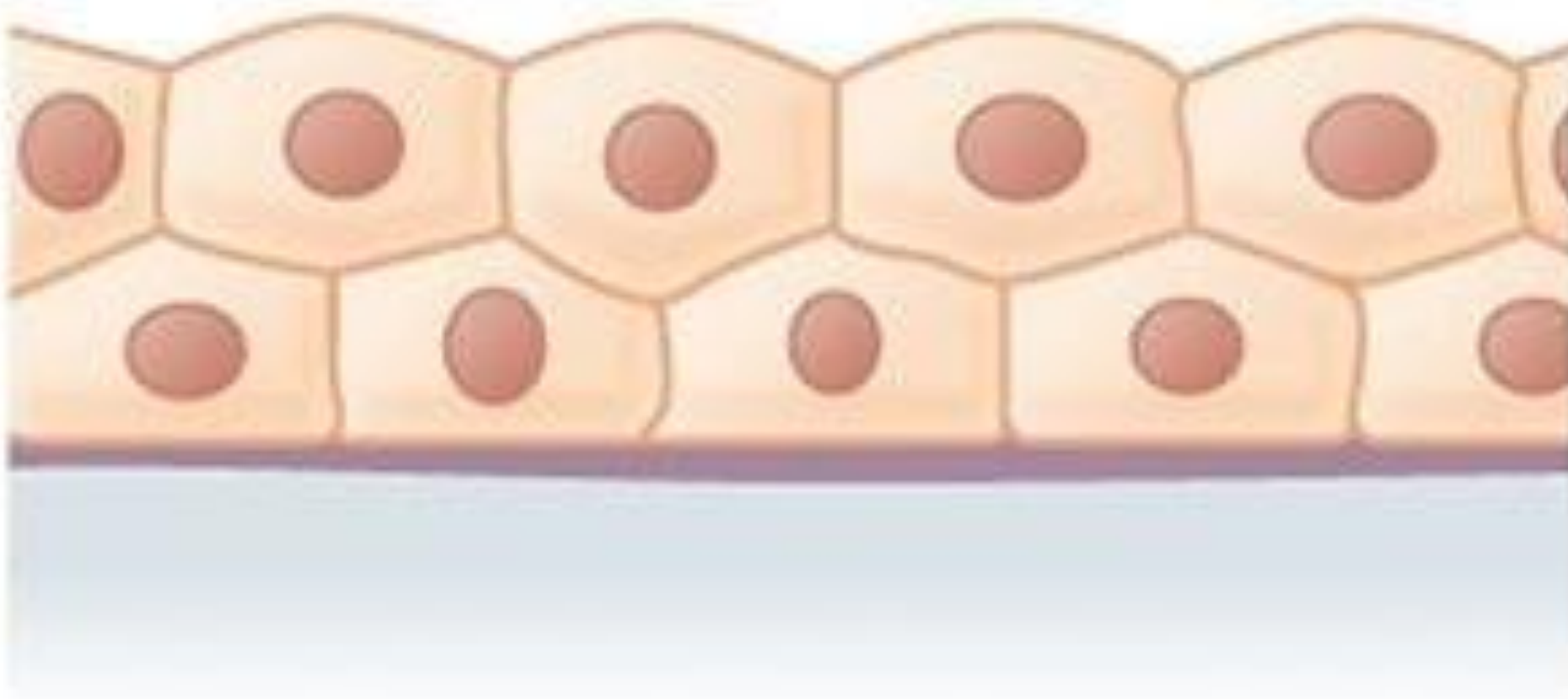
Simple cuboidal epithelium



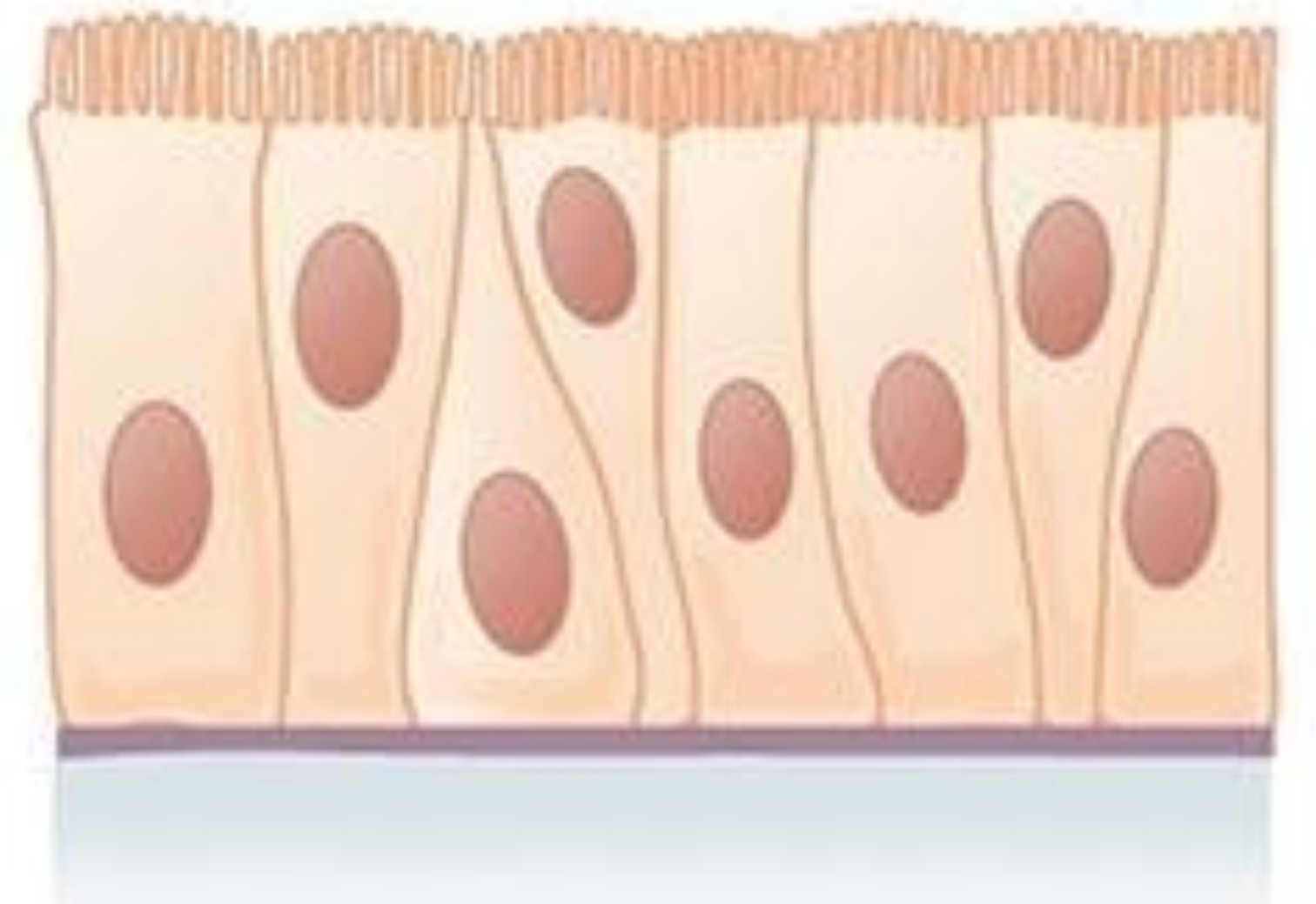
Simple columnar epithelium



Stratified squamous epithelium



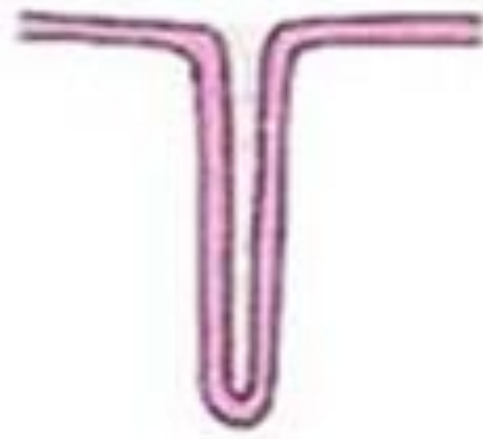
Stratified cuboidal epithelium



Pseudostratified columnar epithelium



Stratified columnar epithelium



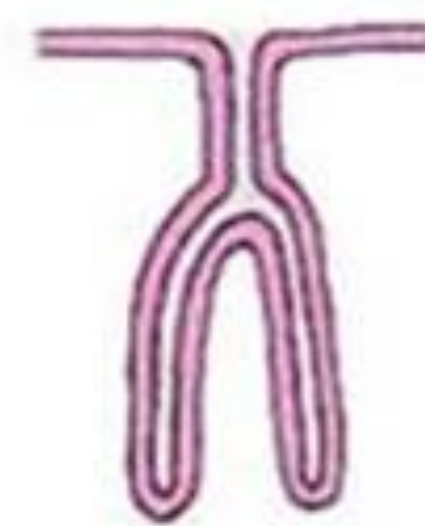
Simple tubular

Crypt of Lieberkuhn



Simple coiled tubular

Sweat glands



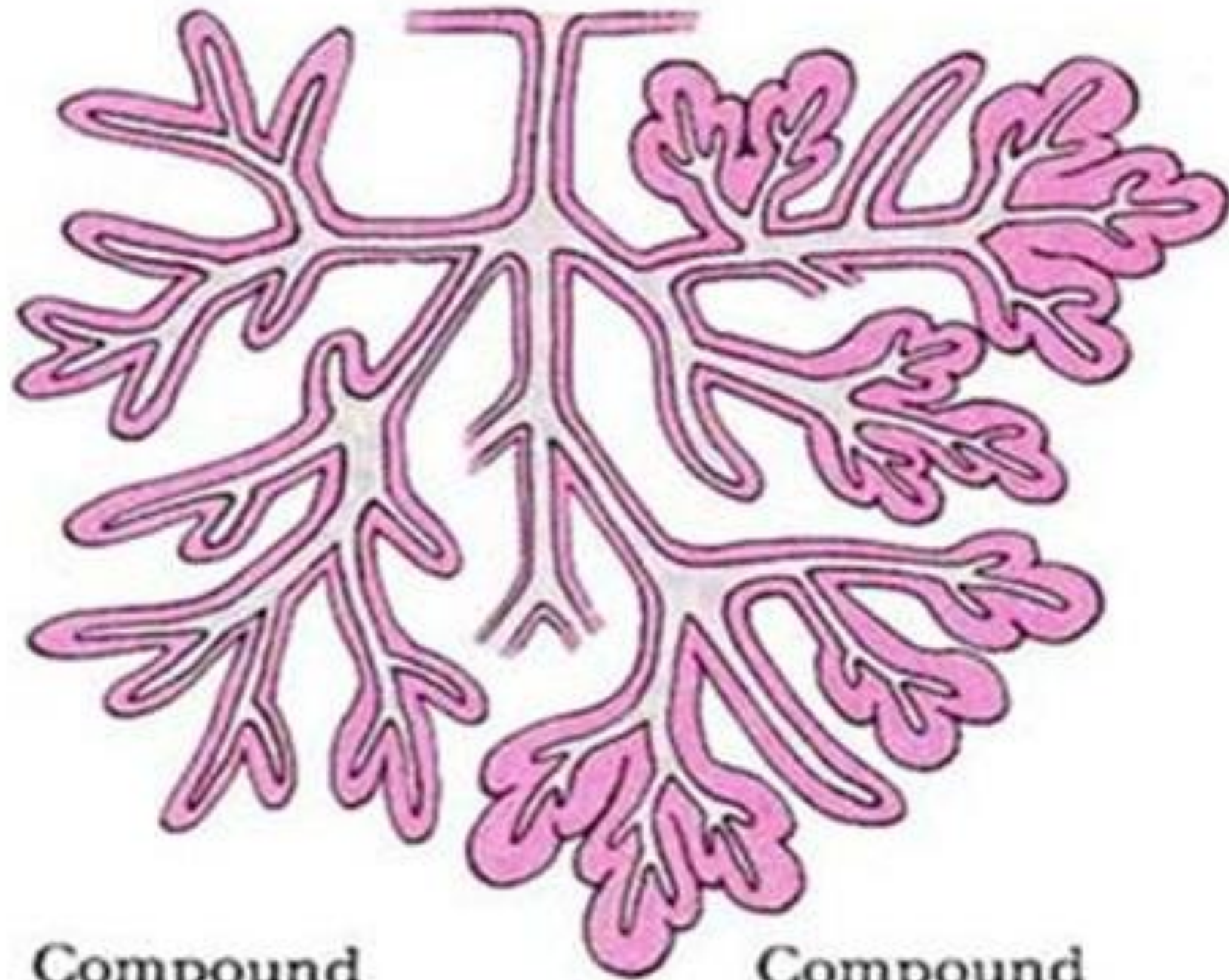
Simple branched tubular

Fundic glands of stomach



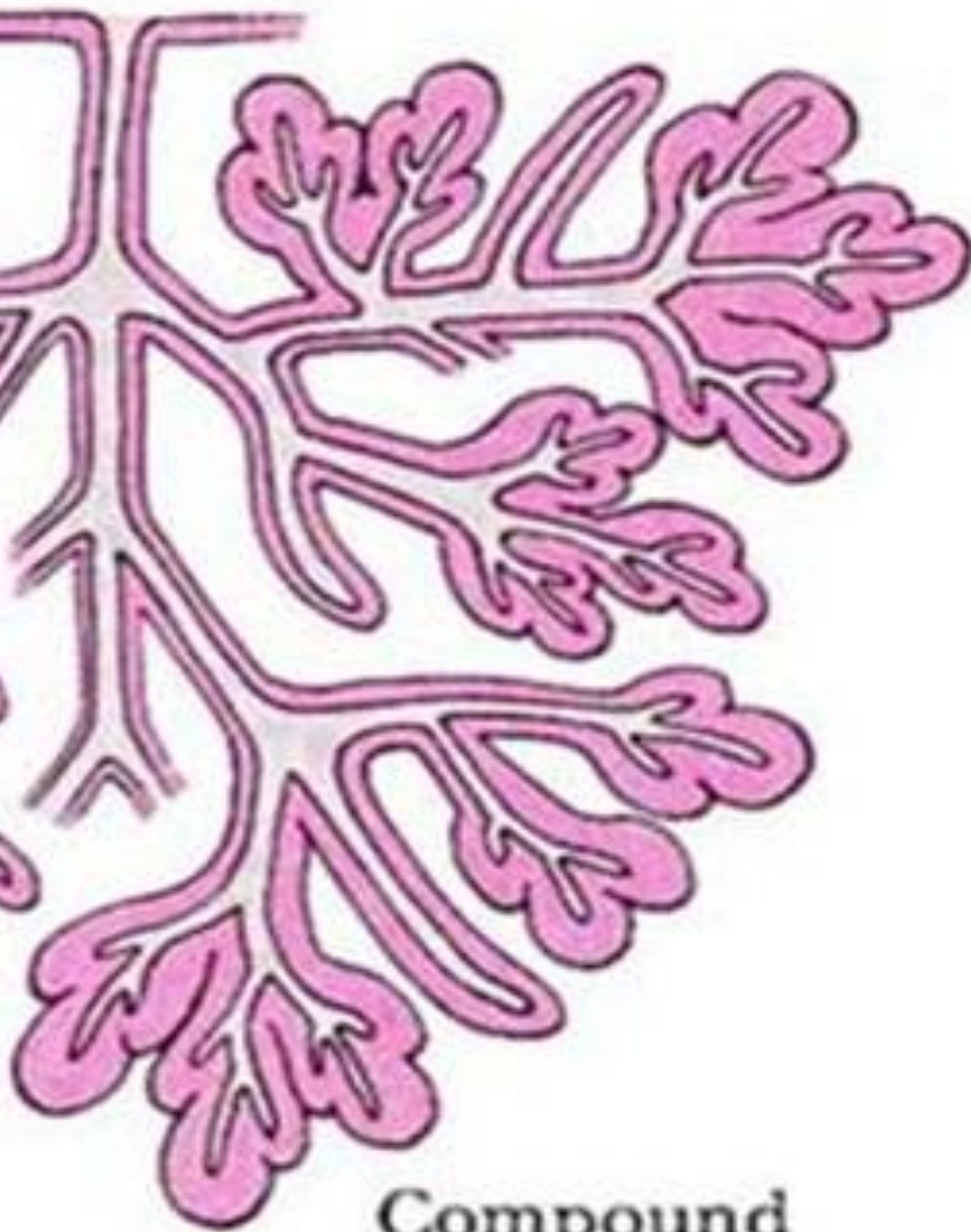
Simple branched acinar

Meibomian glands



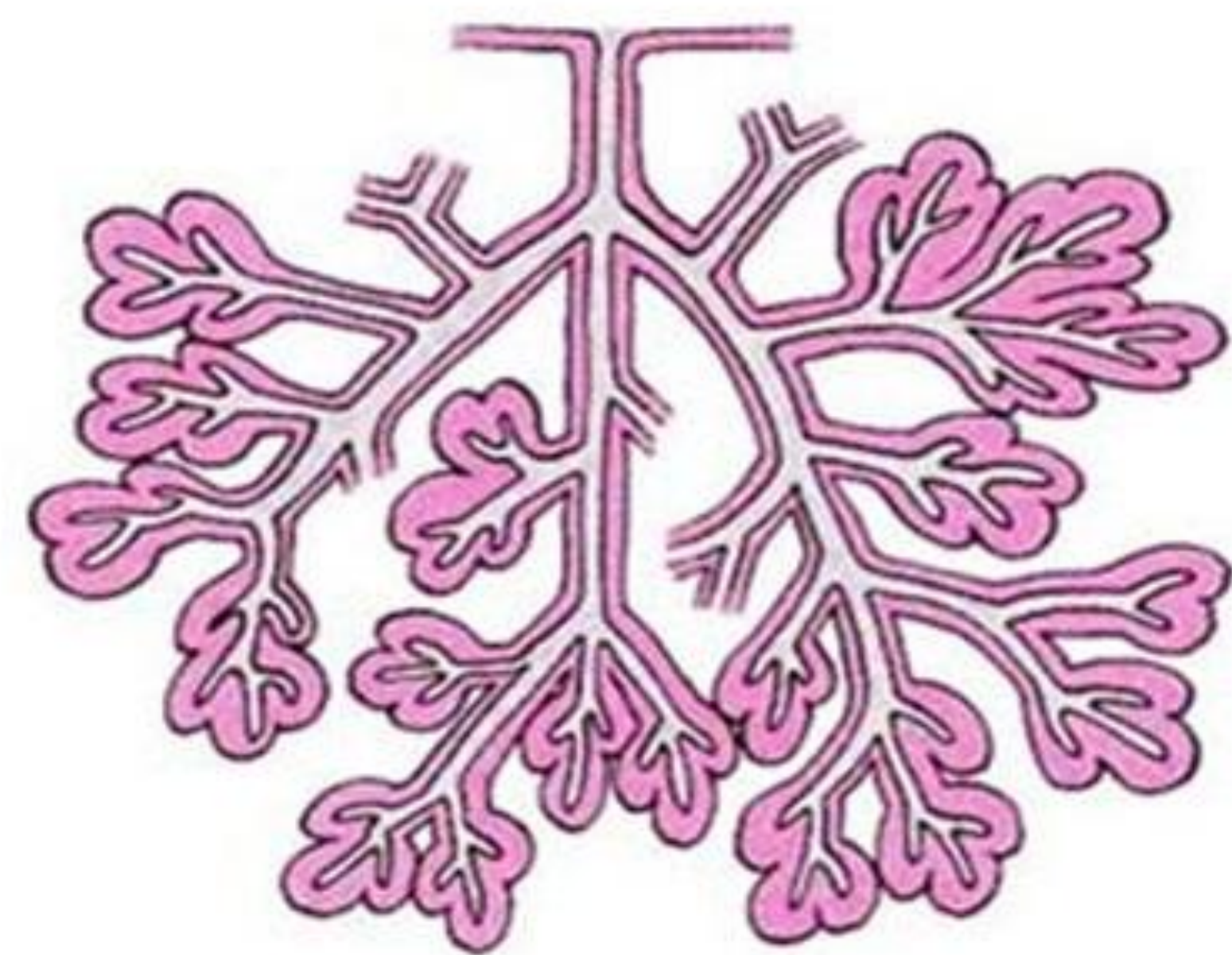
Compound tubular

Brunner glands



Compound tubuloacinar

Submandibular gland

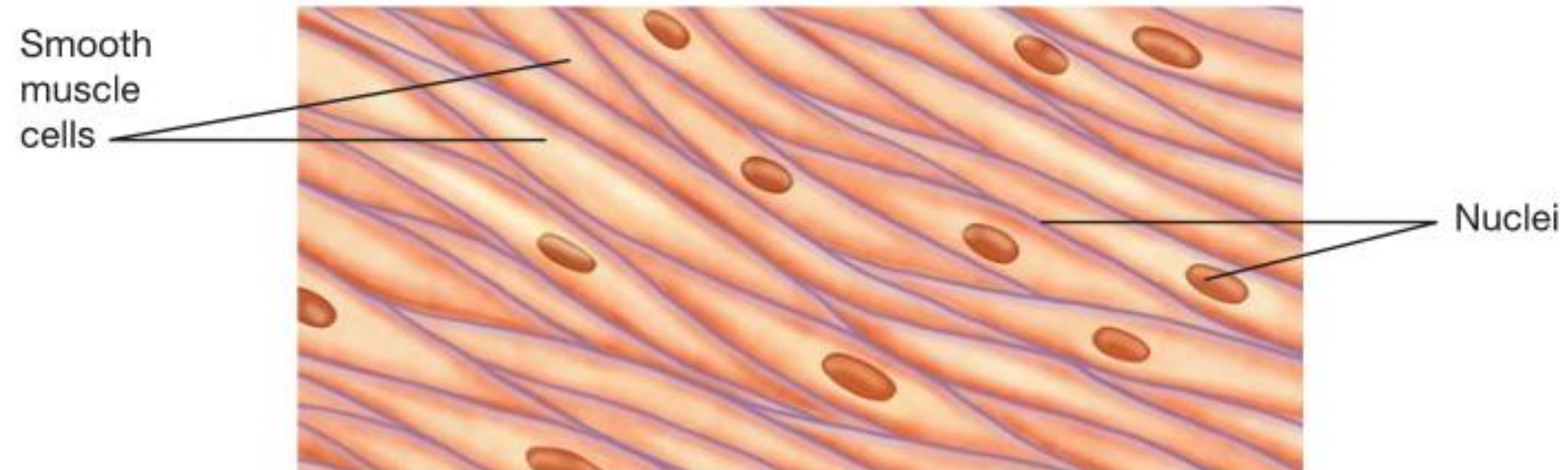


Compound acinar

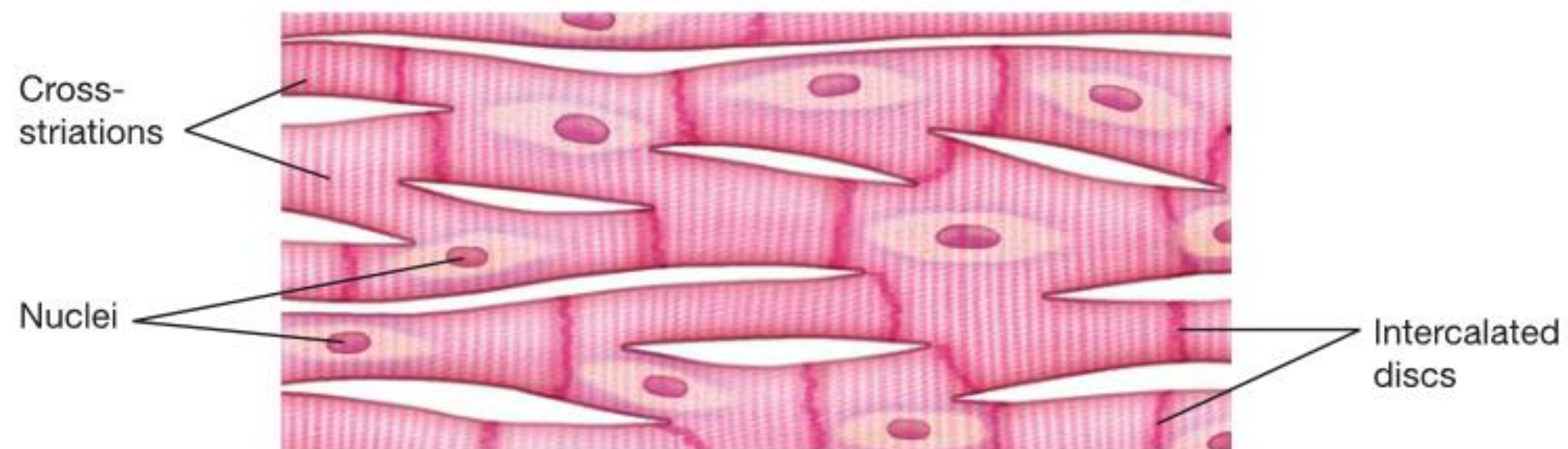
Mammary gland



A. Skeletal muscle tissue. The skeletal muscles move the body.



B. Smooth muscle tissue. The smooth muscles move food through the digestive system and perform other important involuntary functions.



C. Cardiac muscle tissue. Cardiac muscle is found only in the heart.

Skeletal Muscle

Cardiac Muscle

Smooth Muscle



Location

Attached to bone

Heart

Walls of hollow organs, blood vessels, and glands

Appearance



Cell Shape

Long, cylindrical

Branched

Spindle-shaped

Nucleus

Multiple, peripheral

Usually single, central

Single, central

Special Features

—————

Intercalated disks

Cell-to-cell attachments

Striations

Yes

Yes

No

Autorhythmic

No

Yes

Yes

Control

Voluntary

Involuntary

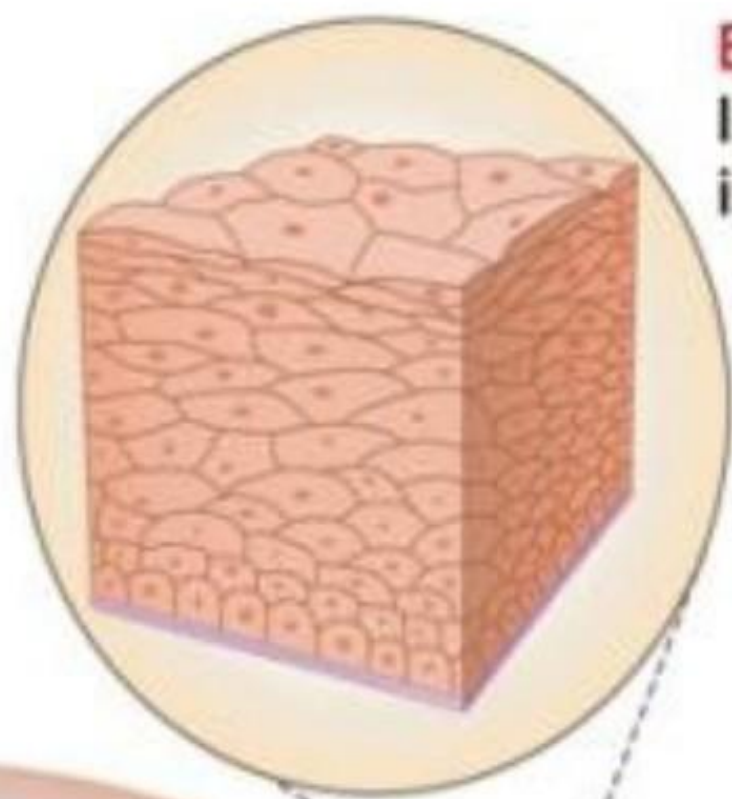
Involuntary

Function

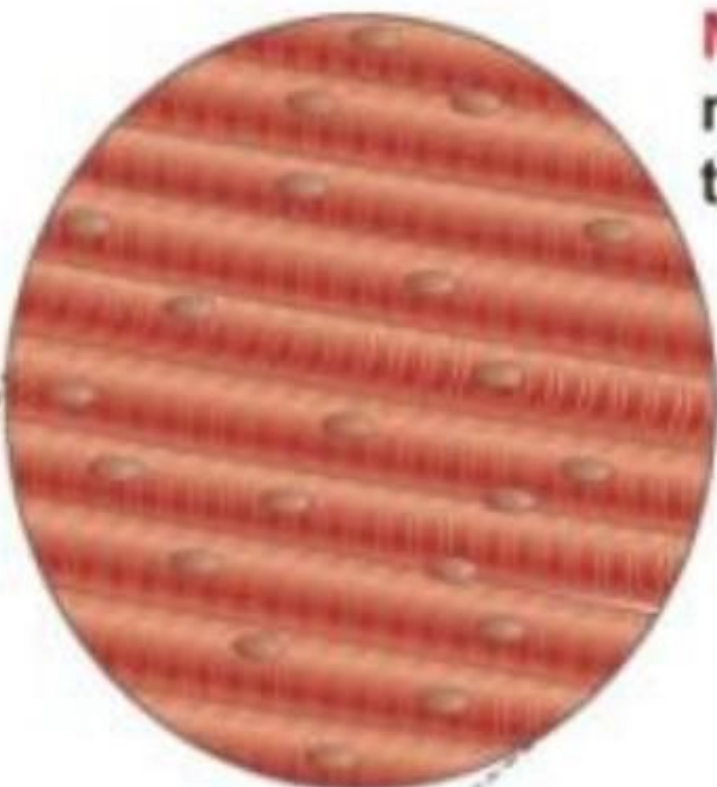
Move the whole body

Contract heart to propel blood through the body

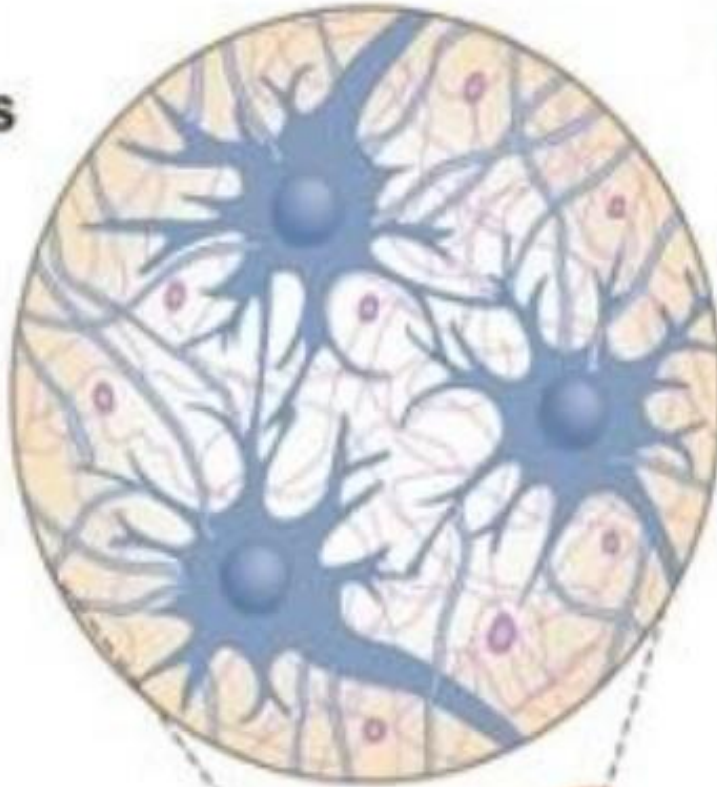
Compress organs, ducts, tubes, and so on



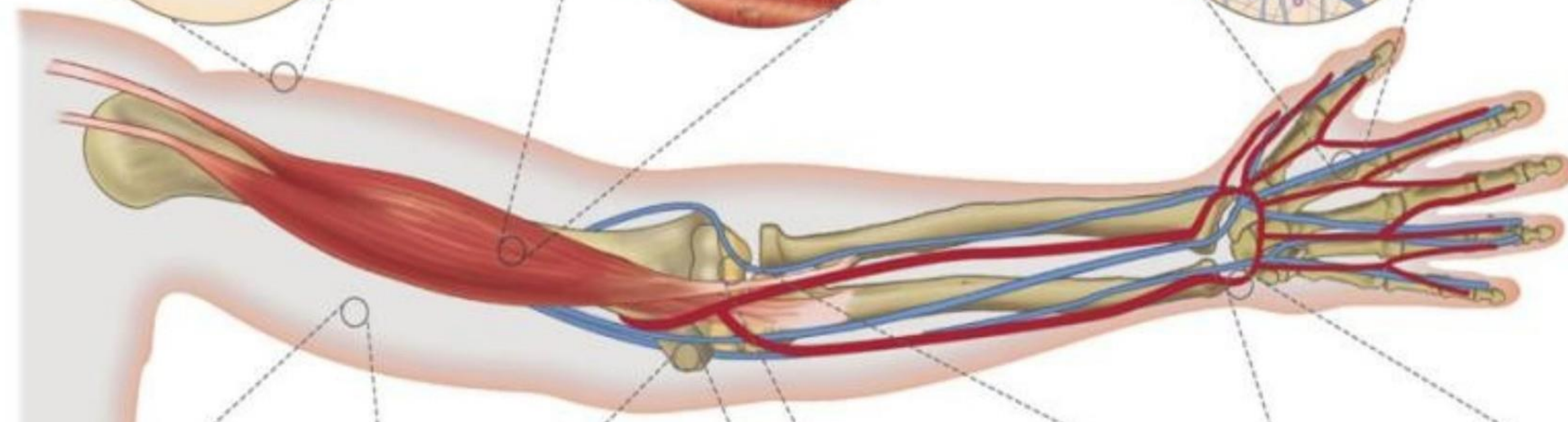
Epithelial tissue lines surfaces in the body



Muscle tissue is made up of fibers that contract



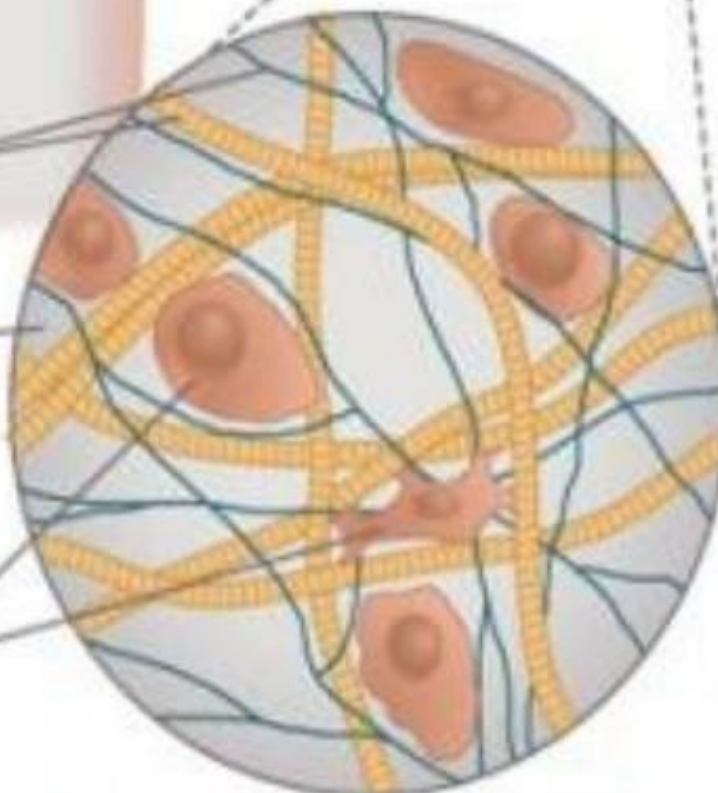
Nervous tissue consists of cells with projections that transmit electrical signals



Protein fibers

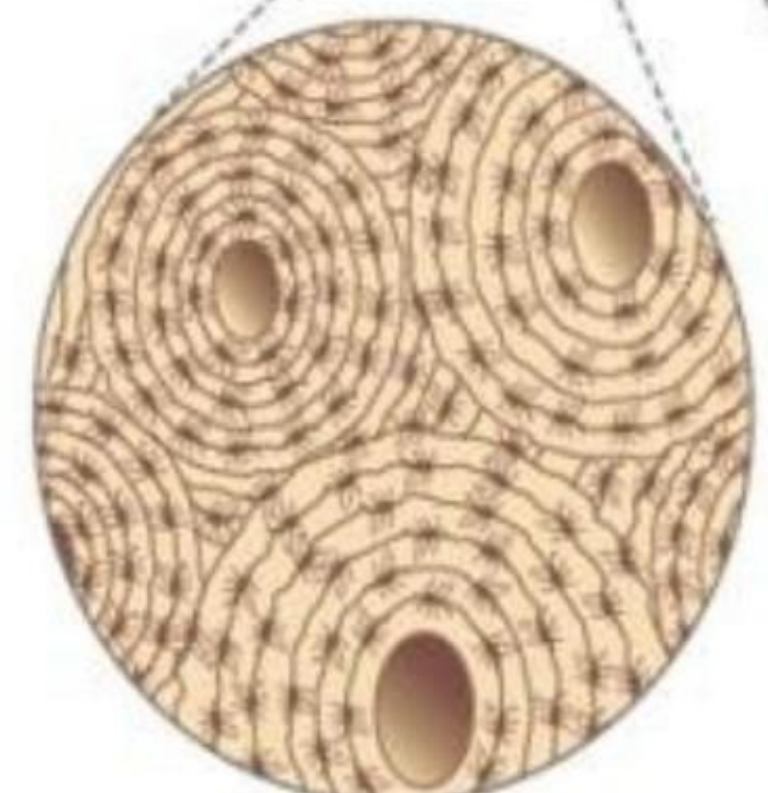
Soft extracellular matrix

Cells



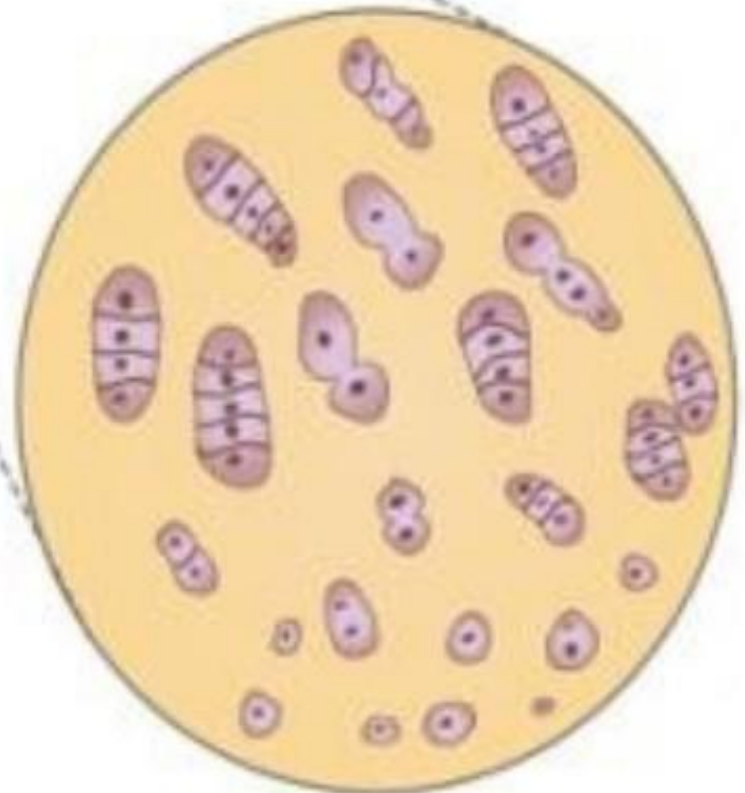
Connective tissues:

Loose connective tissue acts as padding under skin and elsewhere.

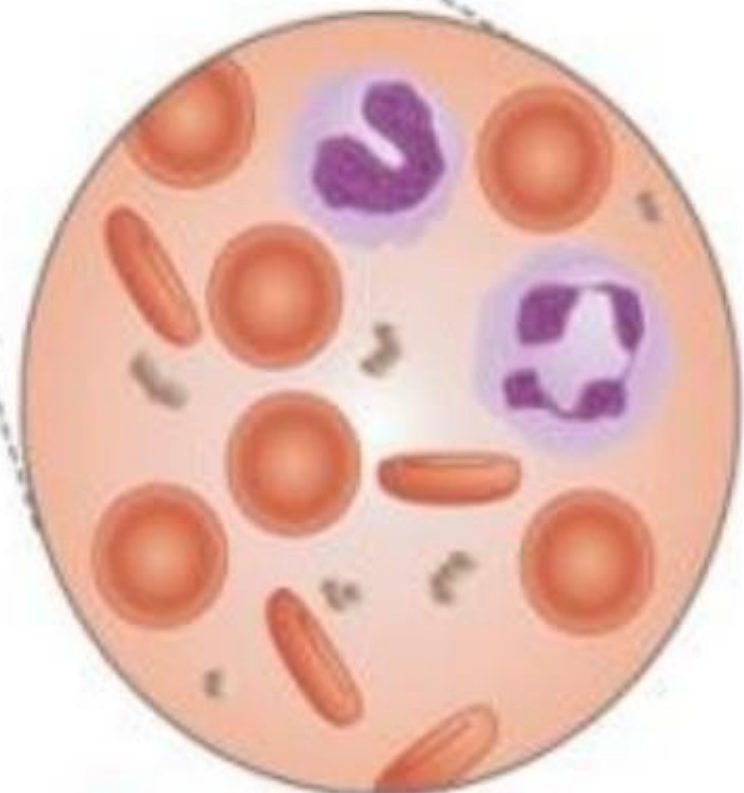


Bone

Bone and cartilage are connective tissues made up of cells in a hard or stiff extracellular matrix.



Cartilage

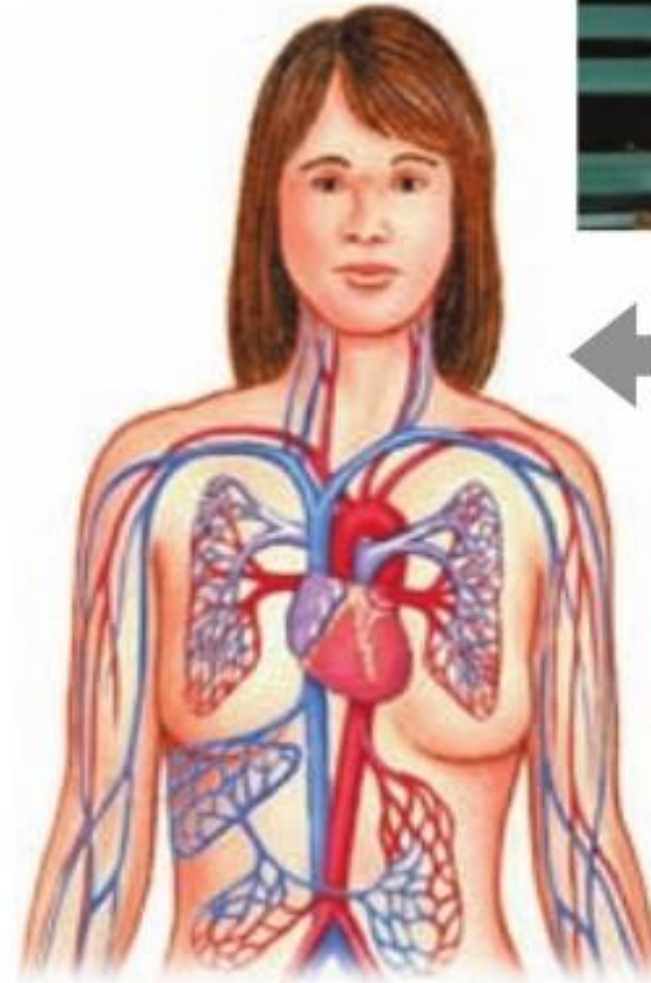


Blood is a connective tissue made up of cells in a liquid matrix.

S...



← The **organism level** is the highest level of organization and includes the structure and function of all the organ systems in the body.



← At the **organ system level**, a collection of organs functions as a unit to carry out a collection of related body activities.



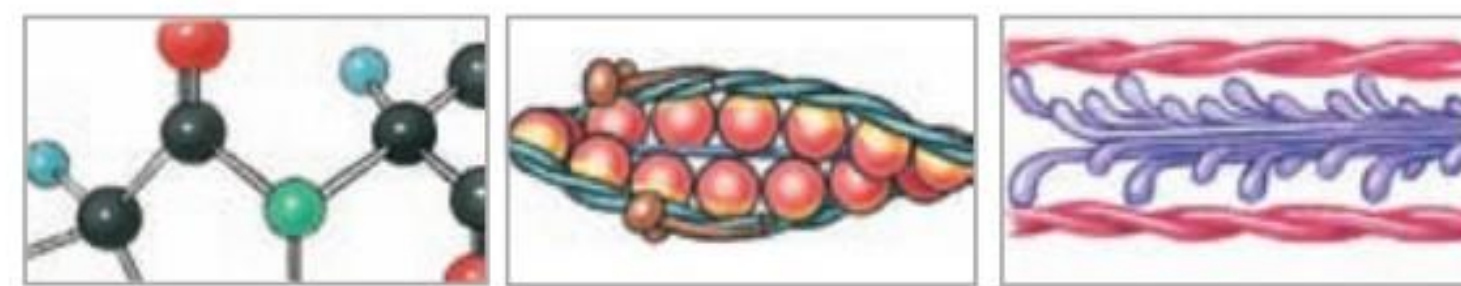
← At the **organ level**, two or more tissues are arranged into a structure that has a well-defined, three-dimensional shape and a specific bodily function.



← At the **tissue level**, collections of cells are grouped to perform a similar function.



← At the **cellular level**, organelles, which are composed of molecules, are organized in a unique way to form cells. The cell represents the fundamental unit of life.



← At the **chemical level**, the chemical bonds between atoms give rise to molecules.

Leo.AJX



Thank you for listening