

Grade 8 Science

Unit 4:

“Cells, Tissues, Organs & Systems”

Chapter 11: “Human body cells are organized as tissues, organs and systems.”

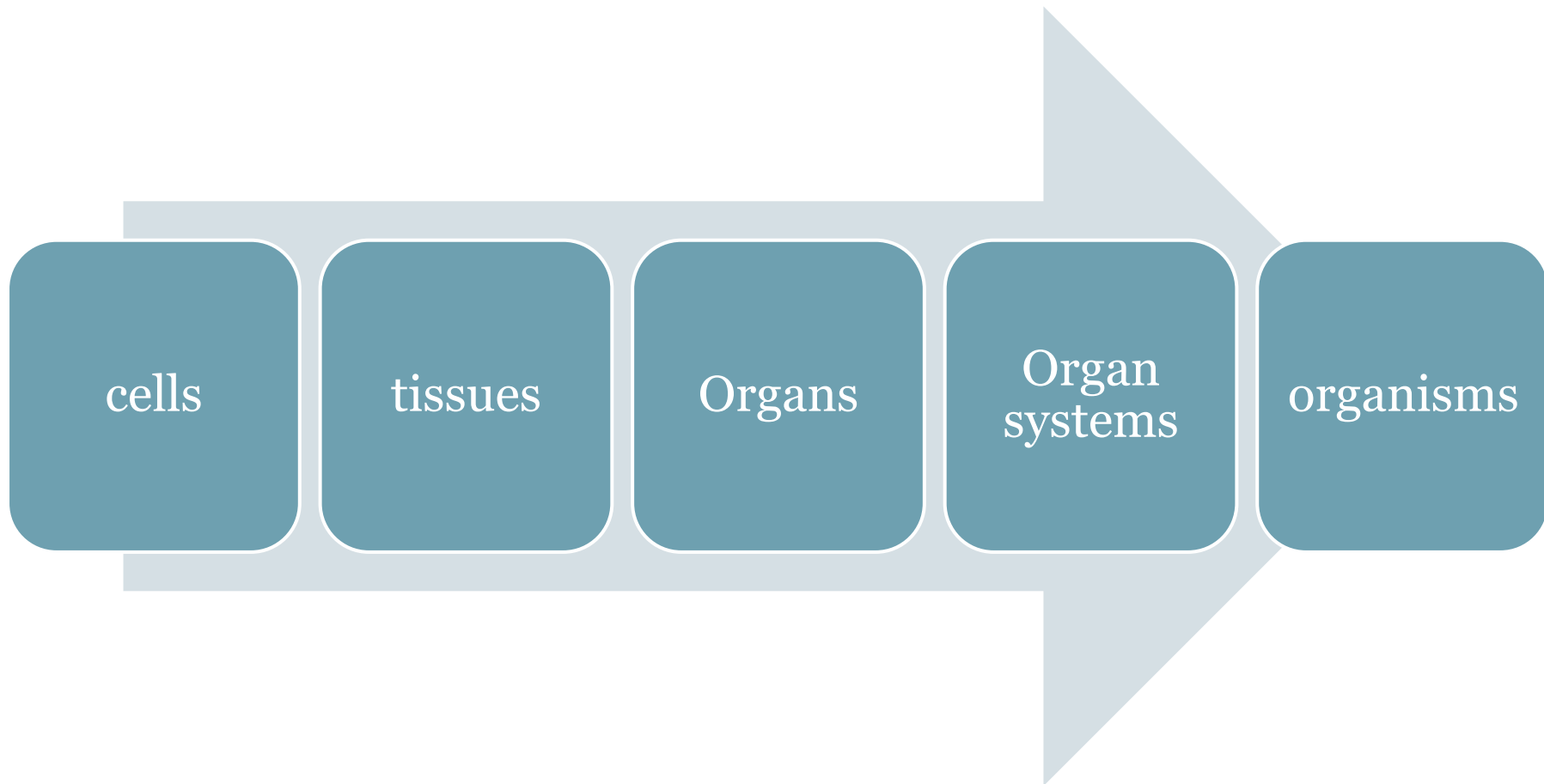
Systems...

All systems have the following characteristics:

- Made up of individual parts that work together as a whole

- Often connected to one or more systems
- If one part of a system is missing or damaged, the system will not function well or may not function at all.

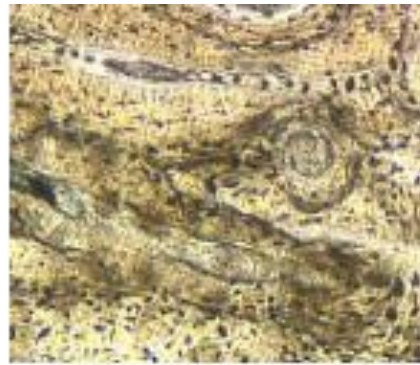
Levels of Organization



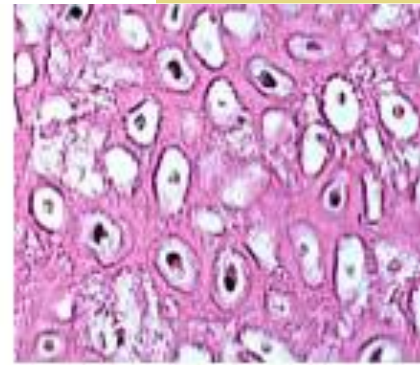
Tissues

- Groups of similar cells
- Found in all multicellular organisms
- Ex. Muscle tissue, nerve tissue, epithelial tissue, etc.

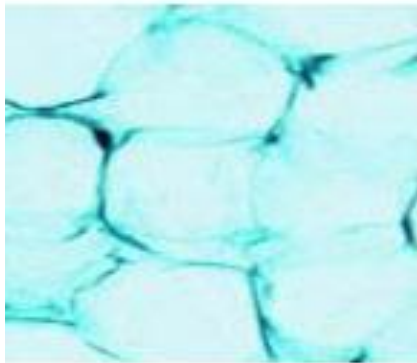
Histological images
of various tissues
in the body



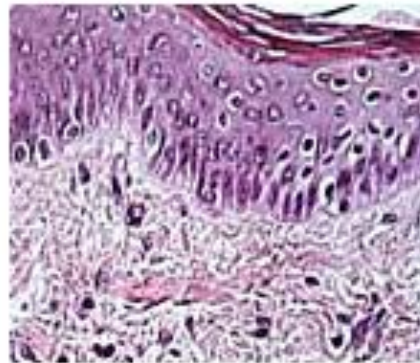
Bone



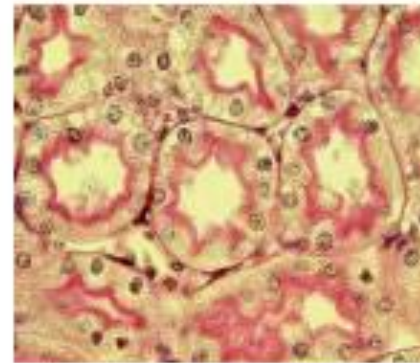
Cartilage



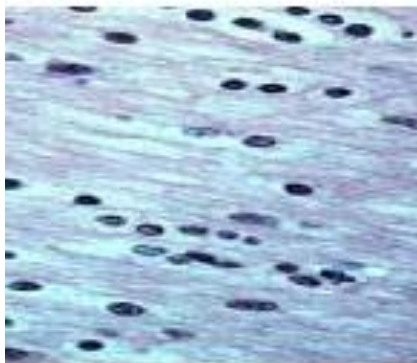
Adipose Tissue



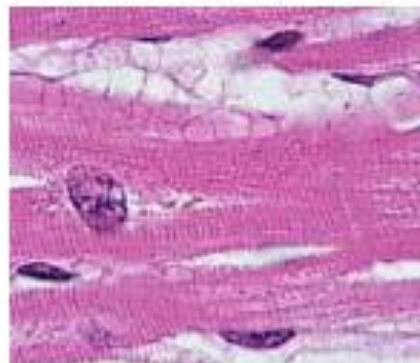
Skin



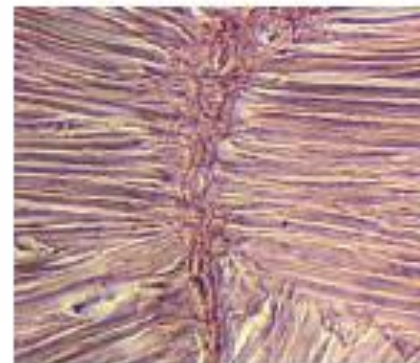
Intestinal Villi



Neural Tissue



Cardiac Muscle

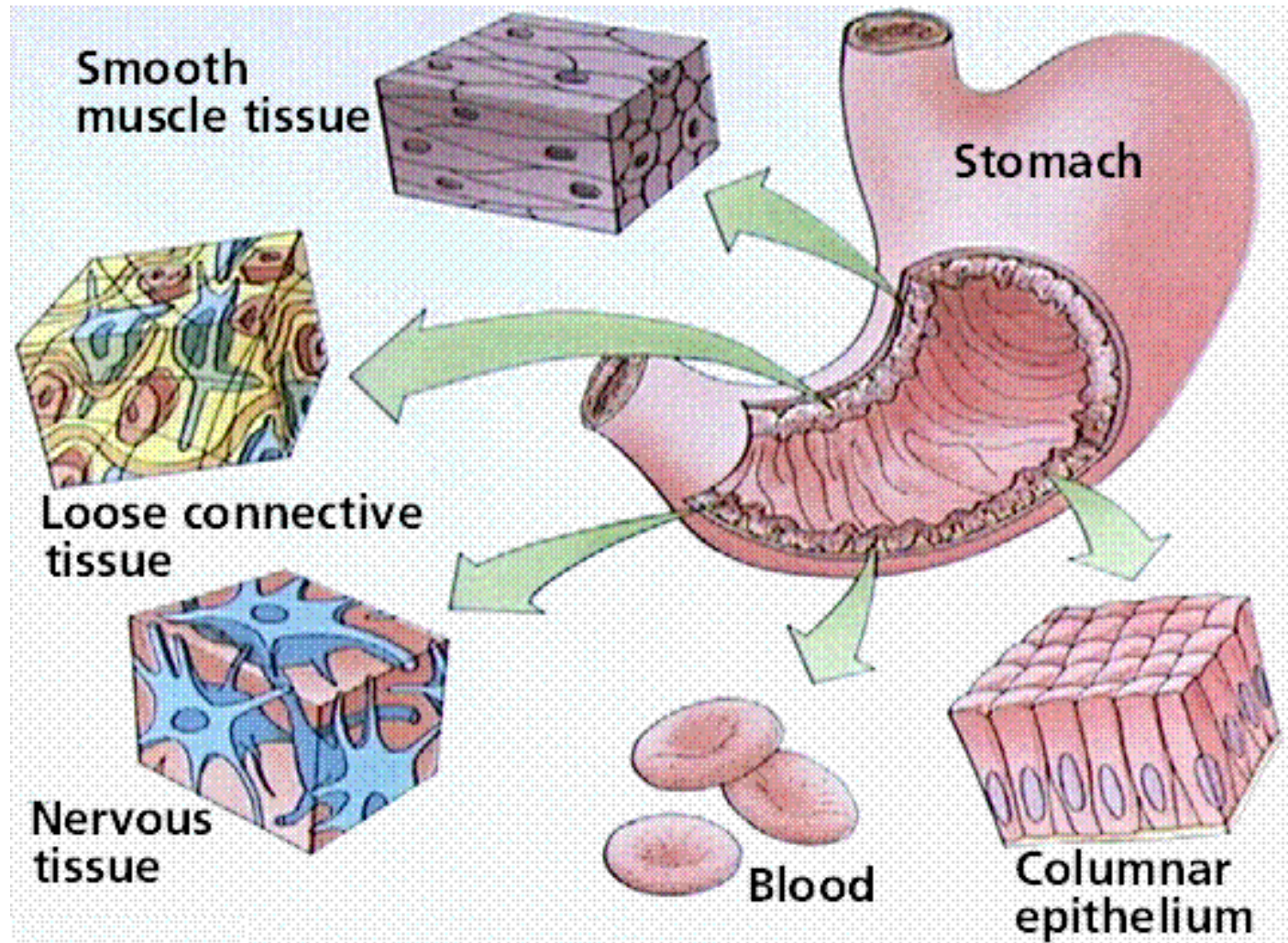


Skeletal Muscle

Organs

- Groups of tissues. Made up of two or more types of tissues.
- They are distinct structures that perform specific functions.

- Ex. Lungs, kidneys, heart, etc.



Organ Systems pg. 428-430

- A group of organs that perform activities that help the body as a whole.
- 6 examples of organ systems are...

1. Digestive System

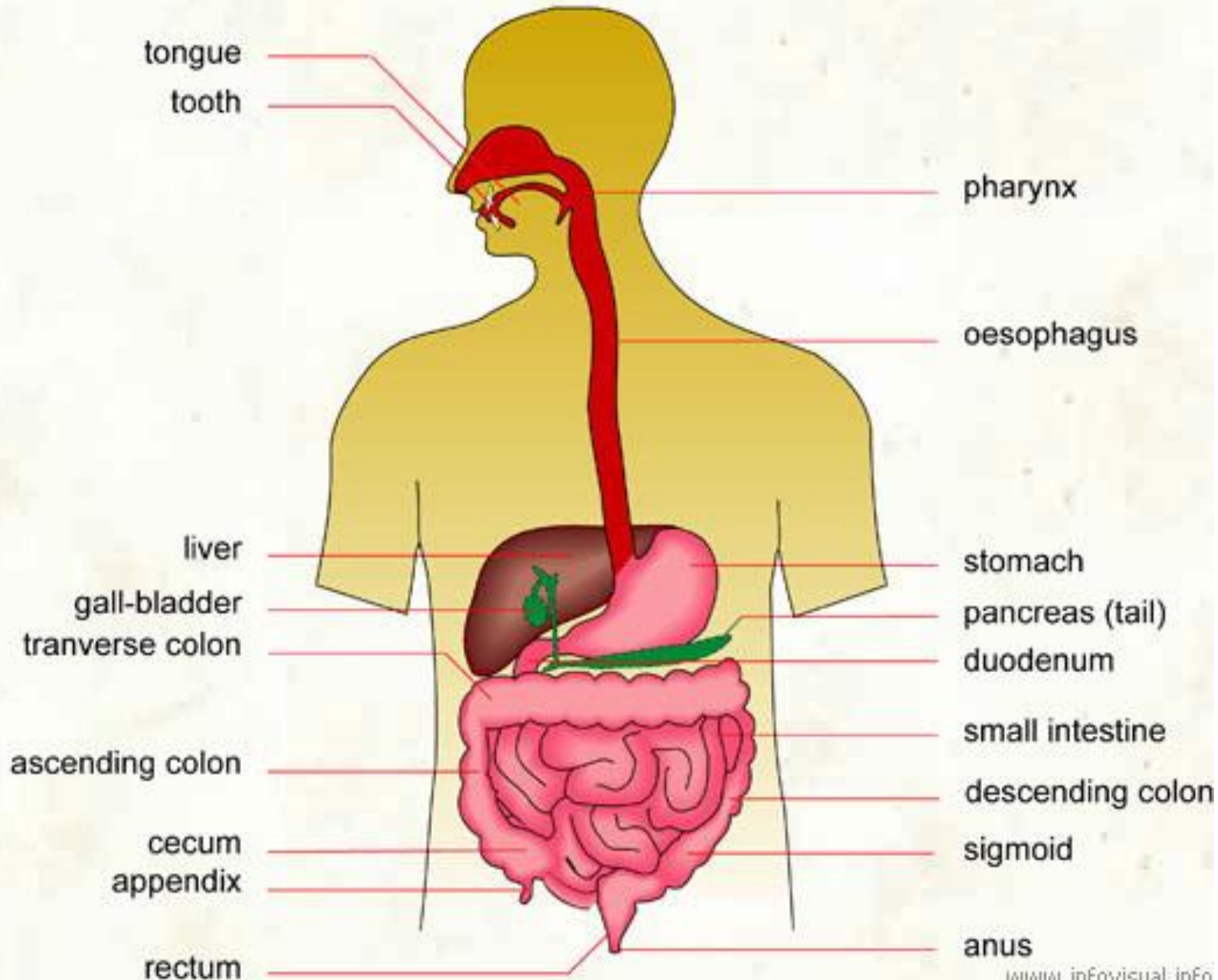
Consists of:

•Mouth	•Liver
•Esophagus	•Gall Bladder
•Stomach	•Pancreas
•Small Intestine	•Large Intestine

Function:

- To take in and break down food, absorb nutrients, and eliminate solid waste.

DIGESTIVE SYSTEM



2. Circulatory System

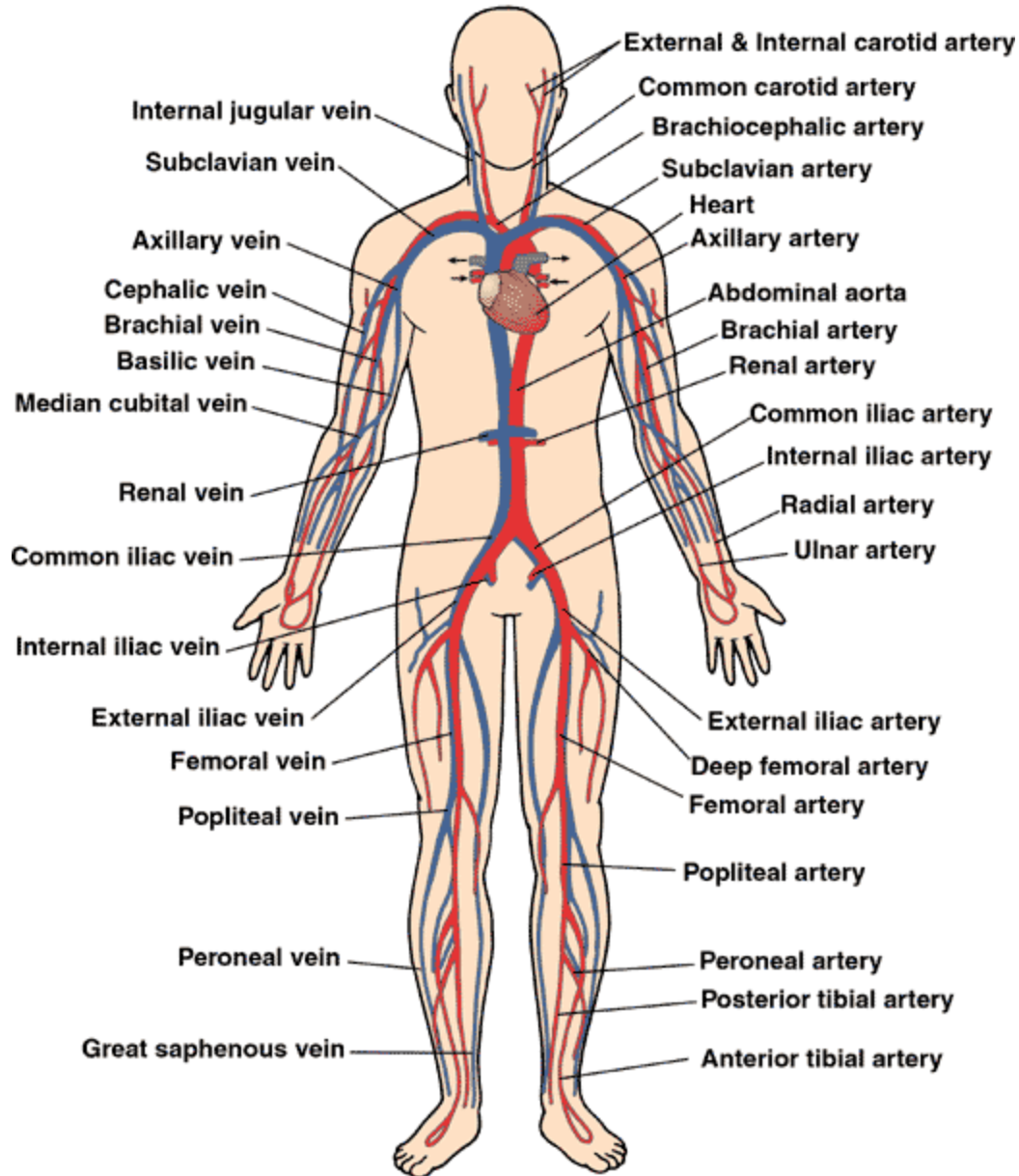
Consists of:

- Heart
- Arteries,
- Veins
- Capillaries

Function:

- To transport blood, nutrients (chemicals needed for survival), gases and wastes.

Circulatory System



3. Nervous System

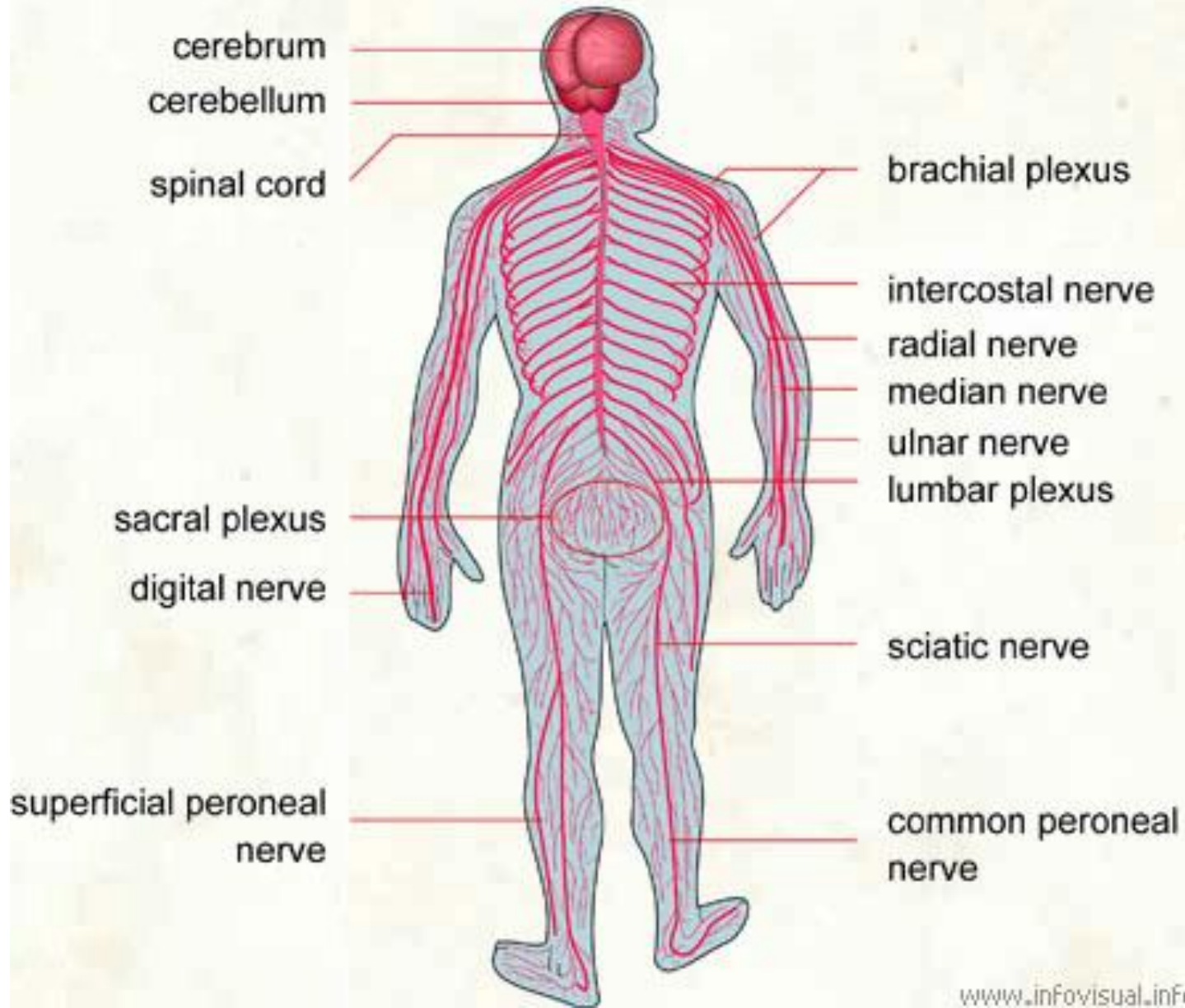
Consists of:

- Brain
- Spinal cord
- Nerves
- Sense organs

Function:

- To detect changes in the environment and to signal these changes to the body which then carries out a response.

NERVOUS SYSTEM



4. Respiratory System

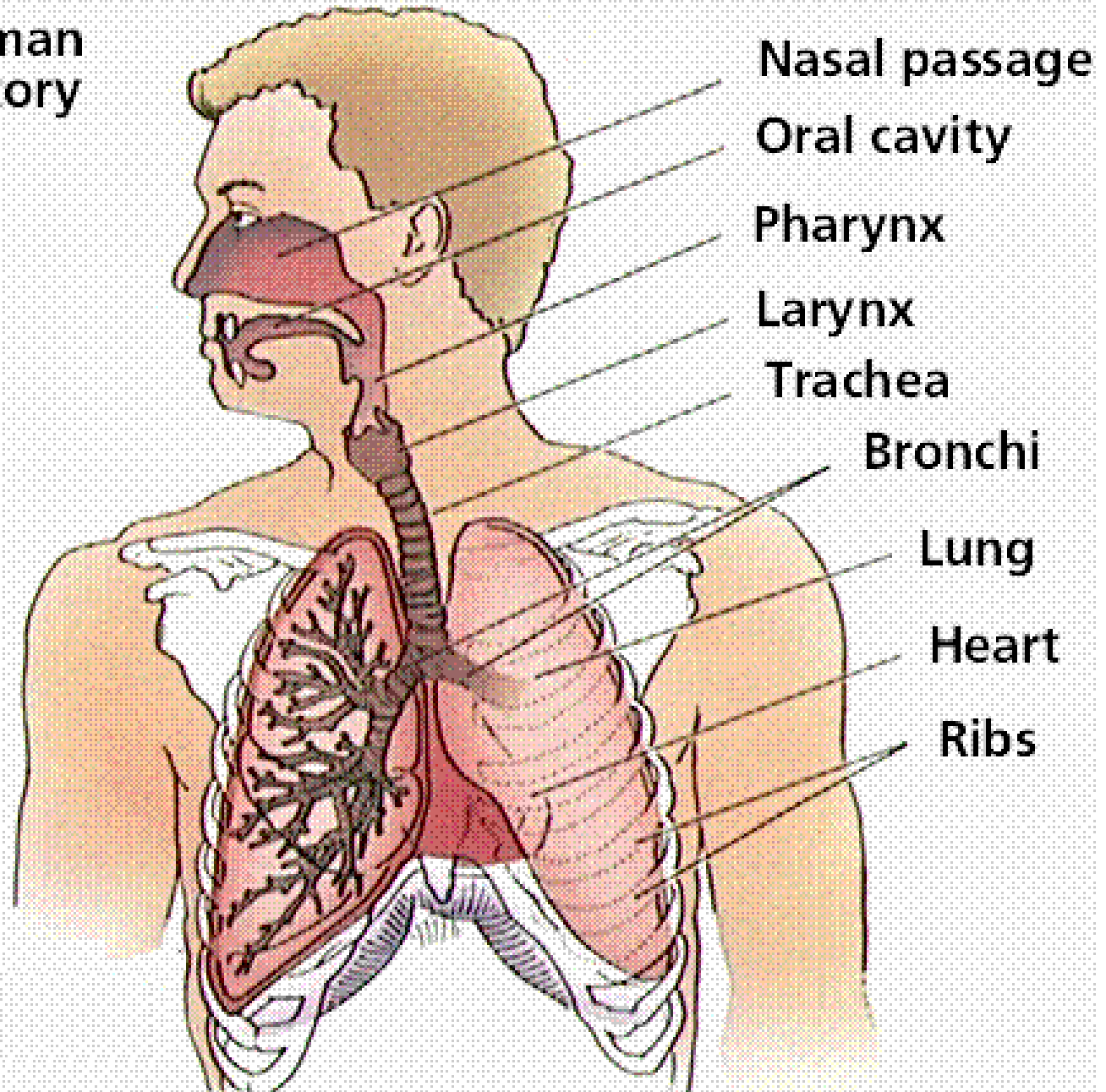
Consists of:

- Nasal cavity
- Trachea
- Lungs

Function:

- To control breathing, and exchange gases in lungs and tissues.

The Human Respiratory System



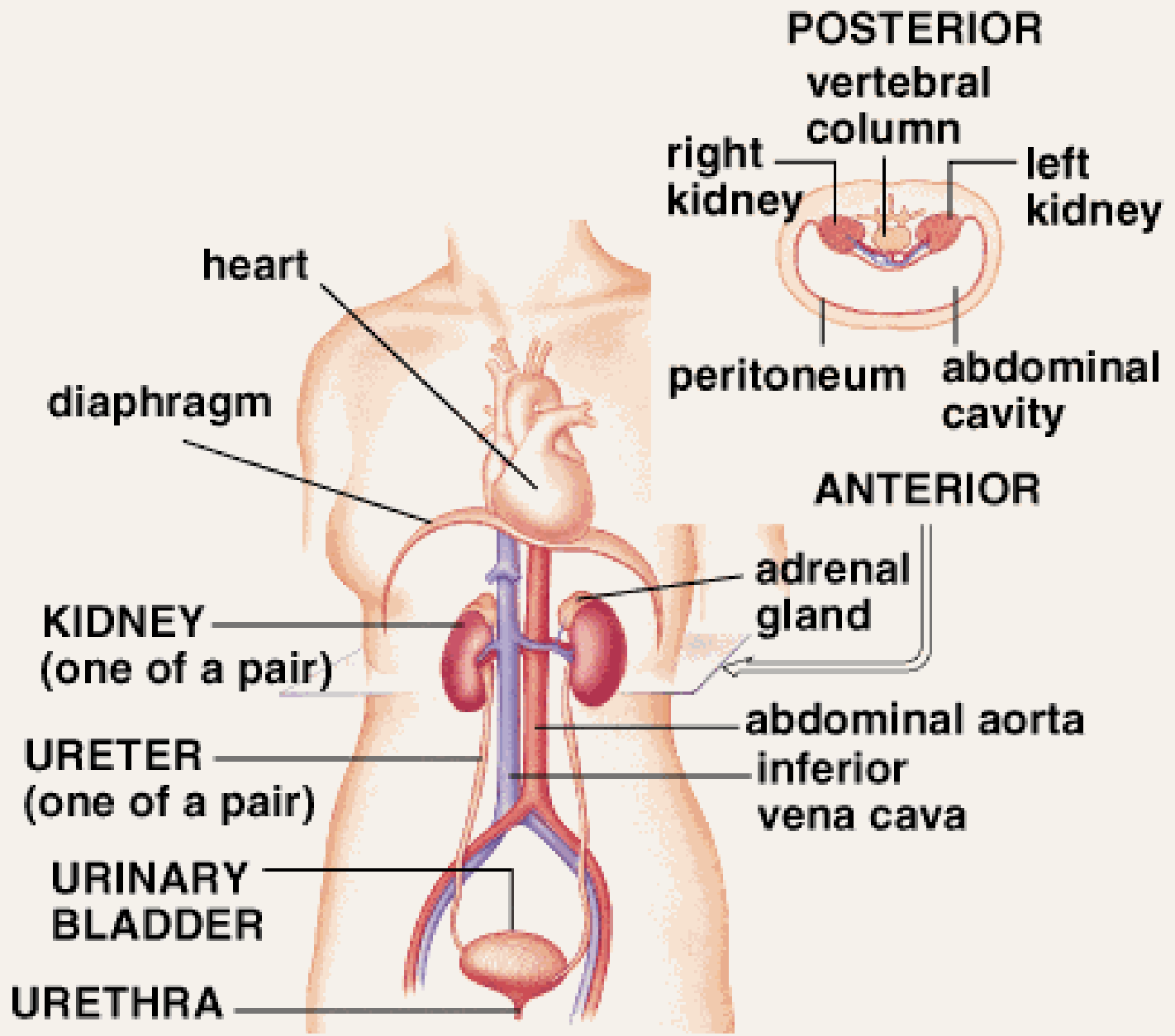
5. Excretory System

Consists of:

- Lungs
- Kidneys
- Urinary bladder

Function:

- To remove liquid and gas wastes from the body



6. Muscular System

Consists of:

- Muscle tissue connected to bones throughout the body.

Function:

- To work with the bones to move body parts

Shoulder muscles raise and lower the arms.

Neck muscles hold the head up and move it in all directions.

Triceps straighten the arm.

Biceps bend the arm.

Abdominal muscles move the torso and help with breathing.

Thigh muscles move the lower leg.

Calf muscles pull the heel up and point the toes.

Shin muscles help move the foot up and down and side to side.

