Anatomy and Physiology

By
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What Is Anatomy and Physiology?

- **Anatomy** is the study of the structure and relationship between body parts.

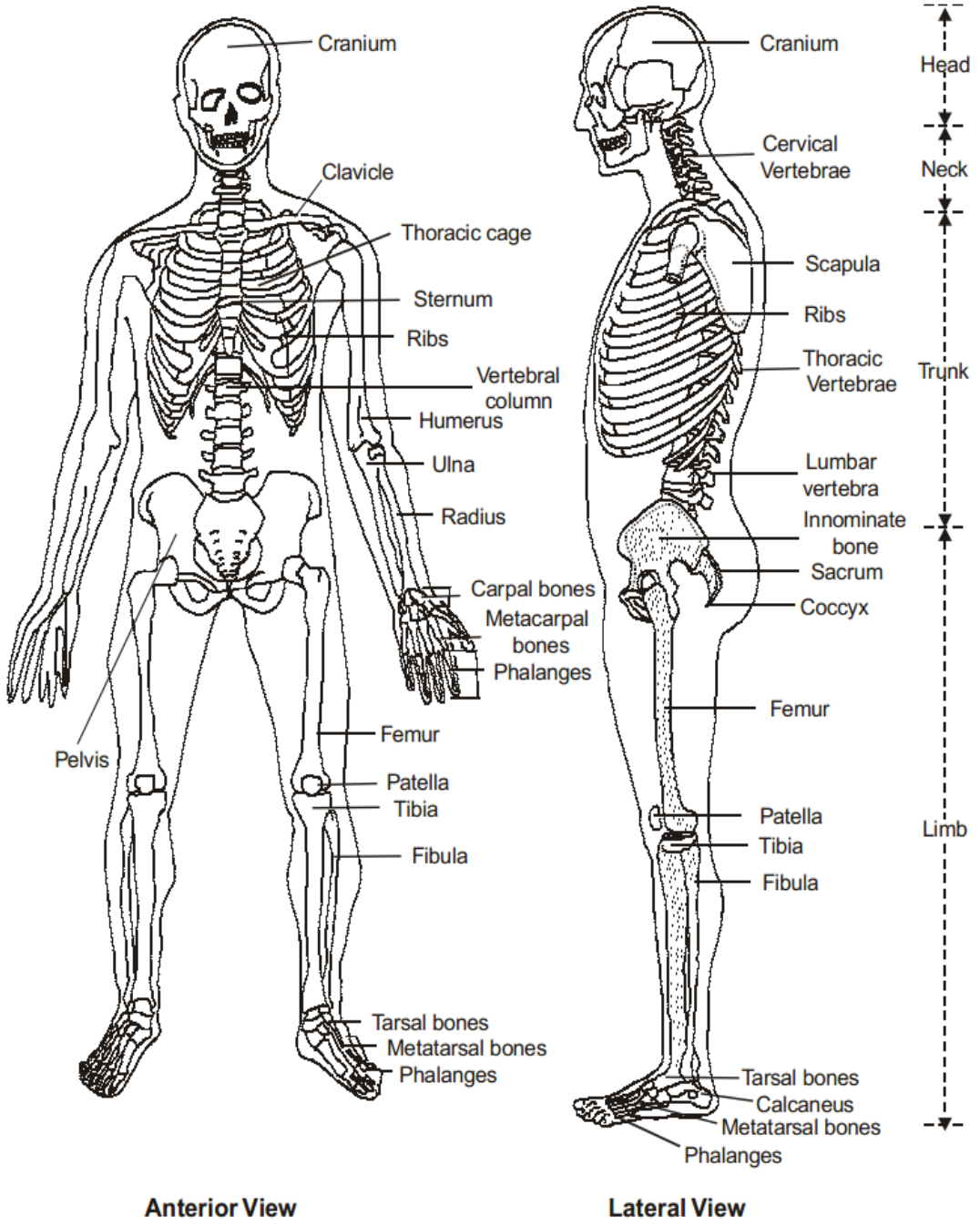
- **Physiology** is the study of the function of body parts and the body as a whole.

SYSTEMS INSIDE THE BODY

- Skeletal system
- Muscular system
- Cardiovascular system
- Digestive system
- Endocrine system
- Nervous system
- Respiratory system
- Immune/ Lymphatic system
- Urinary system
- Male and Female Reproductive system
- Integumentary system

Skeletal syster

- The axial skeleton runs along the body's midline axis and is made up of 80 bones in the following regions:
  - Skull
  - Hyoid
  - Auditory ossicles
  - Ribs
  - Sternum
  - Vertebral column
- The appendicular skeleton is made up of 126 bones in the following regions:
  - Upper limbs
  - Lower limbs
  - Pelvic girdle
  - Pectoral (shoulder) girdle

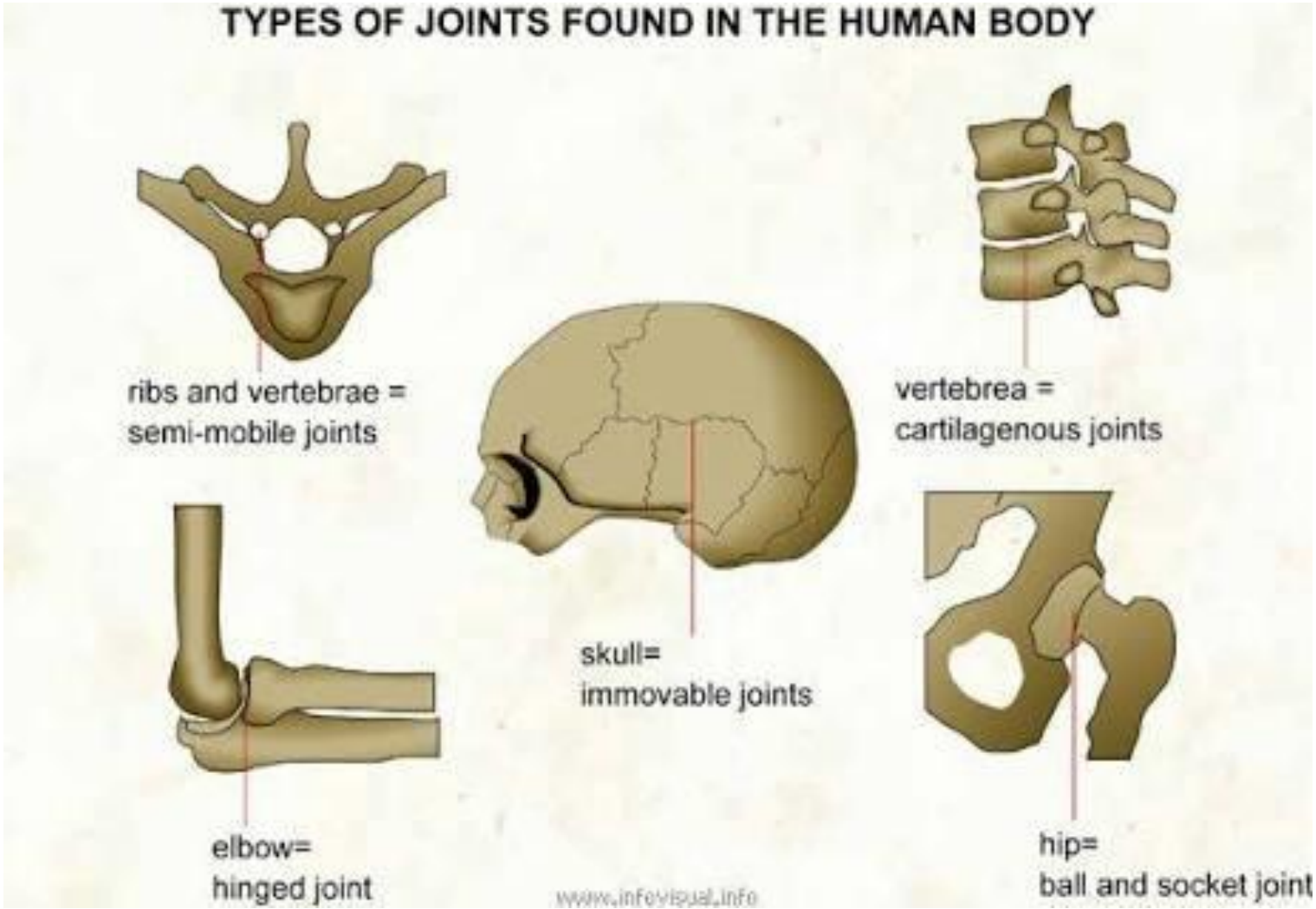


Joints

Fibrous Joint -non movable. eg: skull

Cartilaginous Joint –chest bone, vertebrae

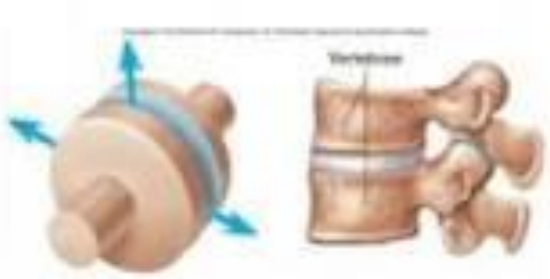
Synovial Joint – elbow,knee,hip,shoulder,finger



TYPES OF JOINTS

Plane / Gliding

Saddle

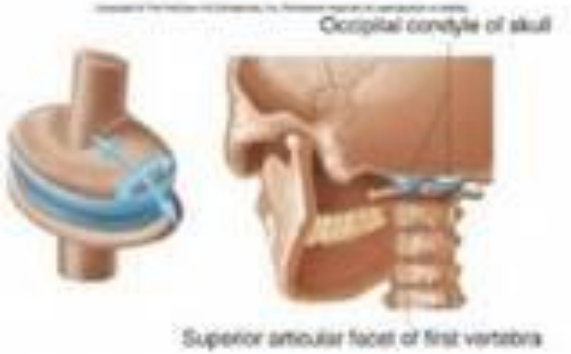


Hinge

Pivot

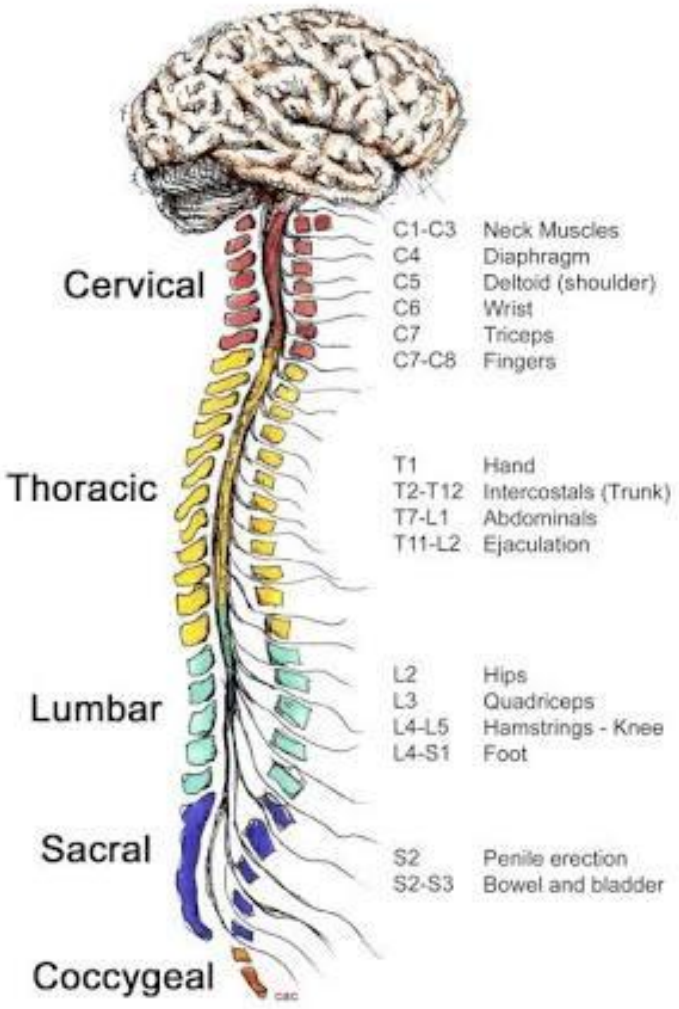
Ball-and-Socket

Ellipsoid



Vertebral column

- Vertebral column
- Total vertebrae 33
- Cervical 7
- Thoracic 12
- Lumber 5
- Sacral 5
- Coccygeial 4



Muscular system

- There are three types of muscle tissue:

- Visceral

  Stomach, intestines, blood vessels

- Cardiac

  Heart

- Skeletal

  Muscles attached to two bones across a joint

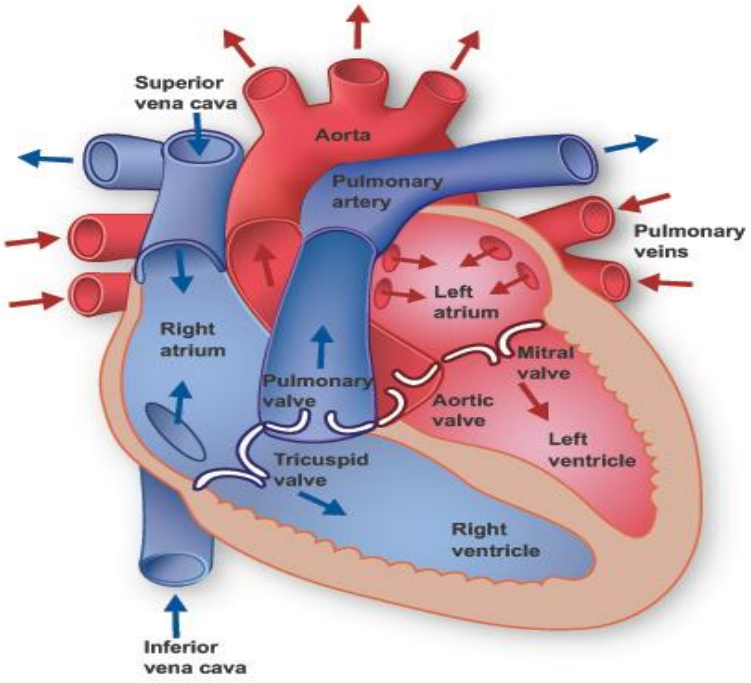
Cardiovascular system

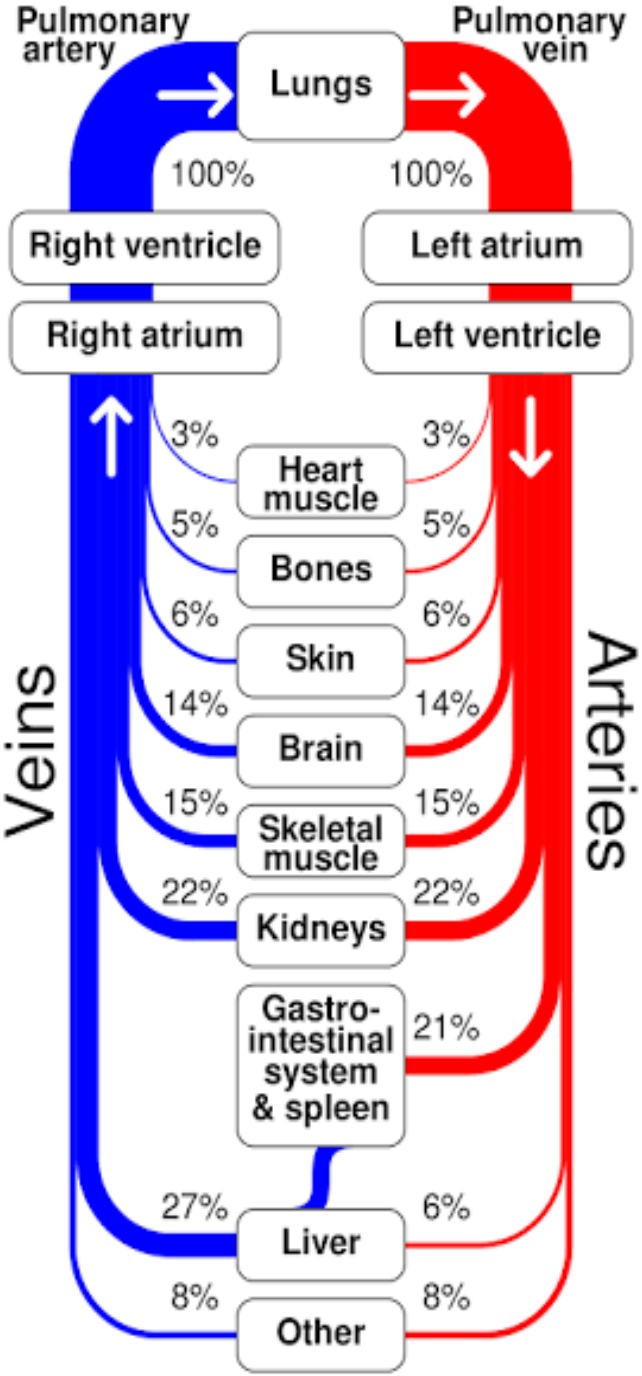
Anatomy

- The Heart
- Circulatory Loops
- Blood Vessels
- Coronary Circulation
- Hepatic Portal Circulation
- Blood

Functions

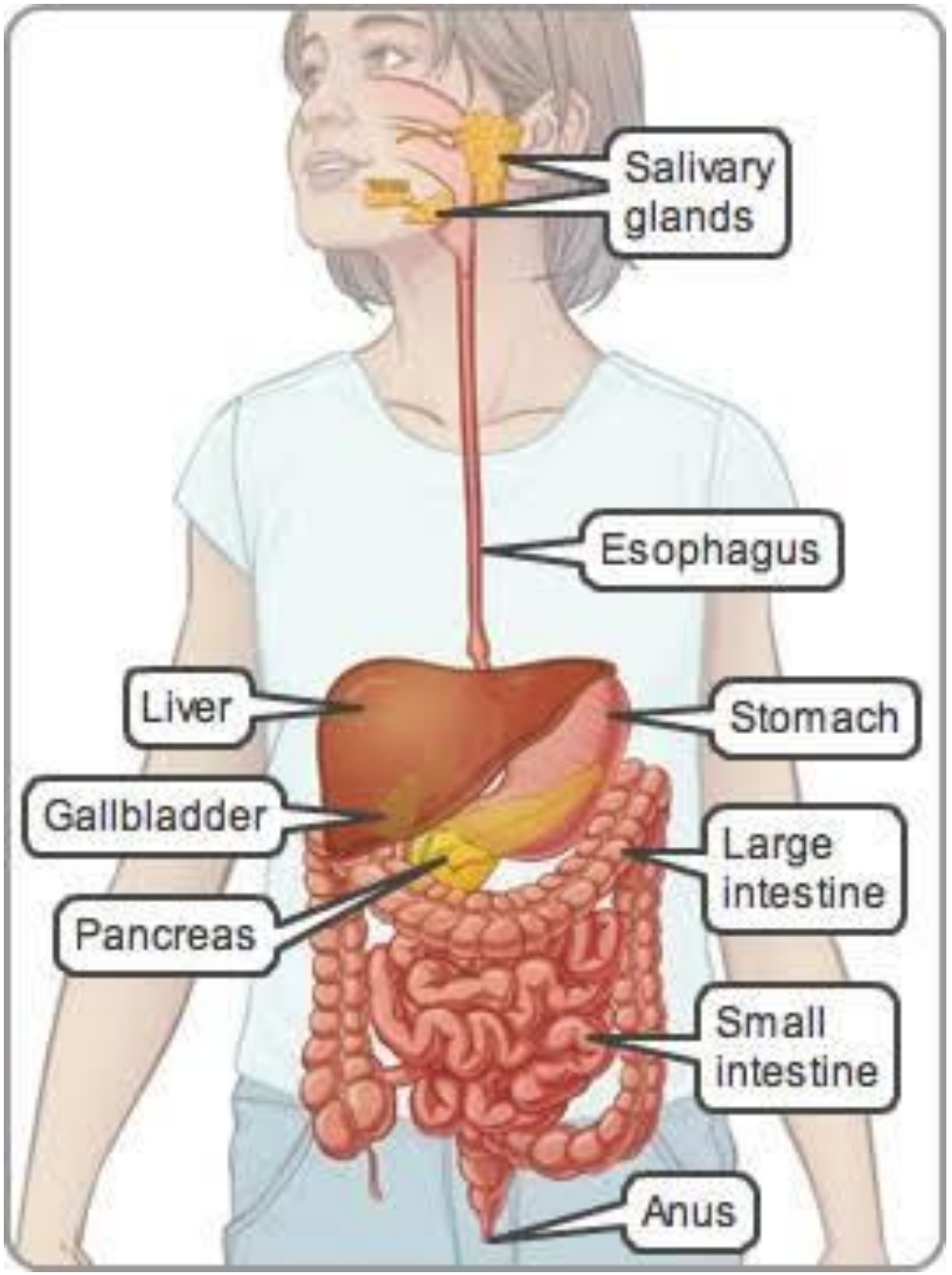
Transportation
Protection
Regulation





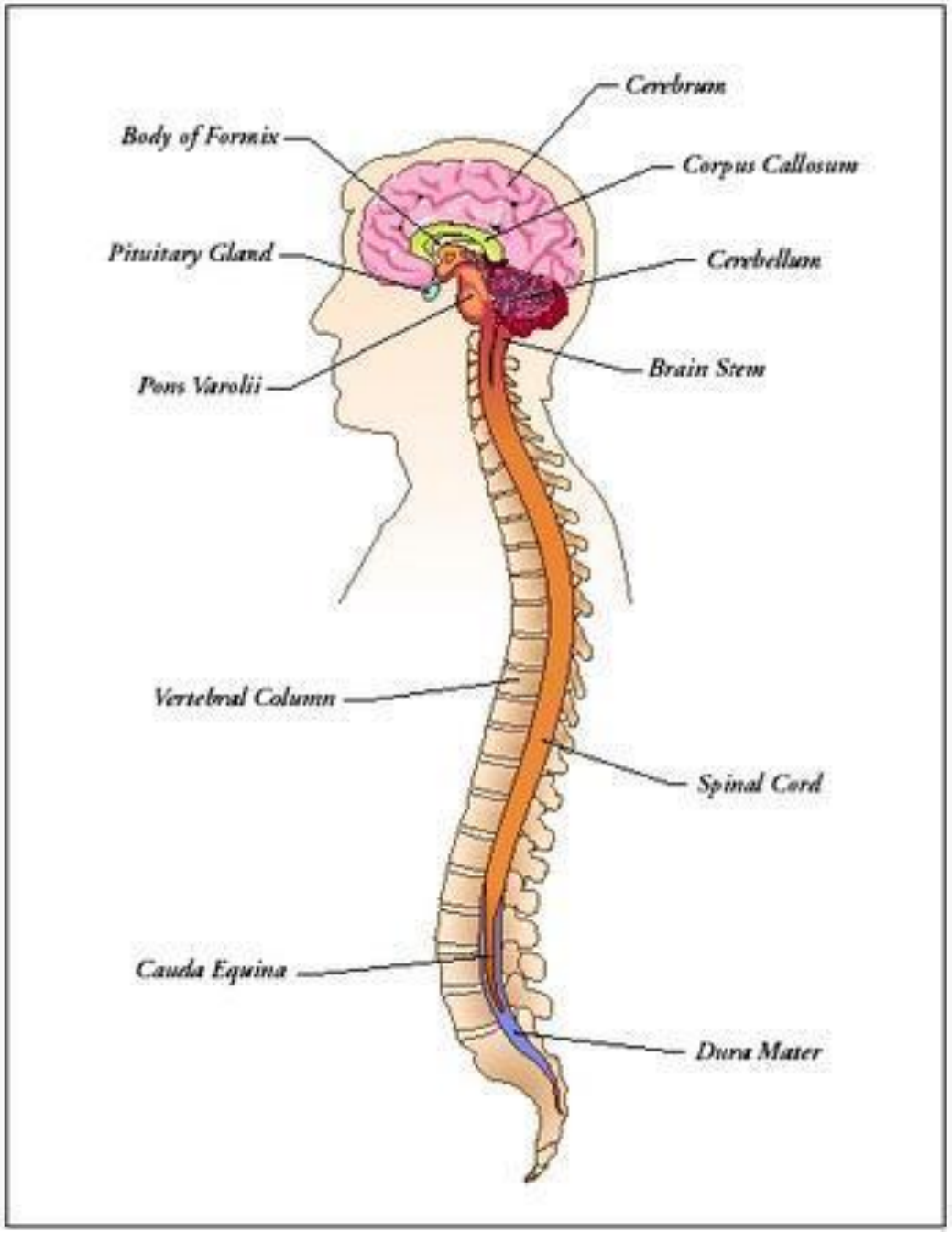
Digestive system

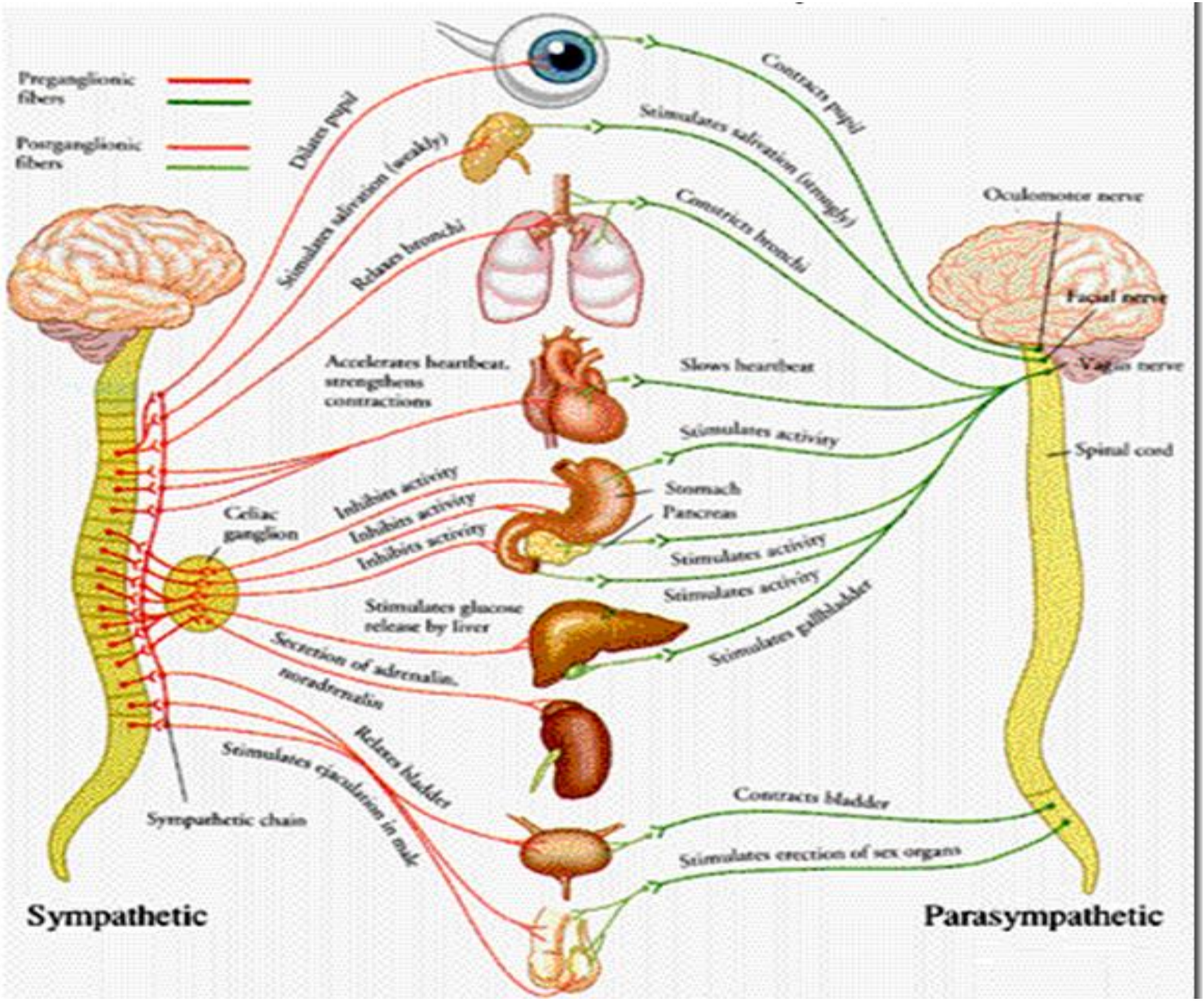
- Anatomy
  - Mouth-Pharynx – Esophagus – Stomach - Small Intestine - Liver and Gallbladder – Pancreas - Large Intestine - Rectum
- Physiology
  - Ingestion
  - Secretion
  - Mixing and movement
  - Digestion
  - Absorption
  - Excretion



Nervous system

- Anatomy
  - Nervous tissue
  - Brain
  - Spinal cord
  - Nerves
  - Meninges
  - Cerebrospinal fluid
  - Sense organs
- Physiology
  - Sensory
  - Integration
  - motor




Preganglionic fibers
Postganglionic fibers
Dilates pupil
Stimulates salivation (weakly)
Relaxes bronchi
Accelerates heartbeat, strengthens contractions
Inhibits activity
Inhibits activity
Inhibits activity
Celiac ganglion
Stimulates glucose release by liver
Secretion of adrenalin, noradrenalin
Relaxes bladder
Stimulates ejaculation in male
Sympathetic chain
Contracts pupil
Stimulates salivation (strongly)
Constricts bronchi
Slows heartbeat
Stimulates activity
Stomach
Pancreas
Stimulates activity
Stimulates activity
Stimulates gallbladder
Contracts bladder
Stimulates erection of sex organs
Oculomotor nerve
Facial nerve
Vagus nerve
Spinal cord
Sympathetic
Parasympathetic

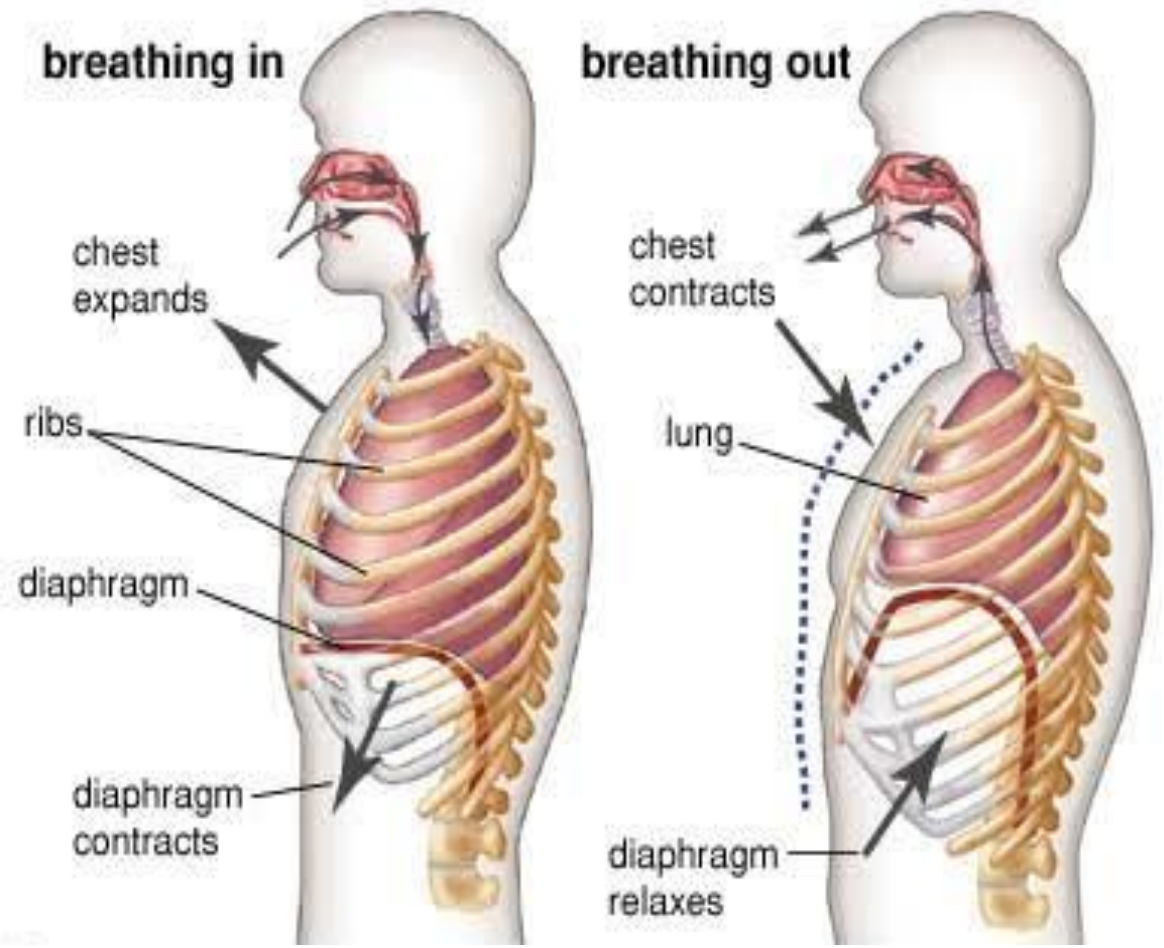
Respiratory system

❑Anatomy

- Nose and Nasal Cavity, Mouth, Pharynx, Larynx, Trachea, Bronchi and Bronchioles, Lungs, Muscles of Respiration

❑Physiology

- Pulmonary Ventilation, External respiration, Internal respiration, transportation of gases, Homeostatic Control of Respiration



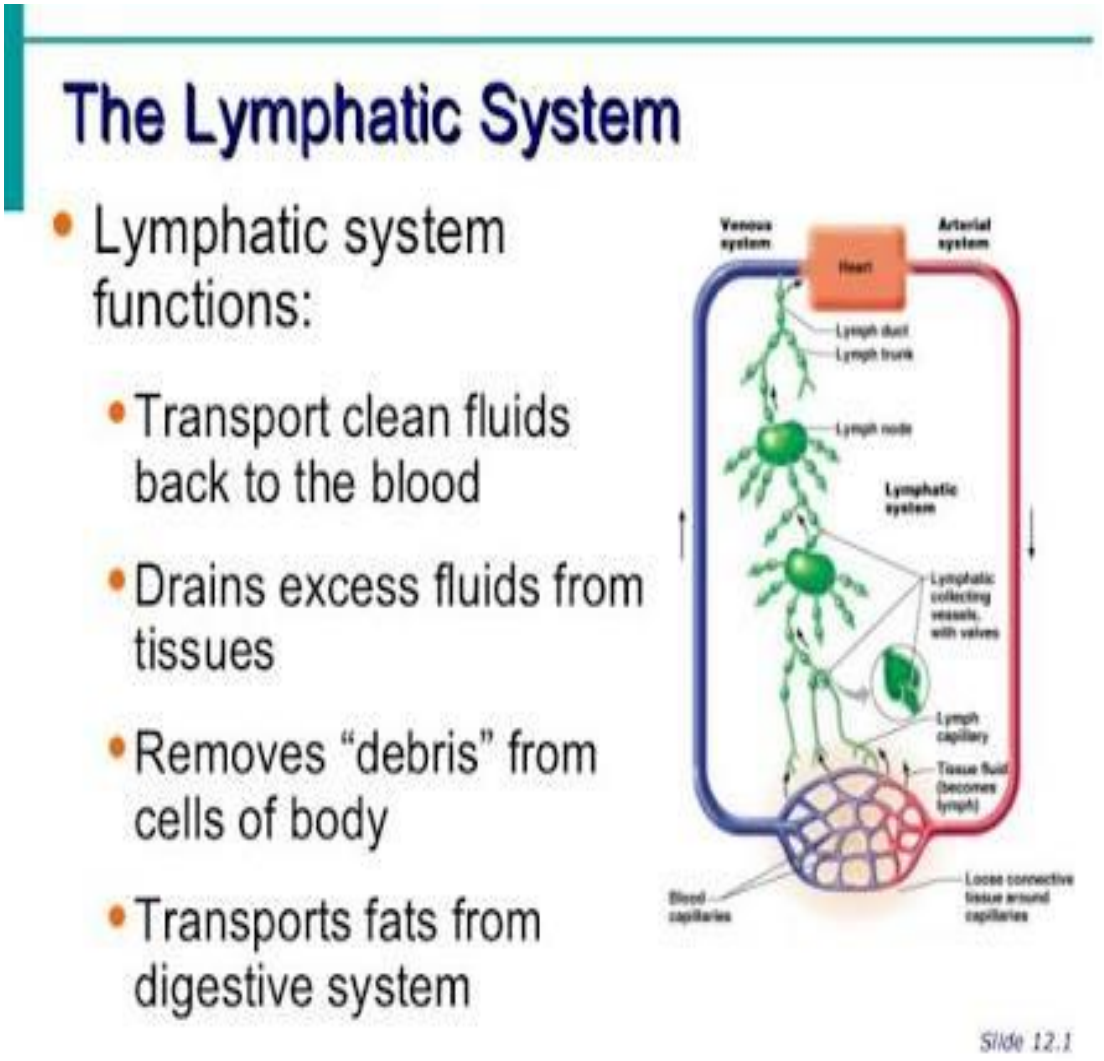
Immune / Lymphatic system

❑Anatomy

- Spleen ,Thymus , Lymphatic Vessels, Lymph Nodes, Lymphatic Ducts, Tonsils

❑Physiology

Defends against infection, Return tissue fluids to the blood stream



Urinary system

❑Anatomy

- Kidneys
- Ureter
- Urinary bladder
- Urethra

❑Physiology

- Maintenance of Homeostasis
- Filtration
- Storage and Excretion of Wastes
- Production of Hormones