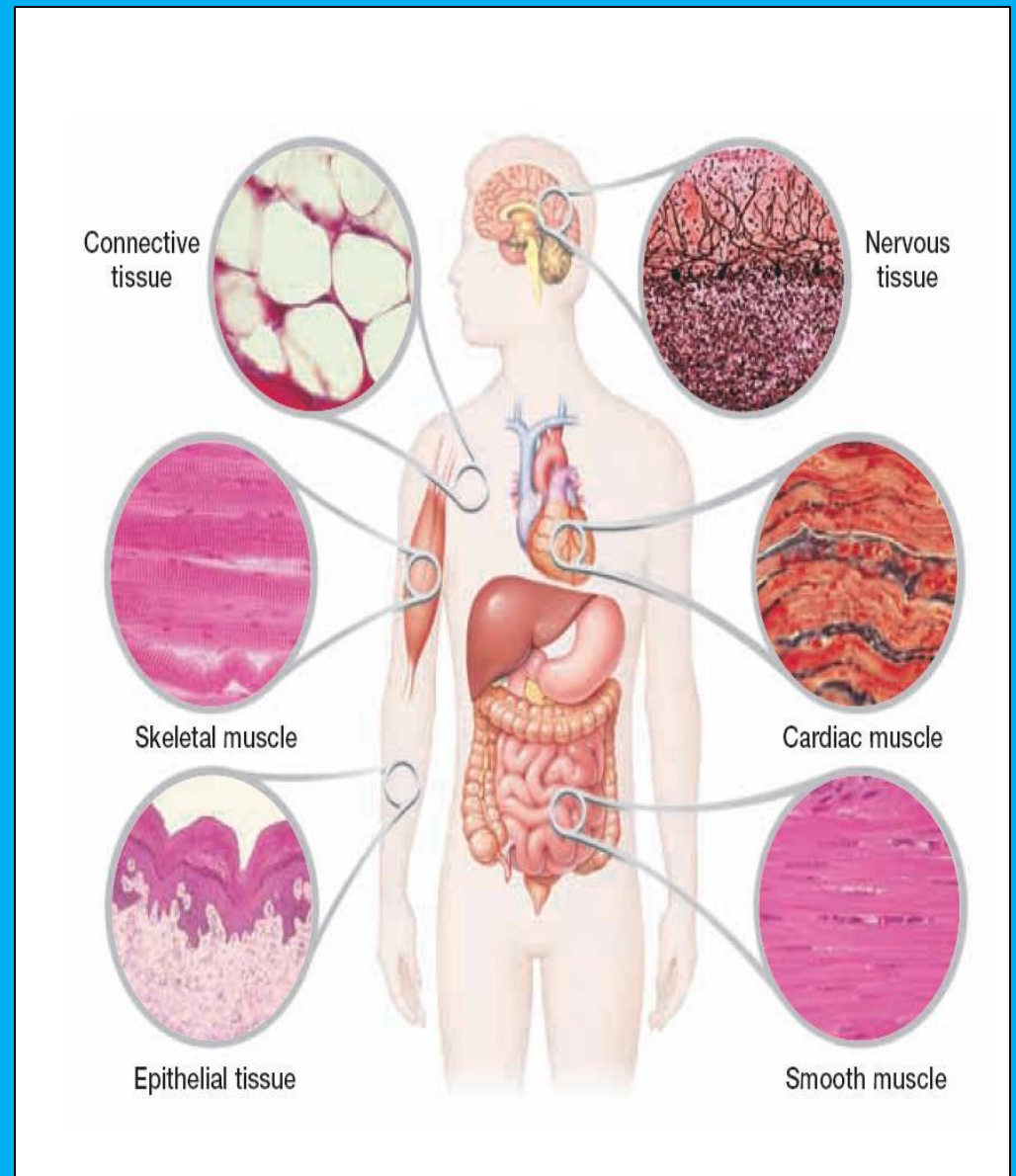


Ussein Yessen
Teacher of Biology

Tissues of the human body

Tissue

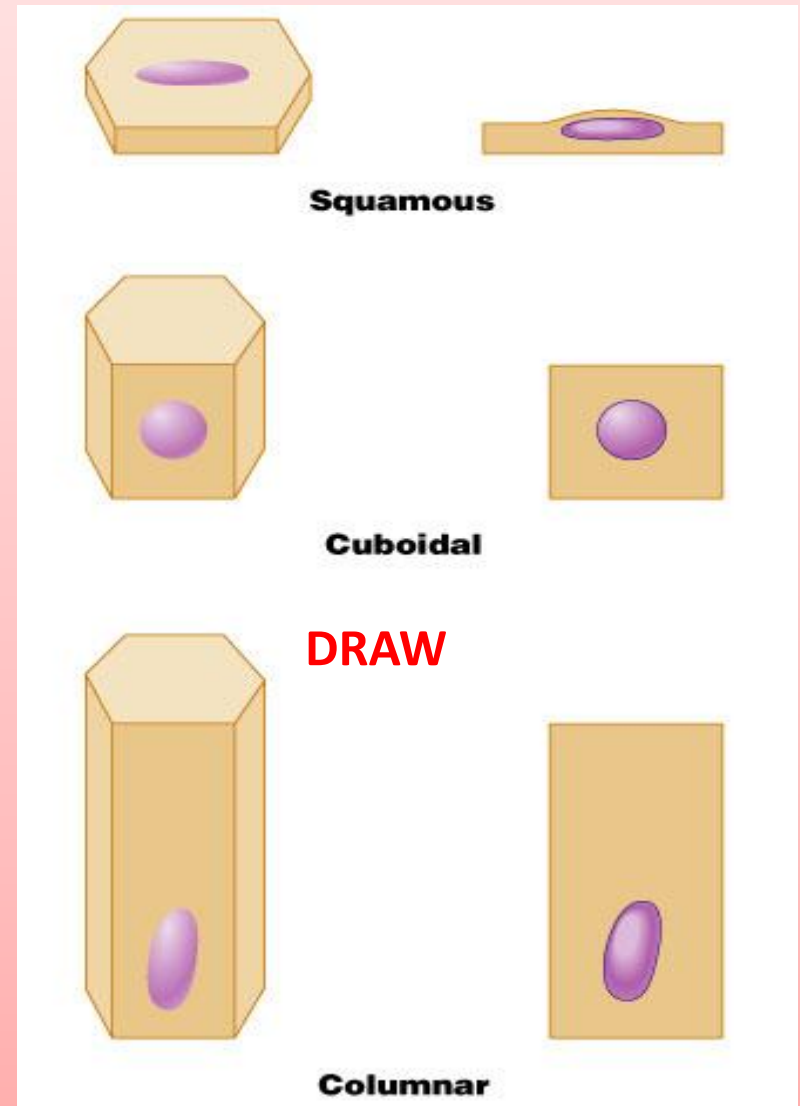
- A *tissue* is a group of cells similar in structure and performing a common function



Tissues of human

Epithelium

- Lines, covers, and protects other tissues and organs
 - Cells tightly **junked together**
 - Named by:
 - Cell shape
- 1) **Squamous**
 - 2) **Cuboidal**
 - 3) **Columnar**



Types of epithelial tissue

Squamous Epithelium (плоский)

– Simple Squamous Epithelium

- Air sacs of lungs
- Lining of blood vessels

– Stratified Squamous Epithelium

- Skin
- Mouth

DRAW

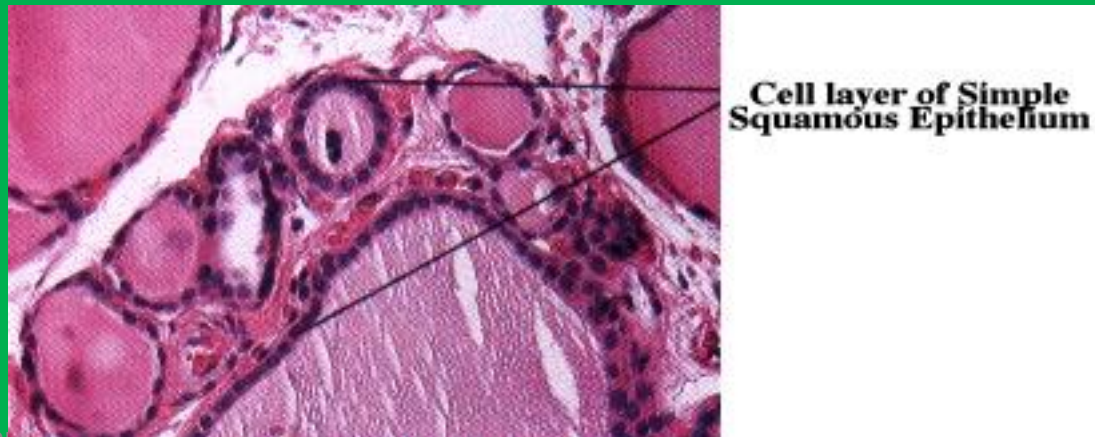
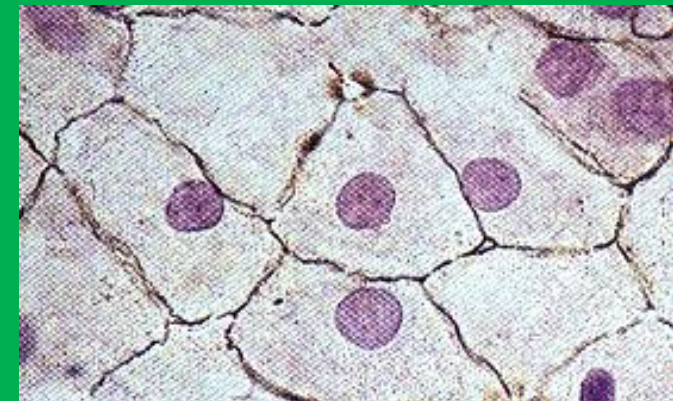
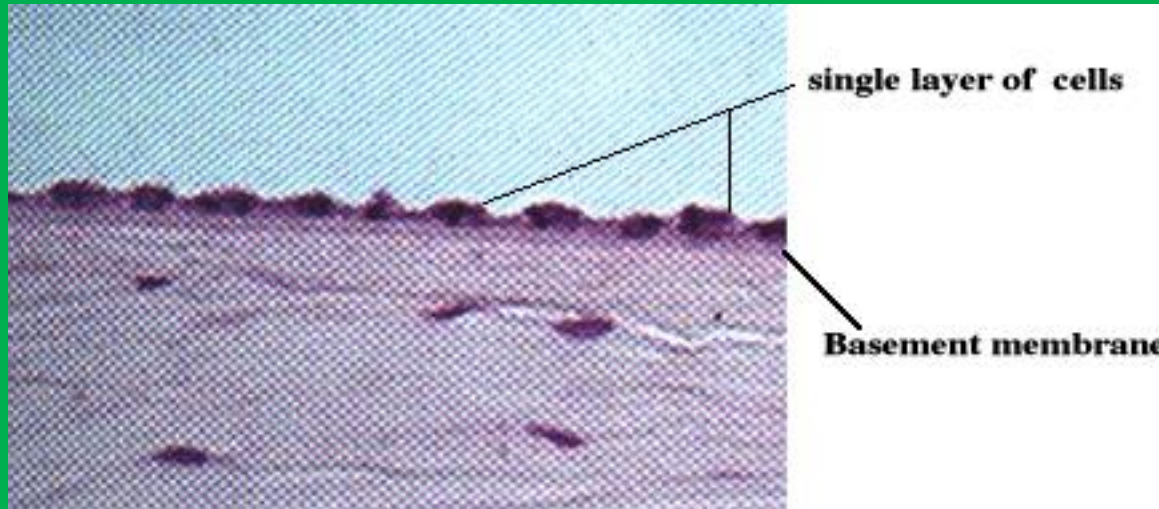


Simple squamous

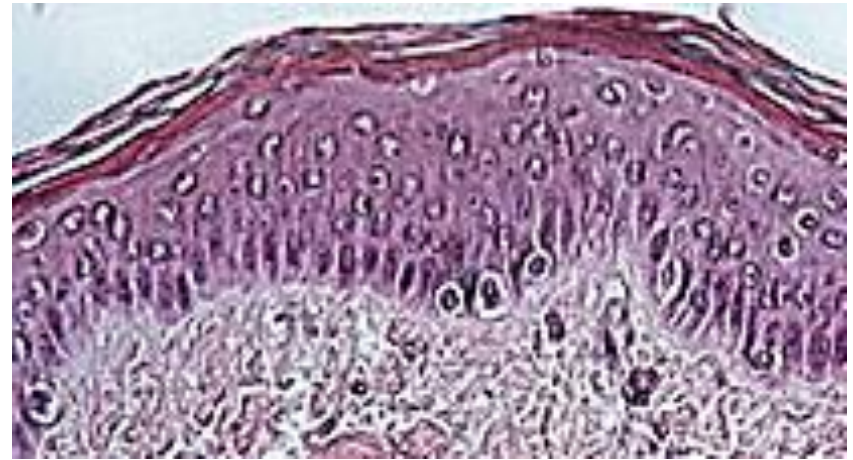
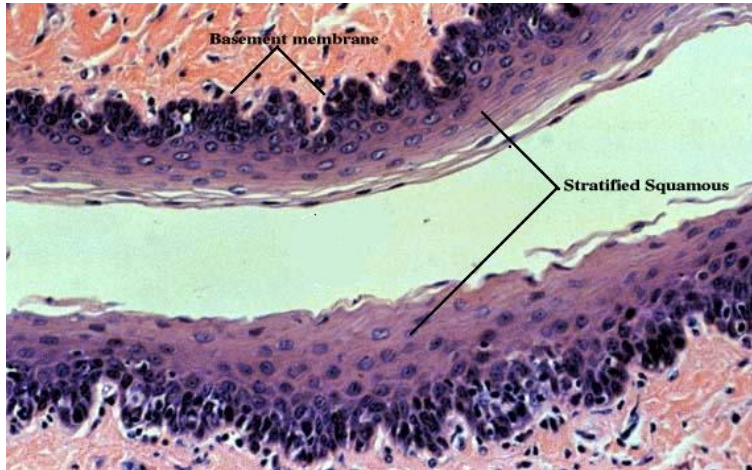


Stratified squamous

Examples of Simple Squamous Epithelium

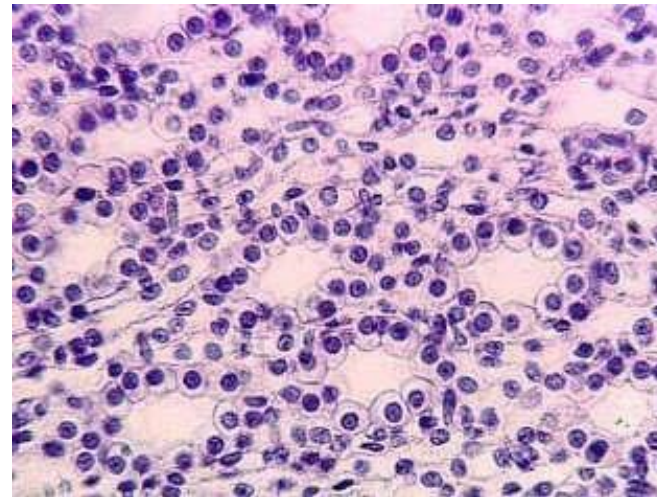
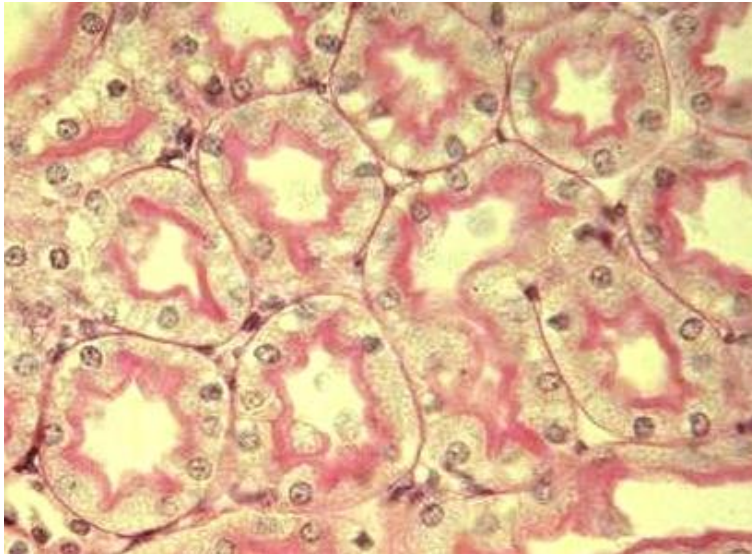
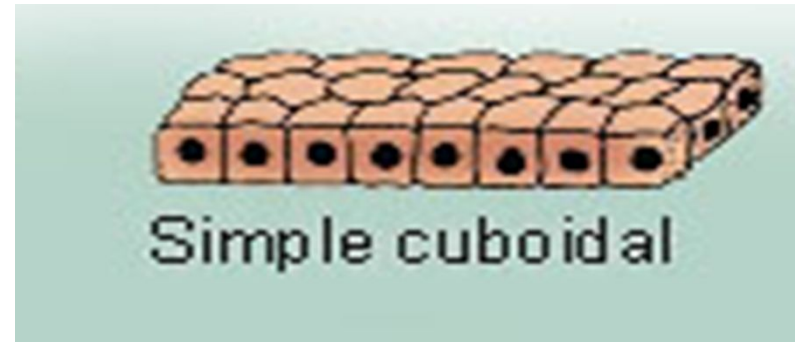


Stratified (многослойный) Squamous Epithelium



Cuboidal Epithelium

- Kidney tubules (почечные канальцы)
- Surface of ovary (яичник)



Columnar (цилиндрический) Epithelium

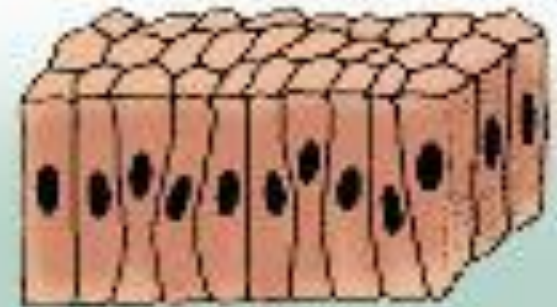
DRAW

– Simple Columnar Epithelium

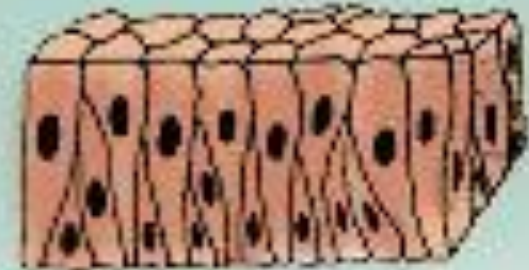
- A single layer of cells that line the digestive tract, gallbladder (желчный пузырь)

– Pseudostratified columnar epithelium

- Lines the bronchi, trachea and uterine tubes (трубки матки)

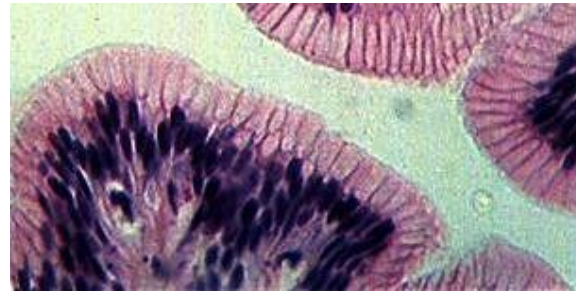
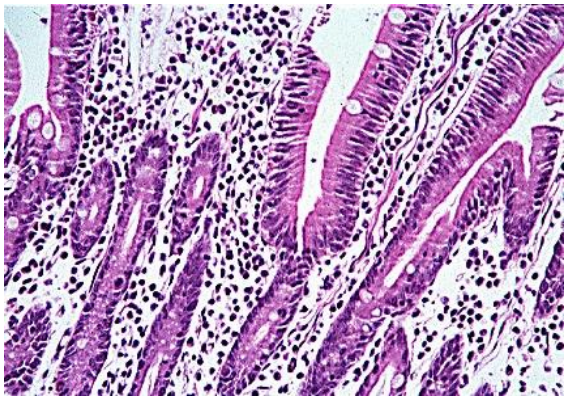
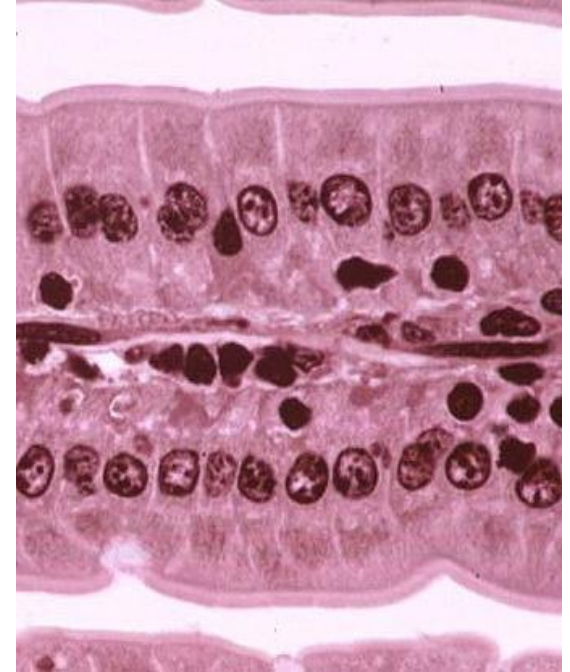
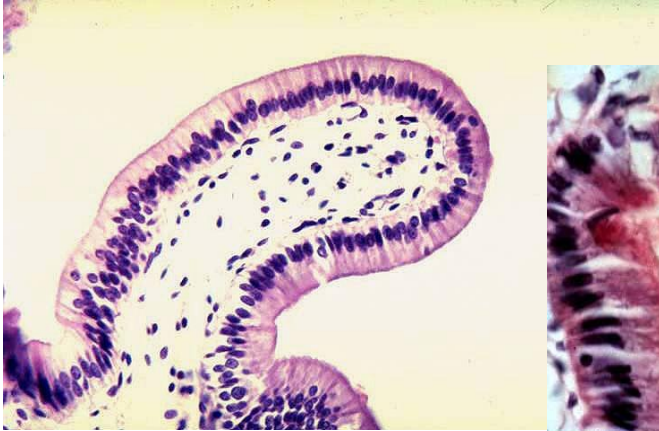


Simple columnar

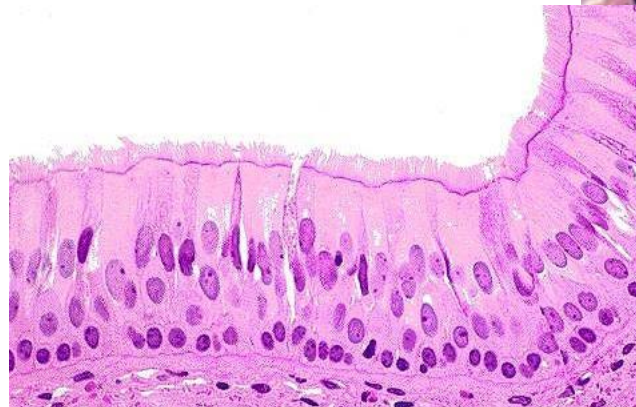
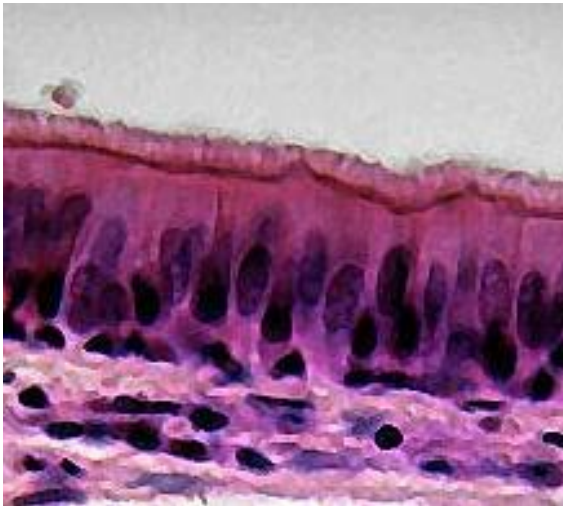
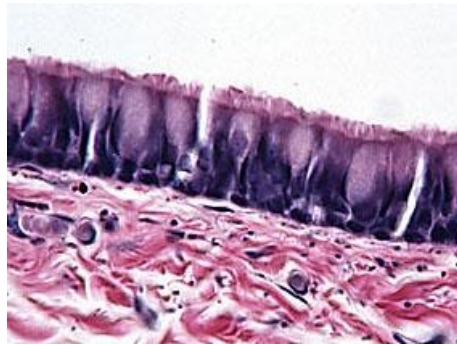
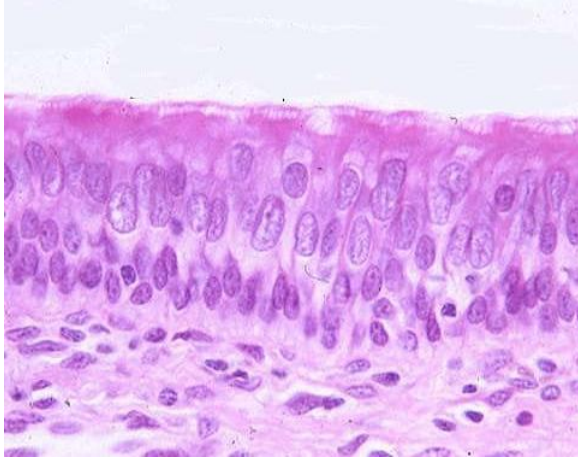


Pseudostratified colu

Simple Columnar epithelium



Pseudostratified Columnar Epithelium



- Found everywhere in the body

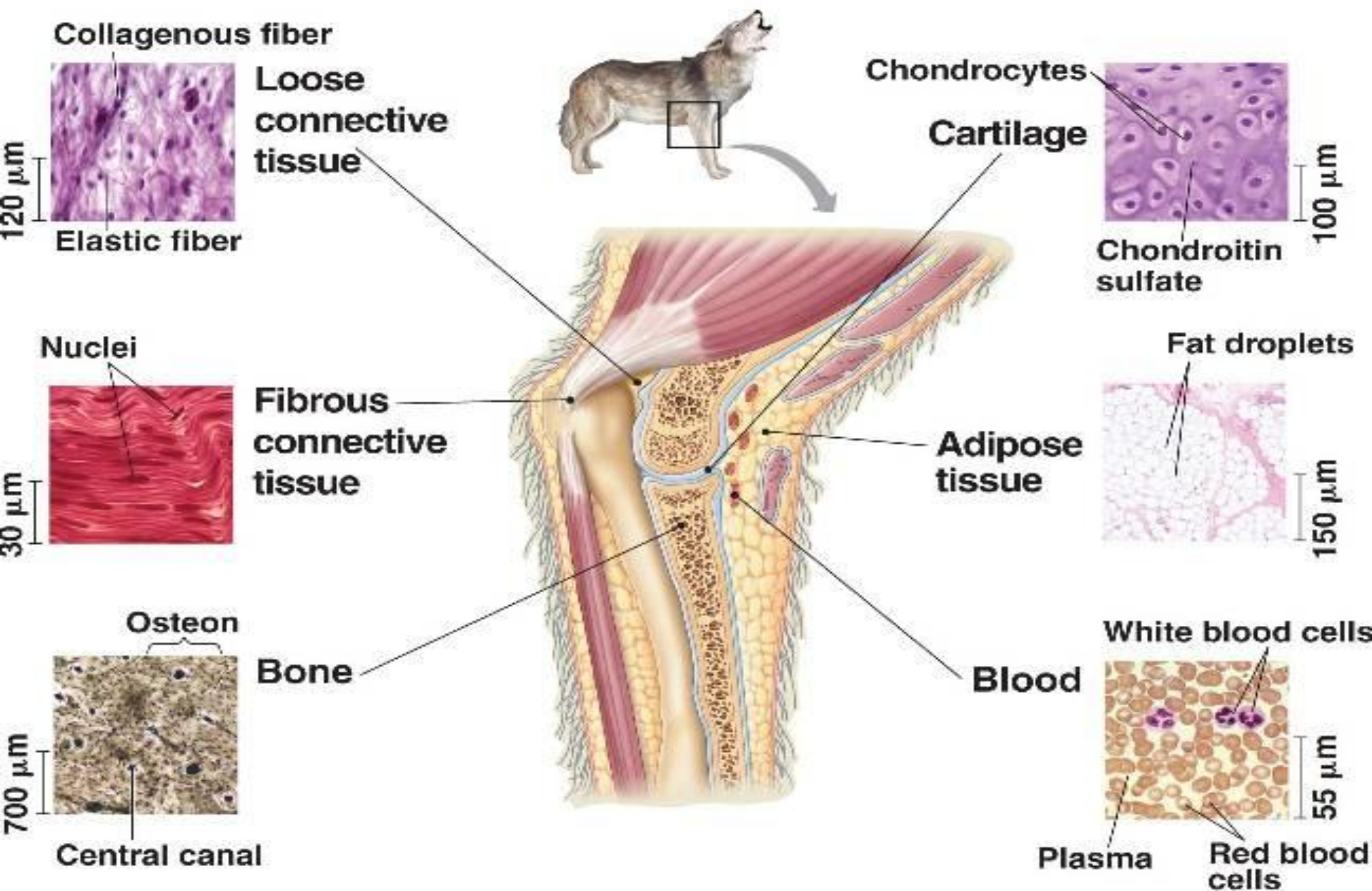
- 6 main classes:

- Loose
- Fibrous
- Cartilage
- Bone
- Adipose
- Blood

- Major functions

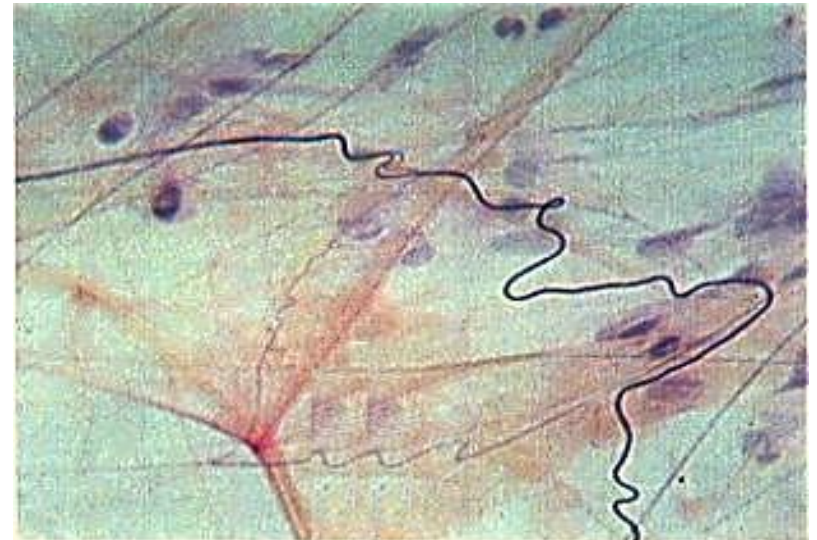
- Binding and support
- Protection
- Insulation
- Transportation

Connective Tissue



- Loose Connective Tissue: binds the skin to the muscle

- Ex: elastic and collagen fibers



Fibrous Connective Tissue

- Tendons – attach muscles to bones
- Ligaments – connect bones at joints

Medial view
of knee



Femoral
groove

Patella



Quadriceps
tendon

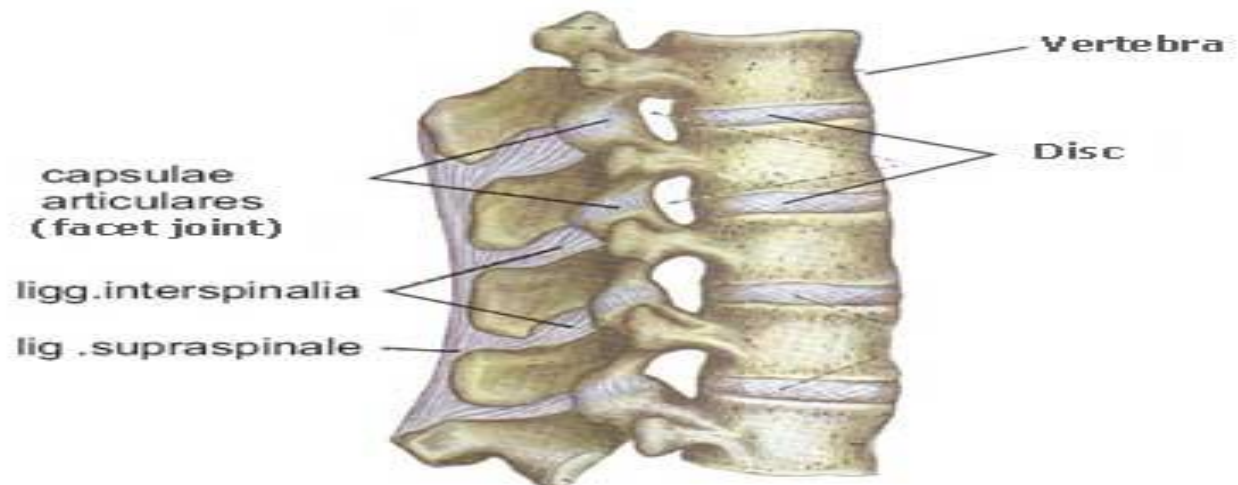
Medial
patellofemoral
ligament

Patellar
tendon

Tibia

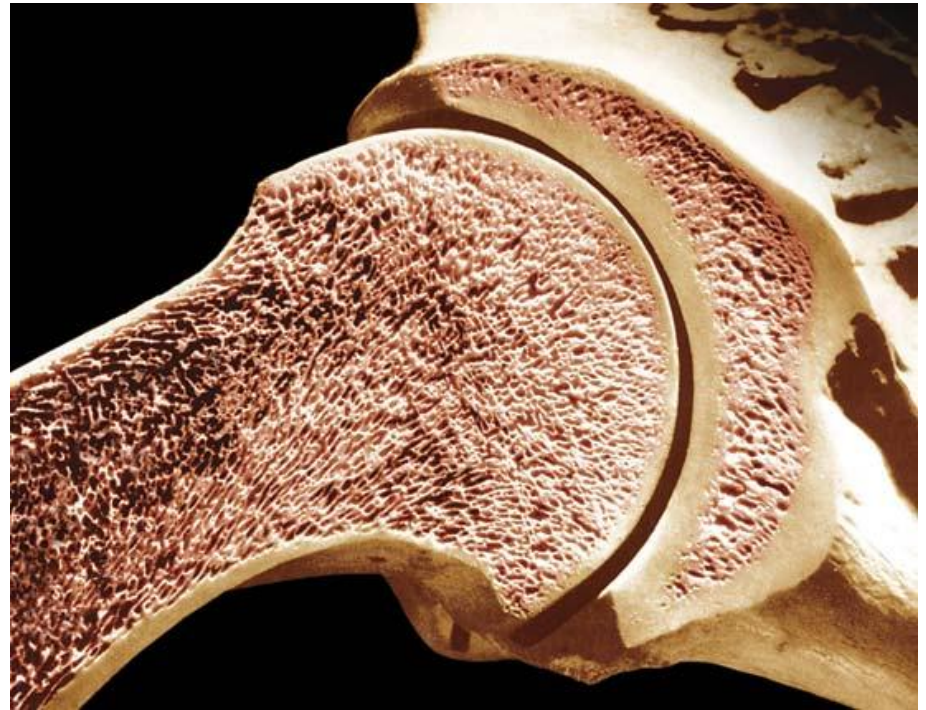
3 types of cartilage

- 1. Hyaline: soft part of the nose, supporting rings of the trachea.
- 2. Elastic: ears and larynx (глотка).
- 3. Fibrocartilage - ВОЛОКНИСТЫЙ ХРЯЩ : intervertebral discs and knees.

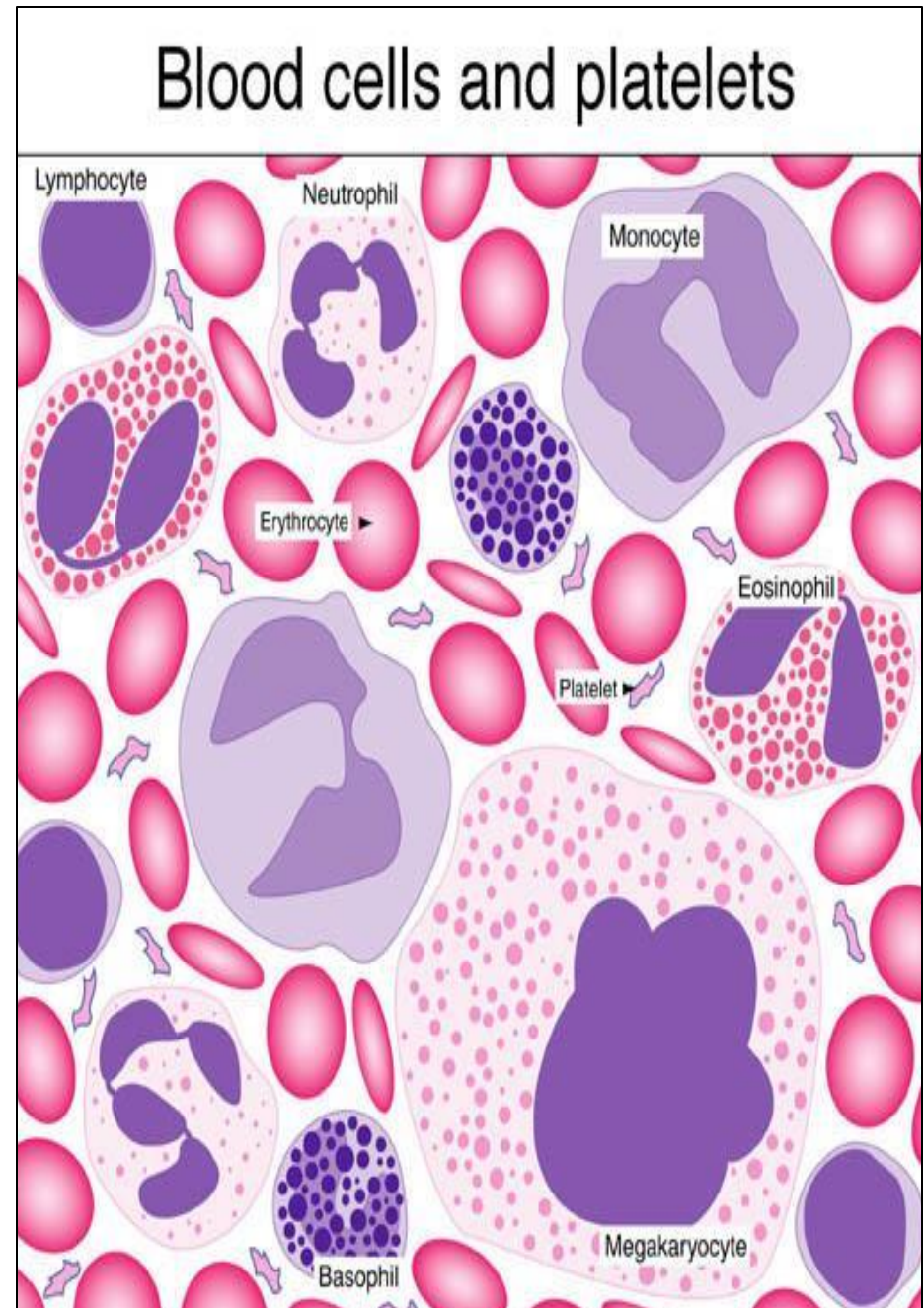


- **Bone**

- Consists of bone cells (osteocytes) and a calcified cartilage matrix

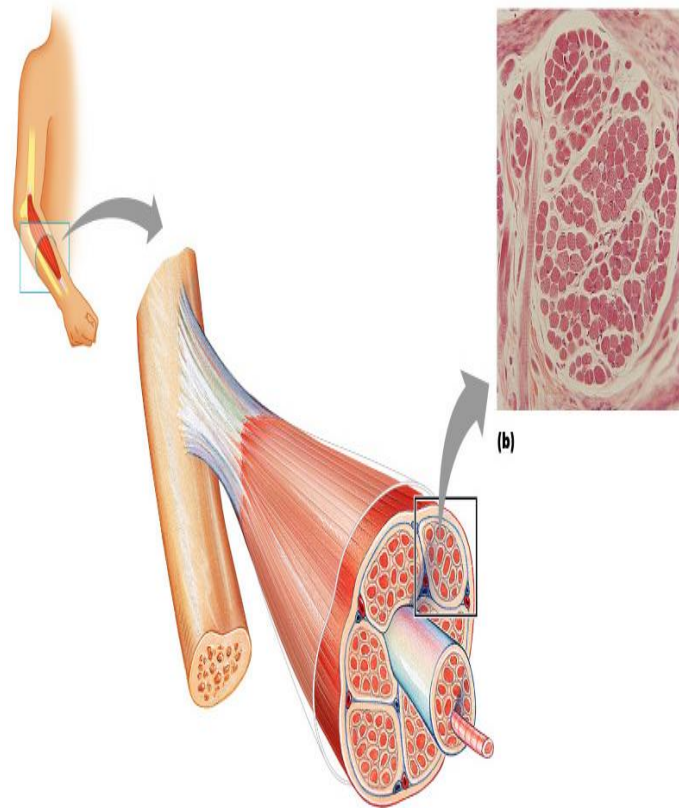
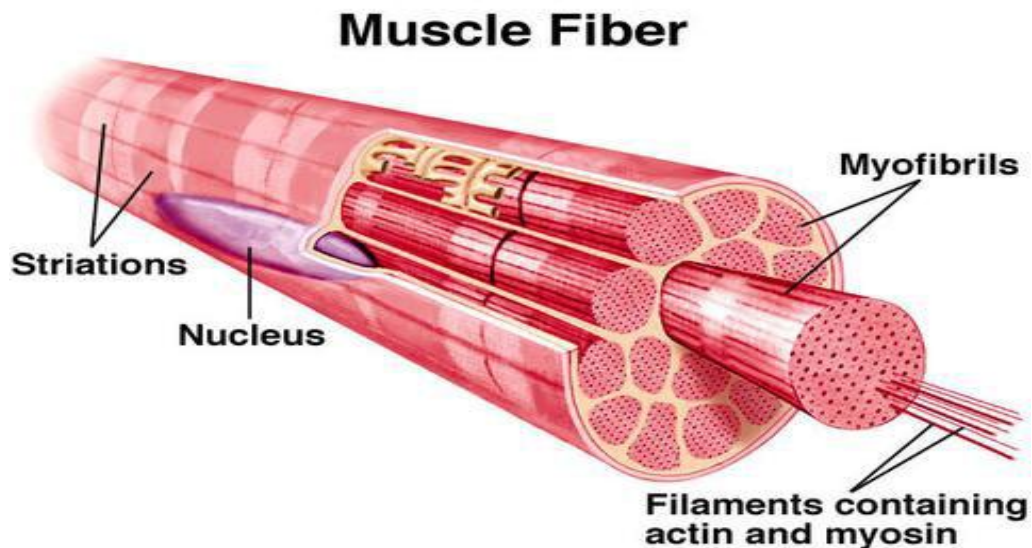


- **BLOOD TISSUE**
- **1. Red blood cells (erythrocytes):** transport gases
- **2. White blood cells (leucocytes):** fight infection
- **3. Platelets (thrombocytes) – кровяные пластинки:** cause blood clotting



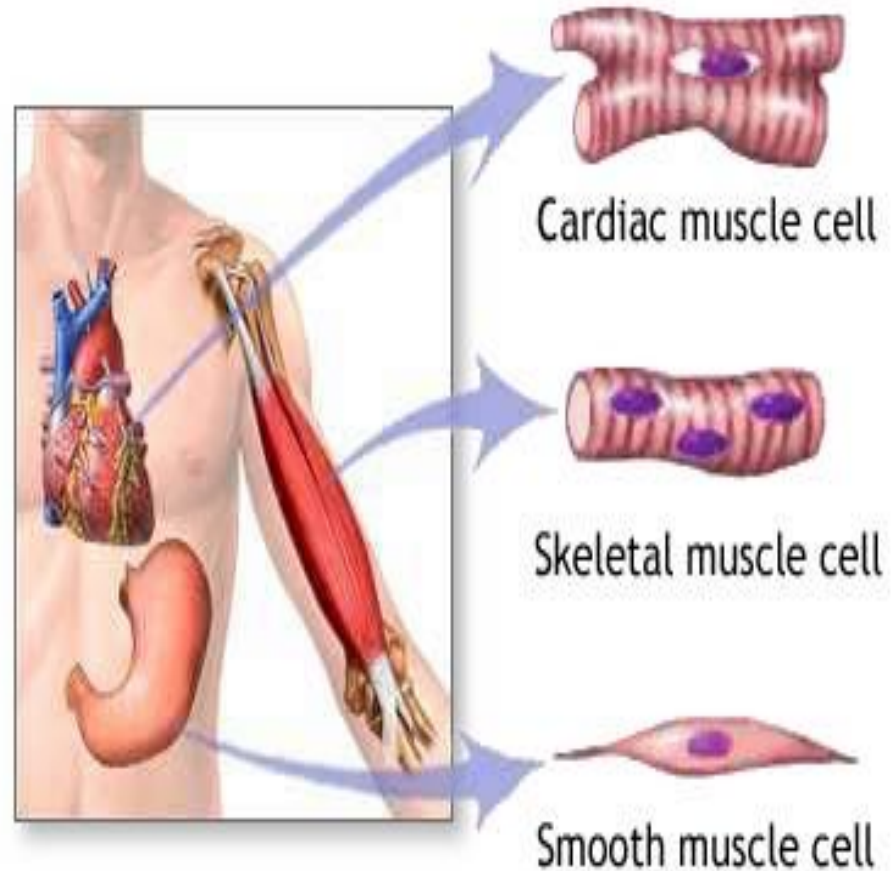
Skeletal muscle

- Responsible for voluntary (произвольный) movements
- Consists of muscle fibers



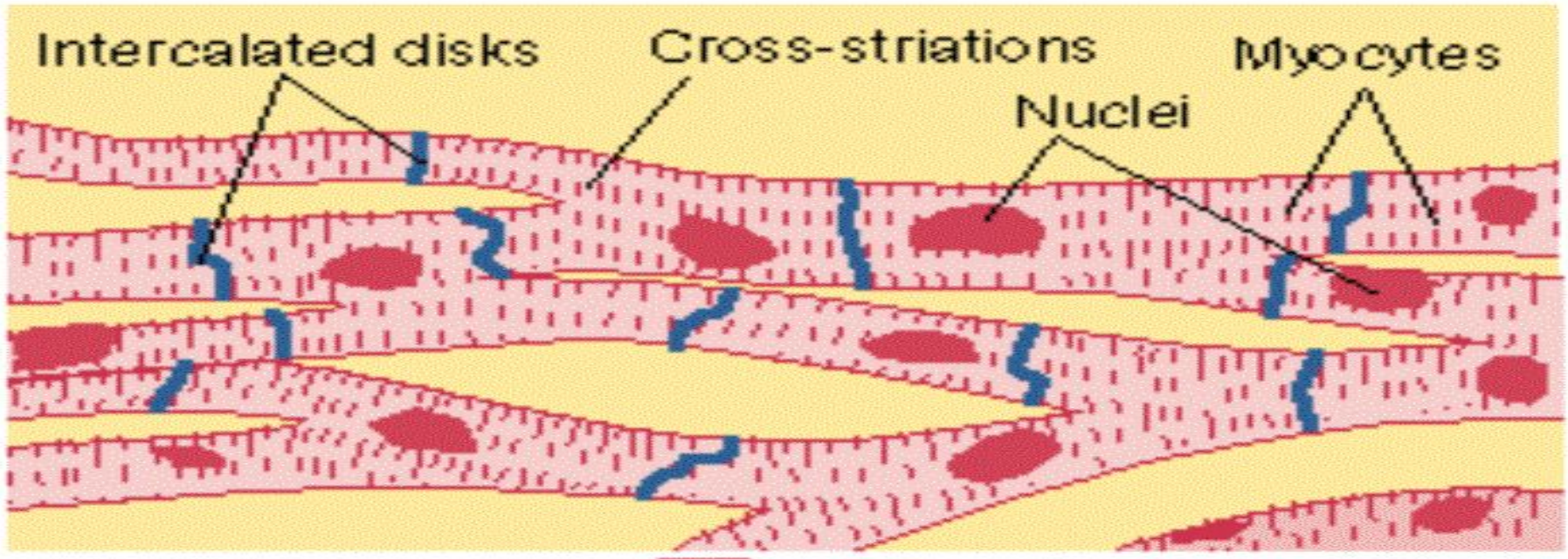
Smooth muscle (гладкая)

- Found in the walls of digestive organs, urinary bladder (мочевой пузырь) and arteries.
- Responsible for involuntary (непроизвольный) movements



CARDIAC MUSCLE

- Forms the contractile (сокращающийся) walls of the heart

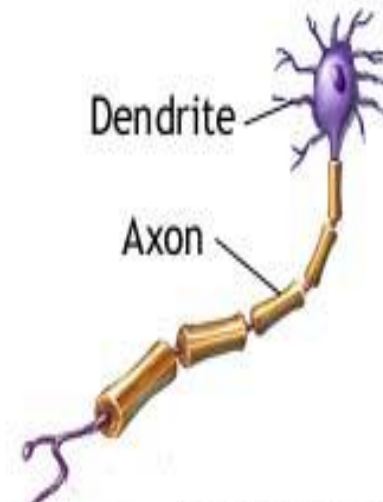


Nervous tissue

- **Function:**
Transmission of information
- Composed of nerve cells called NEURONS
- Found in brain, spinal cord and nerves



Aging brain



Neurons in aging brain

Terminology

English	Russian	Kazakh
Connective tissue		
	Покровная ткань	
		Эпителий ұлпасы
Function		
	Основная ткань	
		Өткізуші ұлпа
To magnify		
	Нервная ткань	
		Бұлшықет ұлпасы
Secretory tissue		
	Образовательная ткань	
		Өткізуші ұлпа

● **THANKS!!!!!!**

