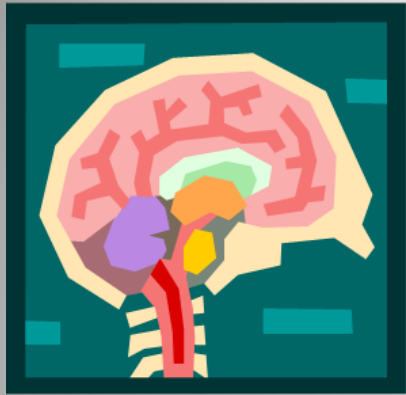


Human Body Systems

You Can't Have One Without The Other

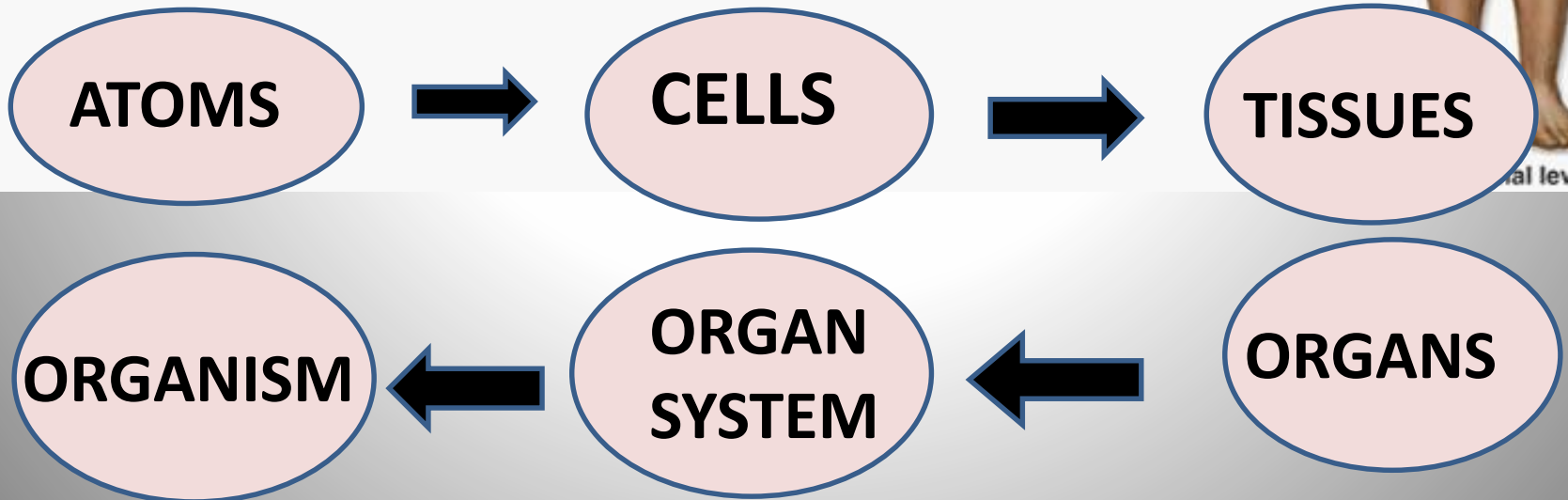
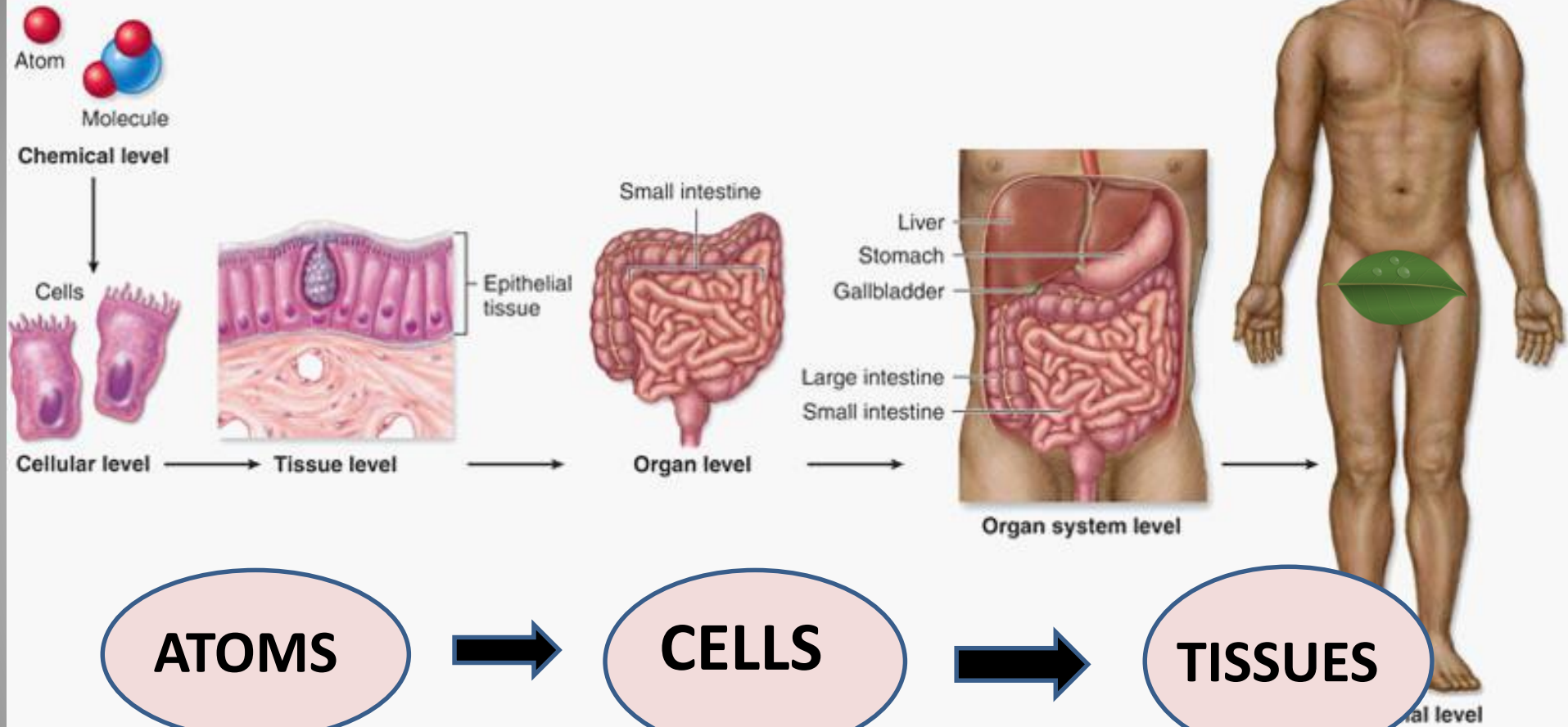
The Human Body Team



How does the body get the systems to work together?

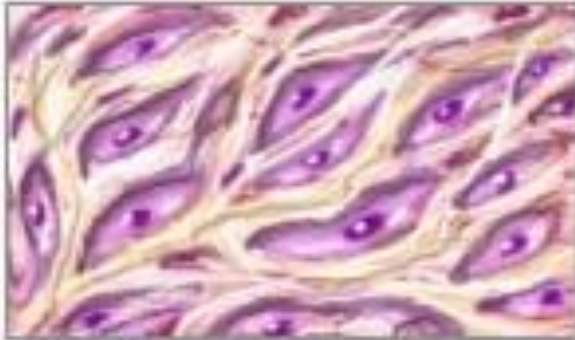
To answer this question, we need to recall the organizational structure of multicellular organisms.

Levels Of Organization



The Human Body has 4 Main Types of Tissues

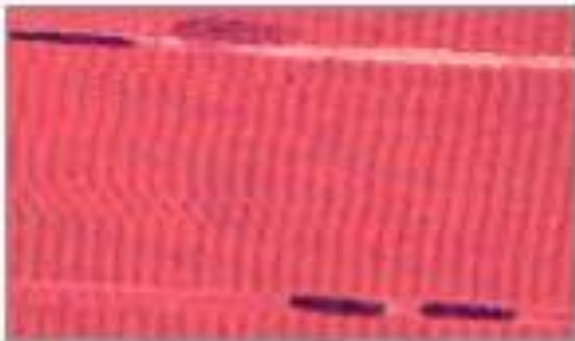
Four types of tissue



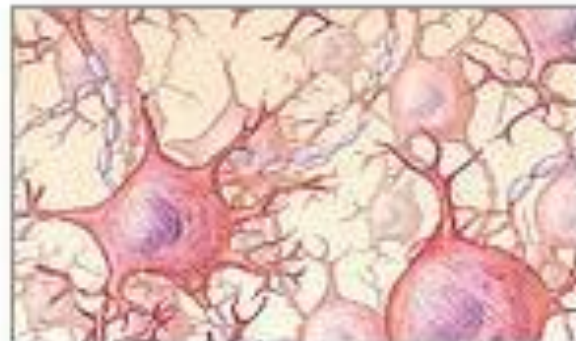
Connective tissue



Epithelial tissue



Muscle tissue



Nervous tissue

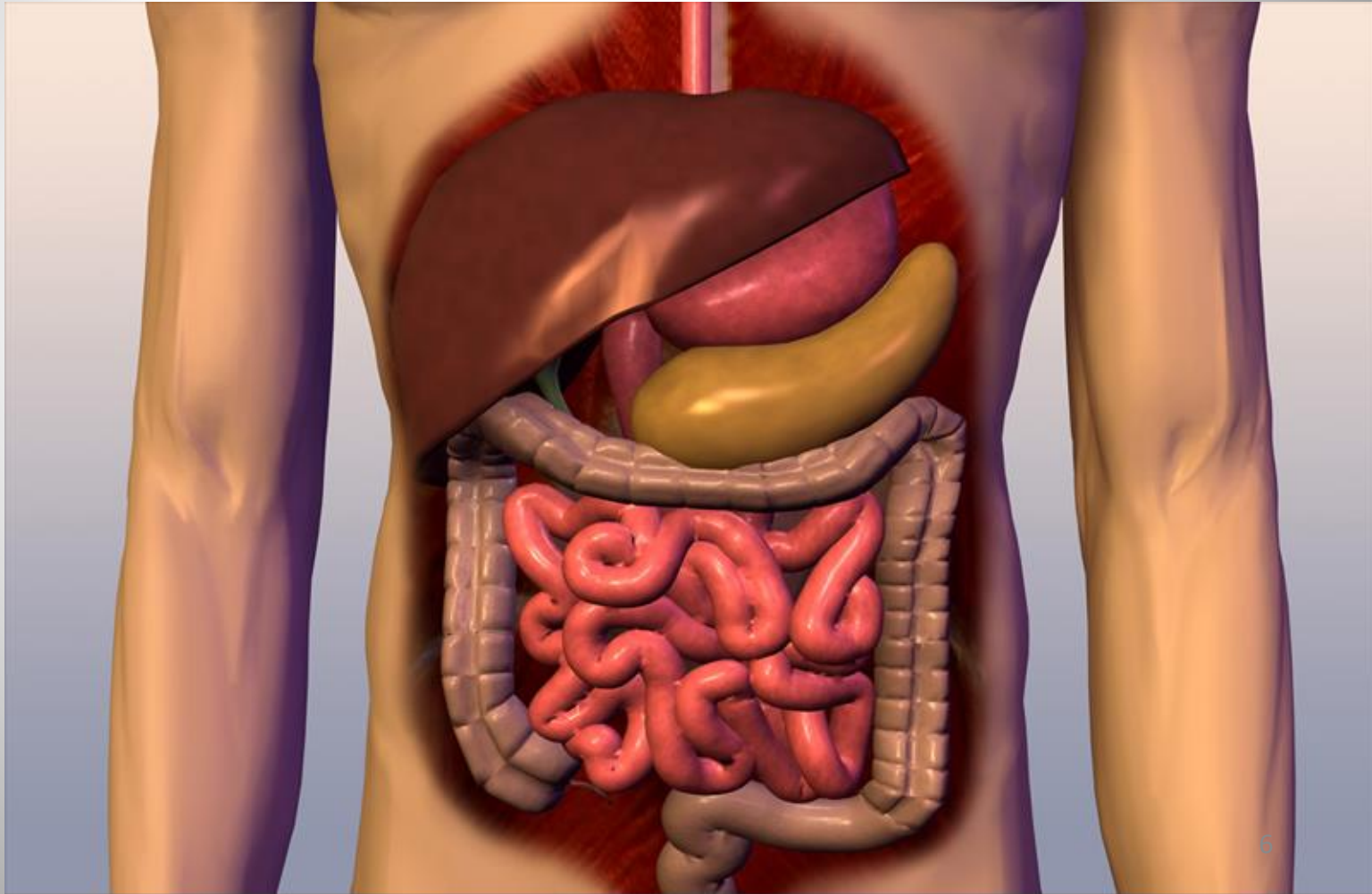
ORGAN

A group of tissues that work together to perform closely related functions.



Organ System

A group of organs that work together to perform a single function



There are 11 organ systems in the human body

1. Integumentary System
2. Skeletal System
3. Muscular System
4. Nervous System
5. Endocrine System
6. Cardiovascular System
7. Lymphatic & Immune System
8. Respiratory System
9. Digestive System
10. Urinary System
11. Reproductive System

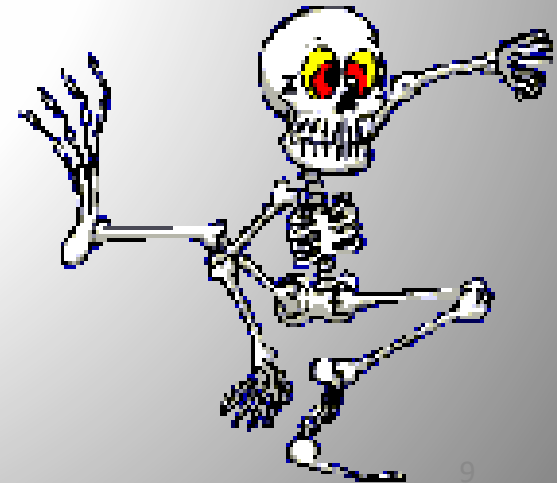
Skeletal System

Your skeleton has five major functions.

- **It provides shape and support**
- **Enables you to move**
- **Protects your internal organs**
- **Produces blood cells**
- **Stores certain materials until your body needs them**

Major Organs of the Skeletal System

- **Bones**
- **Tendons connect bones to muscles.**
- **Ligaments connect bone to bone.**
- **Cartilage cushions places where bones connect and offers flexibility.**



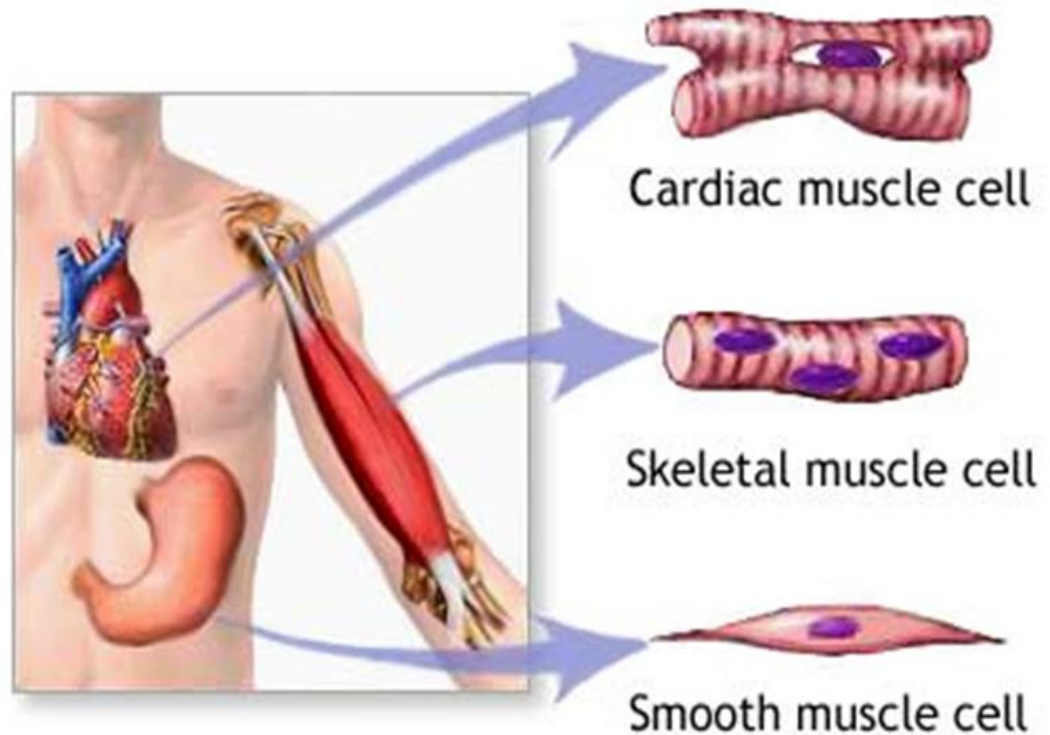
Muscular System

Your muscles control all movements of the body tissues, organs and bones.

Major Tissues of the Muscular System

Your body has three types of Muscle tissue.

- skeletal muscle
- smooth muscle
- cardiac muscle



Circulatory System aka Cardiovascular System

The main functions is to transport

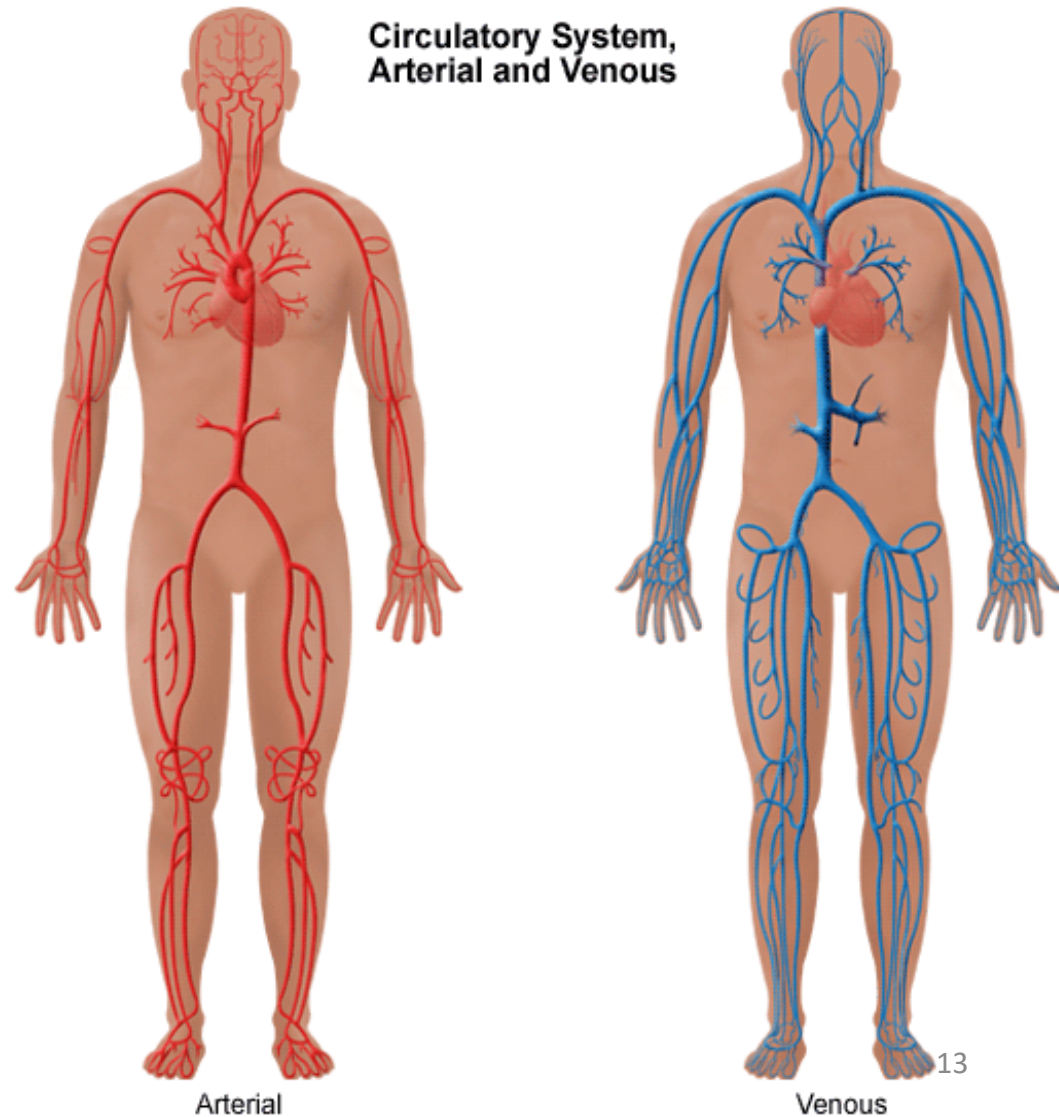
- **Oxygen**
- **Nutrients**
- **Waste**

throughout the body



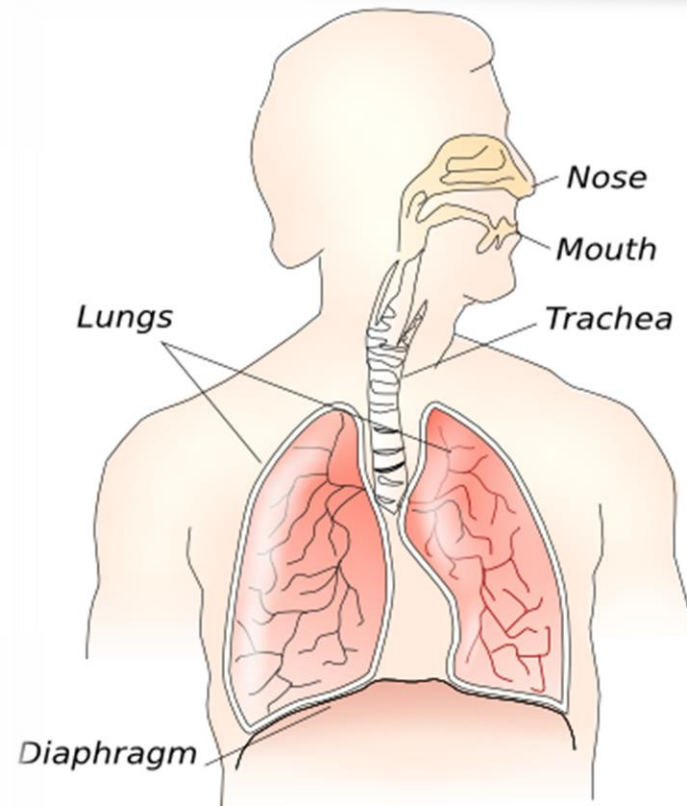
The main parts of the Circulatory System are:

- **Heart**
- **Blood Vessels**
- **Blood**



Respiratory System

Your respiratory system moves oxygen from the outside environment into your body. It also removes carbon dioxide and water from your body.



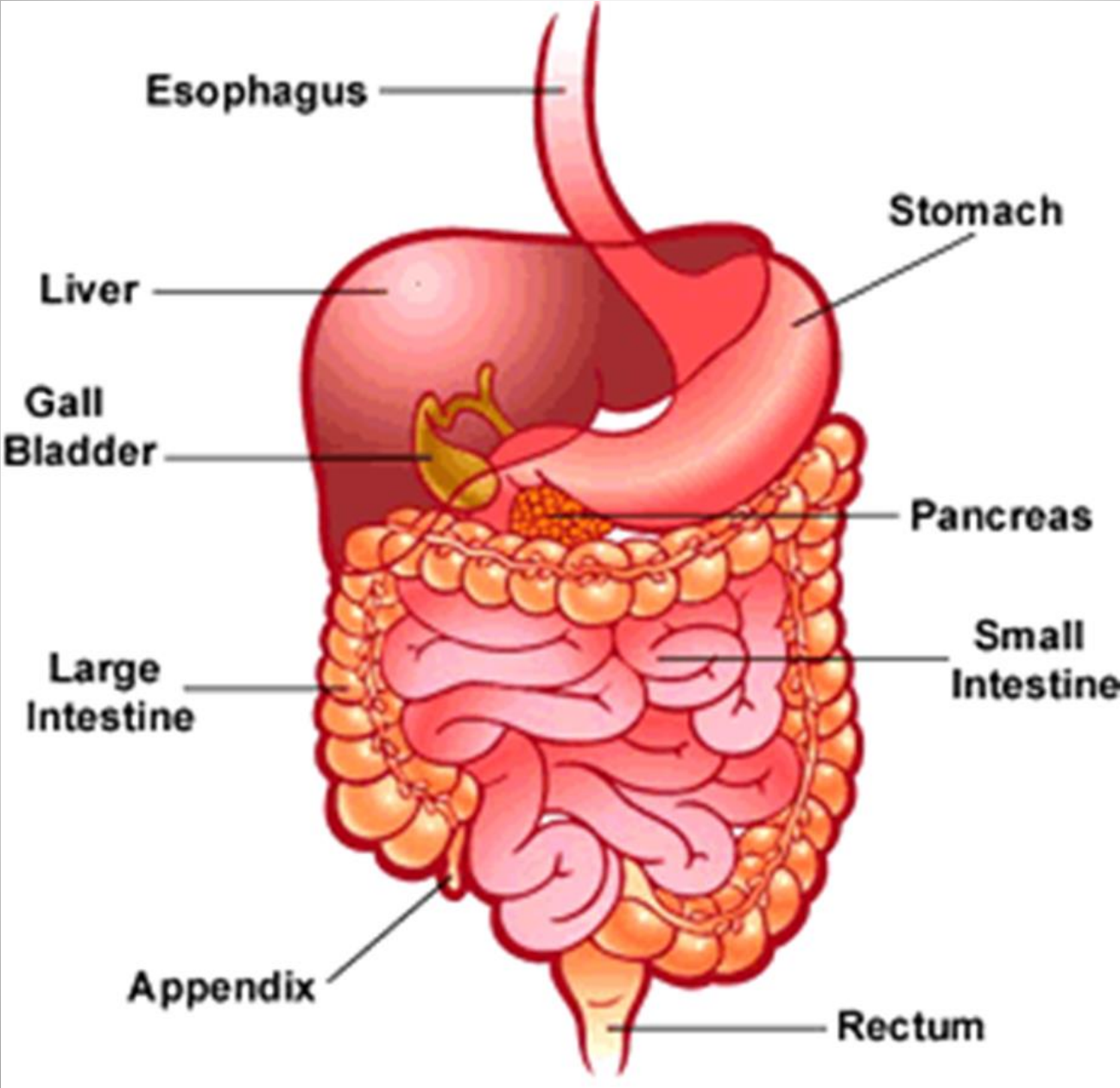
The Main Parts of the Respiratory system are:

- **Nose**
- **Mouth**
- **Trachea**
- **Lungs**
- **Diaphragm**

The Digestive System

- **The main functions of the digestive system**
- **Breaks down food into molecules the body can absorb.**
- **Passes these molecules into the blood to be carried throughout the body.**
- **Eliminates solid wastes from the body.**

The Main Parts of the Digestive System are:



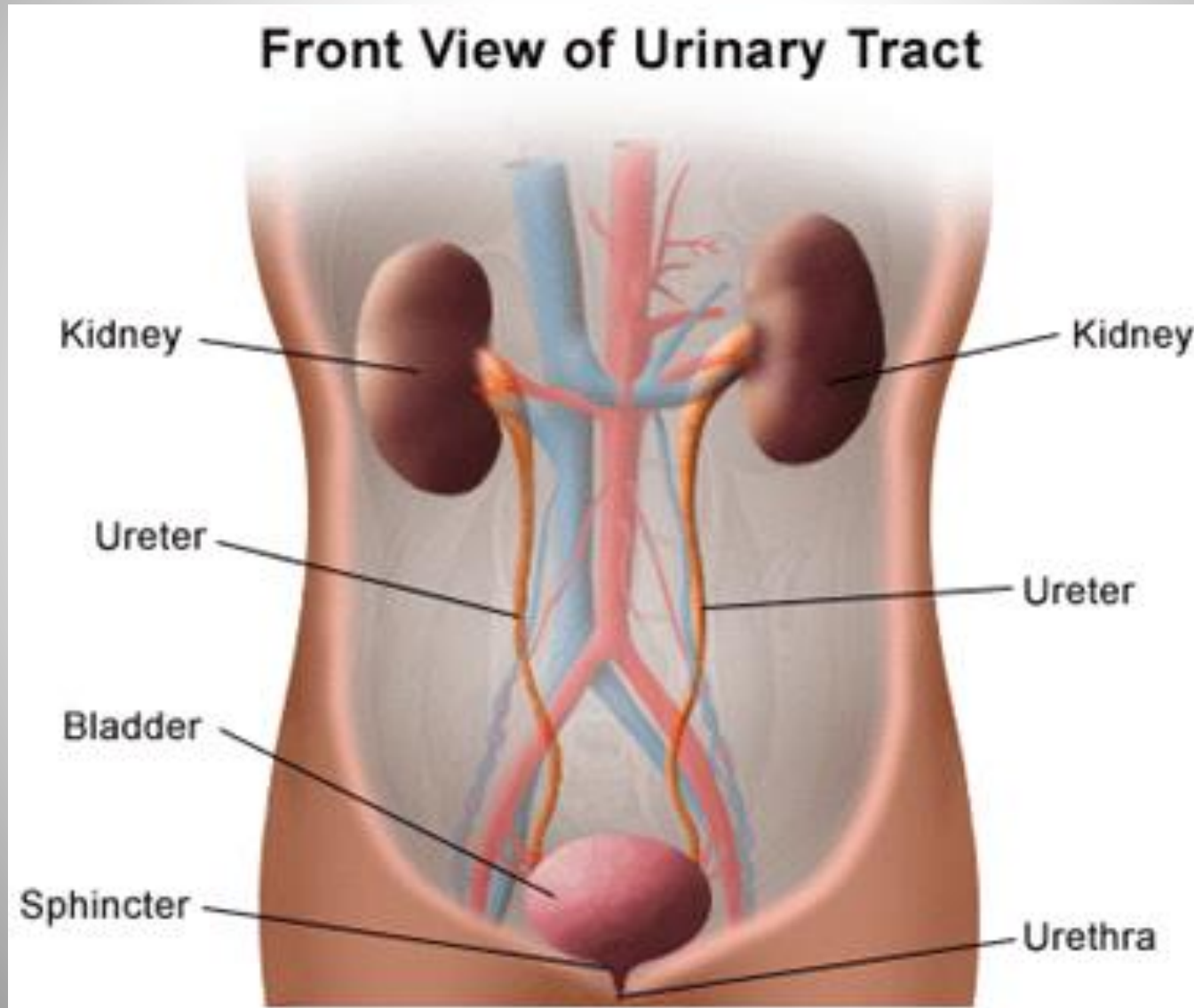
The Excretory System

Your excretory system collects wastes produced by cells and removes these wastes from your body. The removal process is known as excretion.

- Each kidney is about 4 ½ inches long
- Weight is 4 – 6 ounces
- The urine output varies from 1 to 2 liters per day.



The Main Parts of the Excretory System



Integumentary System (it's your skin)

Your Skin has many important functions:

- Covers body and prevents water loss.
- Protects body from injury and infection.
- Helps regulate body temperature.
- Eliminate wastes
- Gathers information about the environment
- Produce vitamin D

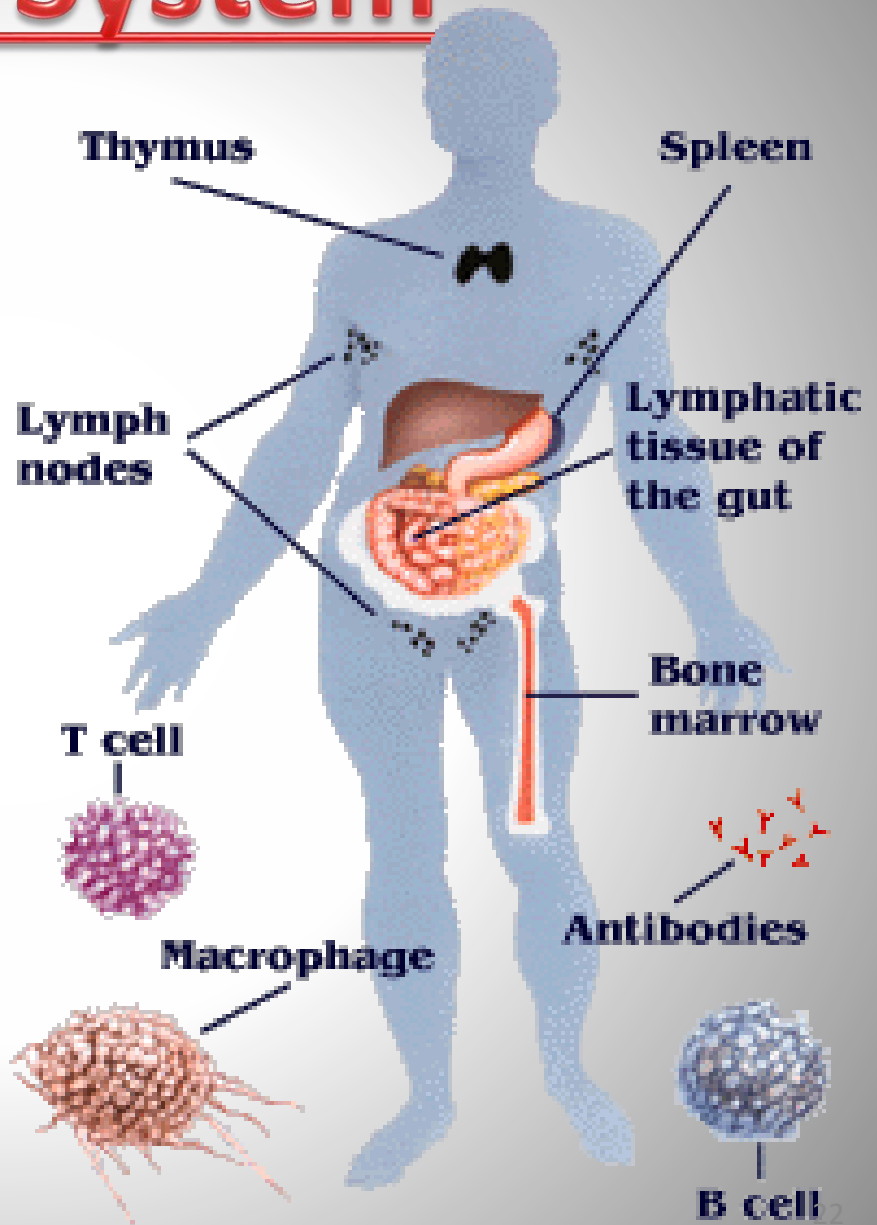
Major Parts of the Integumentary System

- **Skin**
- **Hair**
- **Nails**



Immune System

- It's role is to protect you from foreign invaders.
- Antibodies are special proteins that recognize and defeat invading pathogens.



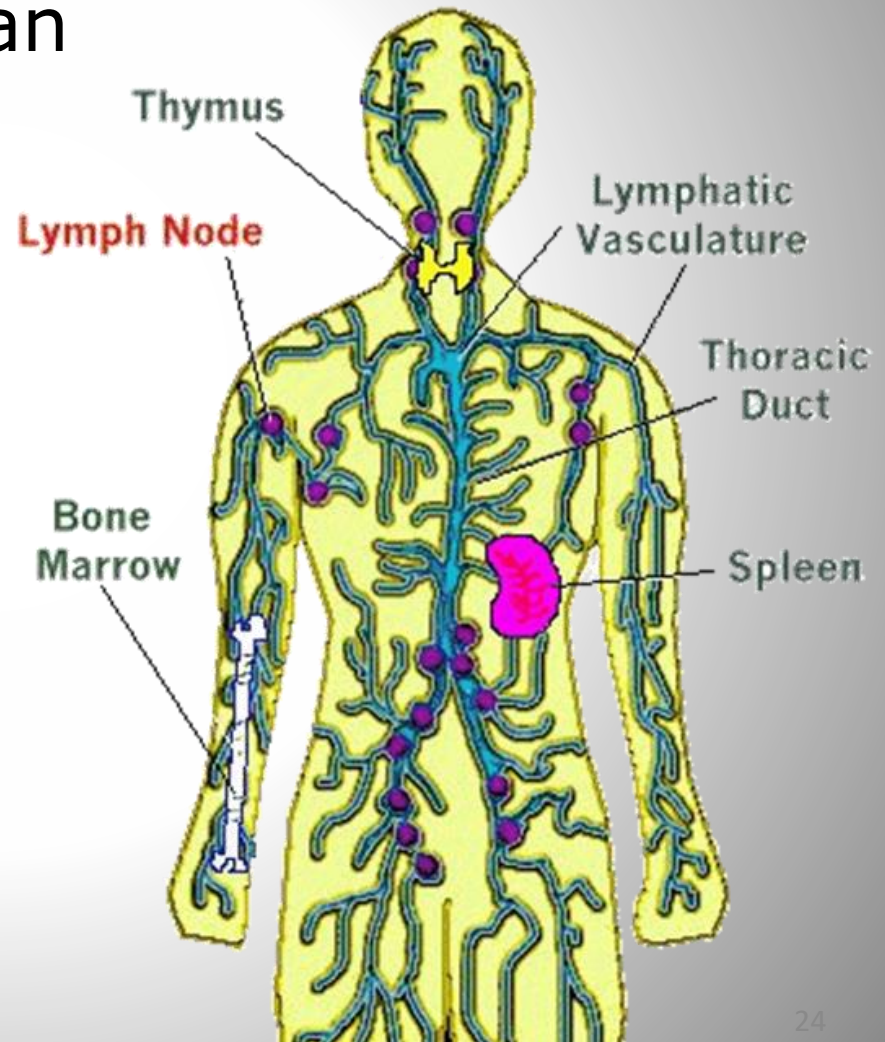
What are Antibodies?

- **Antibodies are special proteins that recognize and defeat invading pathogens.**

Lymphatic System

The lymphatic system is an extensive drainage network that helps keep bodily fluid levels in balance and defends the body against infections.

It filters out organisms that cause disease, produces certain white blood cells and generates antibodies



Endocrine System

1. The endocrine system is a collection of ductless glands that secrete special proteins called hormones.
2. The glands release the hormones into the bloodstream and they travel to the target cells or organs.
3. The main function of the endocrine system is to maintain a stable environment within the body or homeostasis.
4. The hormones also help the body to regulate:
 - ❖ Growth
 - ❖ Sexual development
 - ❖ Metabolism
 - ❖ Sugar, salt and fluid levels in the blood

Glands and Hormones

Gland	Hormone Produced	Effects
Hypothalamus	Antidiuretic hormone	Acts on the kidney to regulate fluid balance
Pituitary	9 different hormones	Growth and regulates other glands
Thyroid	Thyroxine	Metabolism
Pancreas	Insulin & glucagon	Blood sugar
Adrenal	Epinephrine	Heart rate & blood pressure
Testes	Testosterone	Sperm & male characteristics
Ovaries	Estrogen & progesterone	Eggs & female characteristics

Feedback Mechanisms

- Homeostasis is maintained by the endocrine system through the use of various feedback mechanisms.
- A feedback mechanism is in use when the biological reaction is actually being controlled by the end products of that reaction.
- Negative feedback loops are most common.
 - original stimulus reversed
 - most feedback systems in the body are negative
 - used for conditions that need frequent adjustment

Parts of a Negative Feedback Loop

Receptor

Structures that monitor a controlled condition and detect changes

Control center

determines next action

Effector

receives directions from the control center produces a response that restores the controlled condition



BODY TEMPERATURE

