

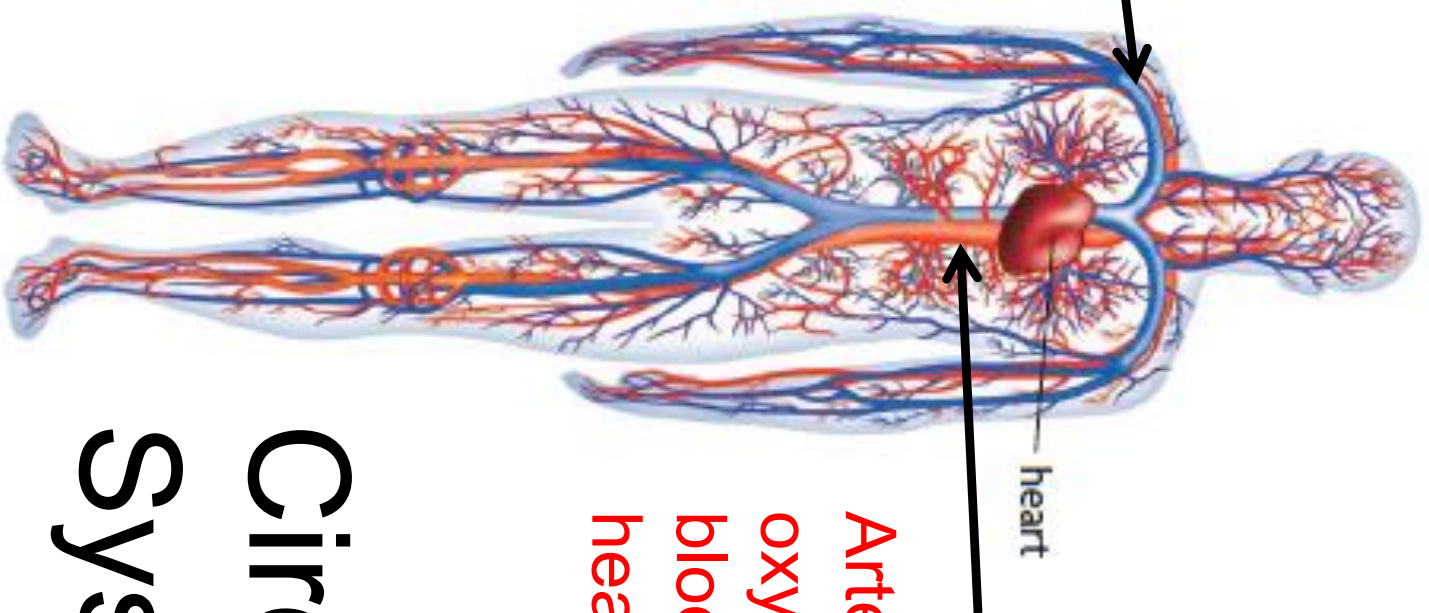
Human Systems

Unit 10

Circulatory System

- **Structures:**
 - Heart, blood vessels, blood
- **Function:**
 - Brings O₂, nutrients and hormones to cells, fights infection, removes cell waste, regulates body temperature, carries CO₂ to lungs.
- **Relationship to Other Systems:**
 - Endocrine: Circulates hormones.
 - Lymphatic: Returns fluids to circulatory system.
 - Digestive: Brings nutrients to places needed.

Veins: carry
oxygen depleted
blood to the
heart



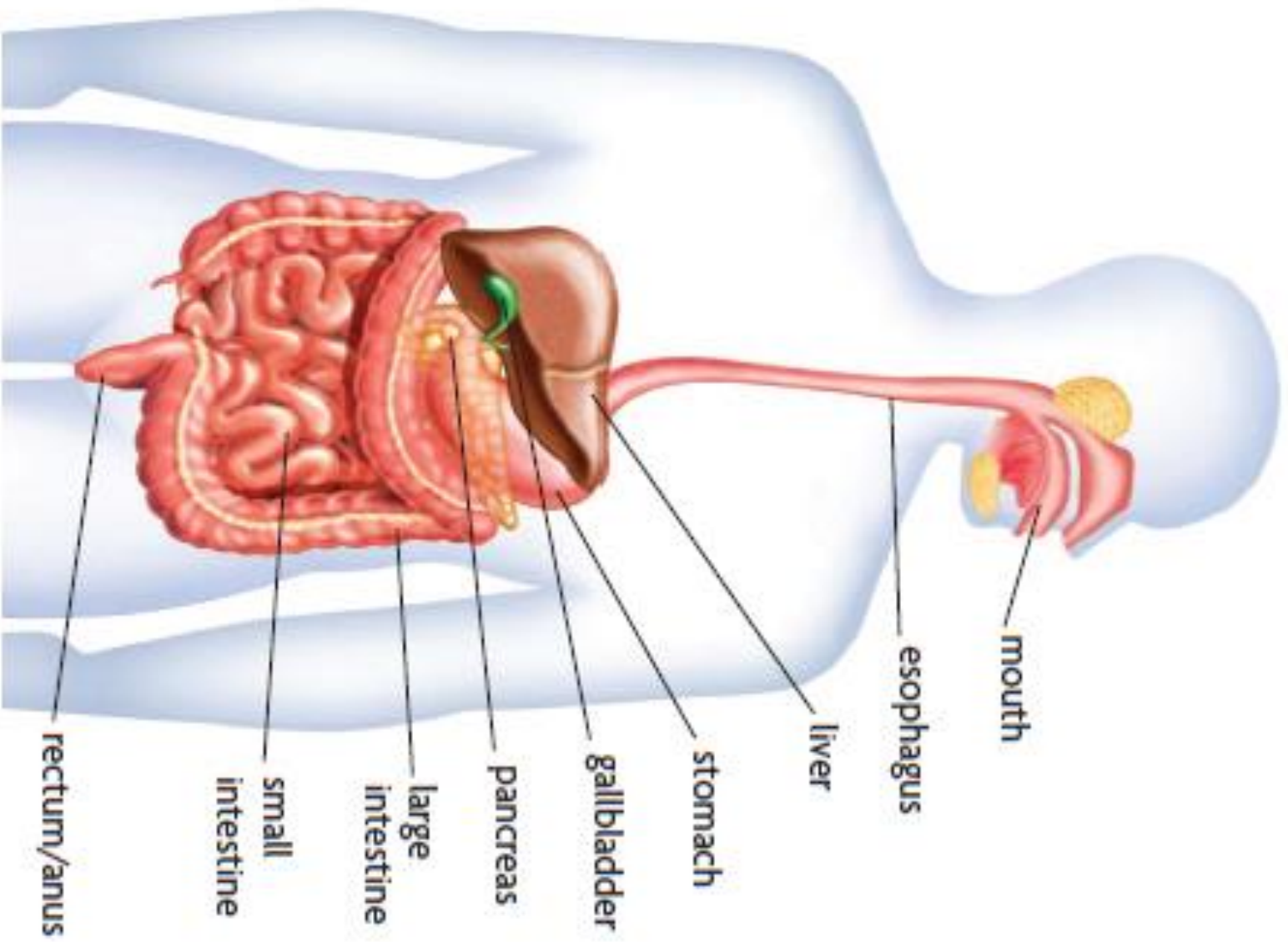
Arteries: carry
oxygen rich
blood from the
heart

Circulatory System

Digestive System

- **Structures:**
 - Mouth, pharynx, esophagus, stomach, small and large intestines, rectum
- **Function:**
 - Breaks down food for cells to use, absorbs food, eliminates solid wastes.
- **Relationship to Other Systems:**
 - Excretory: Eliminates nitrogenous wastes produced.
 - Circulatory: Moves nutrients through body.
 - Endocrine: Hormones allow organs to function/digest properly, metabolism, hunger

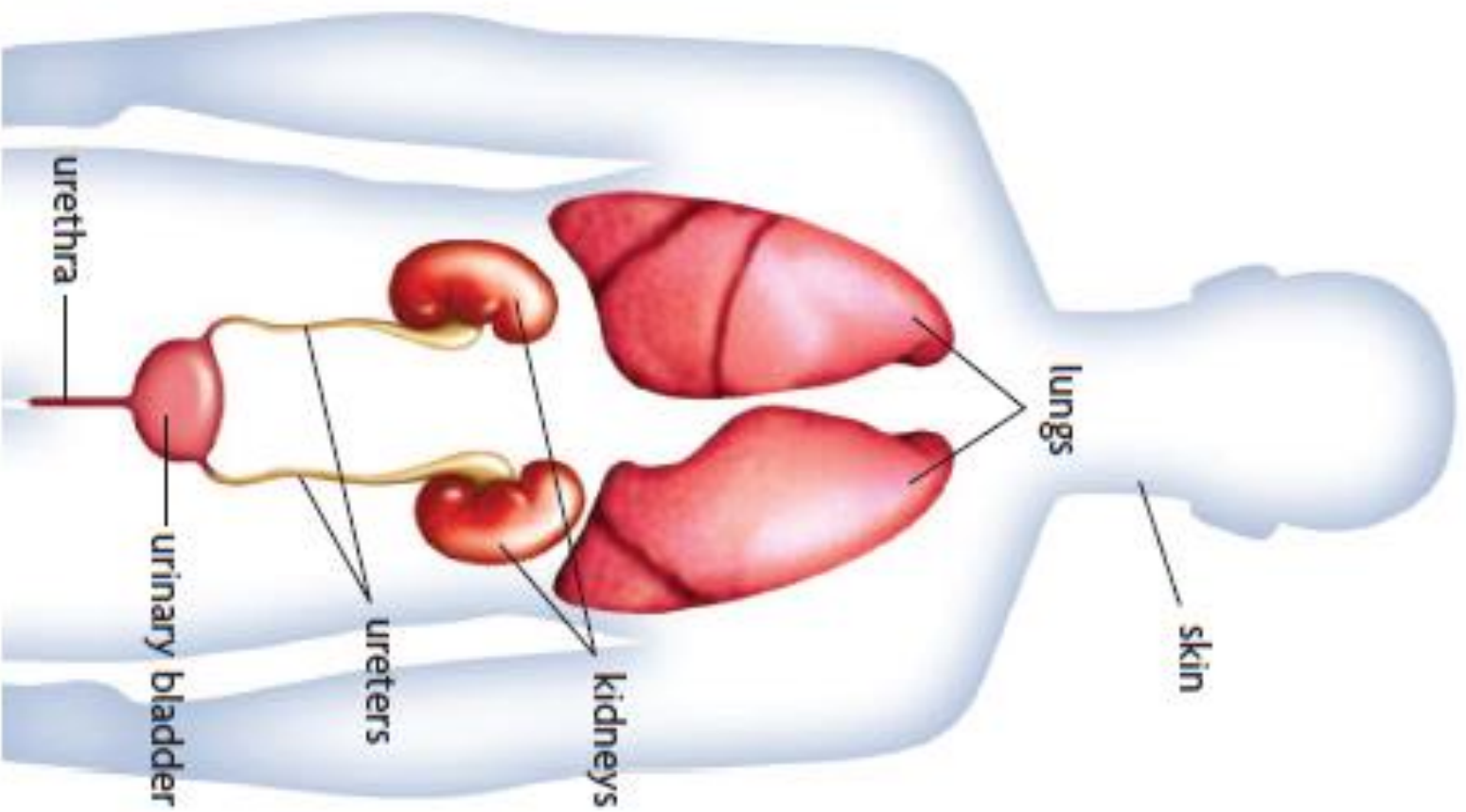
Digestive System



Excretory System

- **Structures:**
 - Skin, lungs, kidneys, ureters, urinary bladder, urethra
- **Function:**
 - Eliminates nitrogenous wastes from body; maintains homeostasis.
- **Relationship to Other Systems:**
 - Circulatory: Filters nitrogenous wastes from blood in kidneys
 - Lymphatic: Maintains water balance in blood.

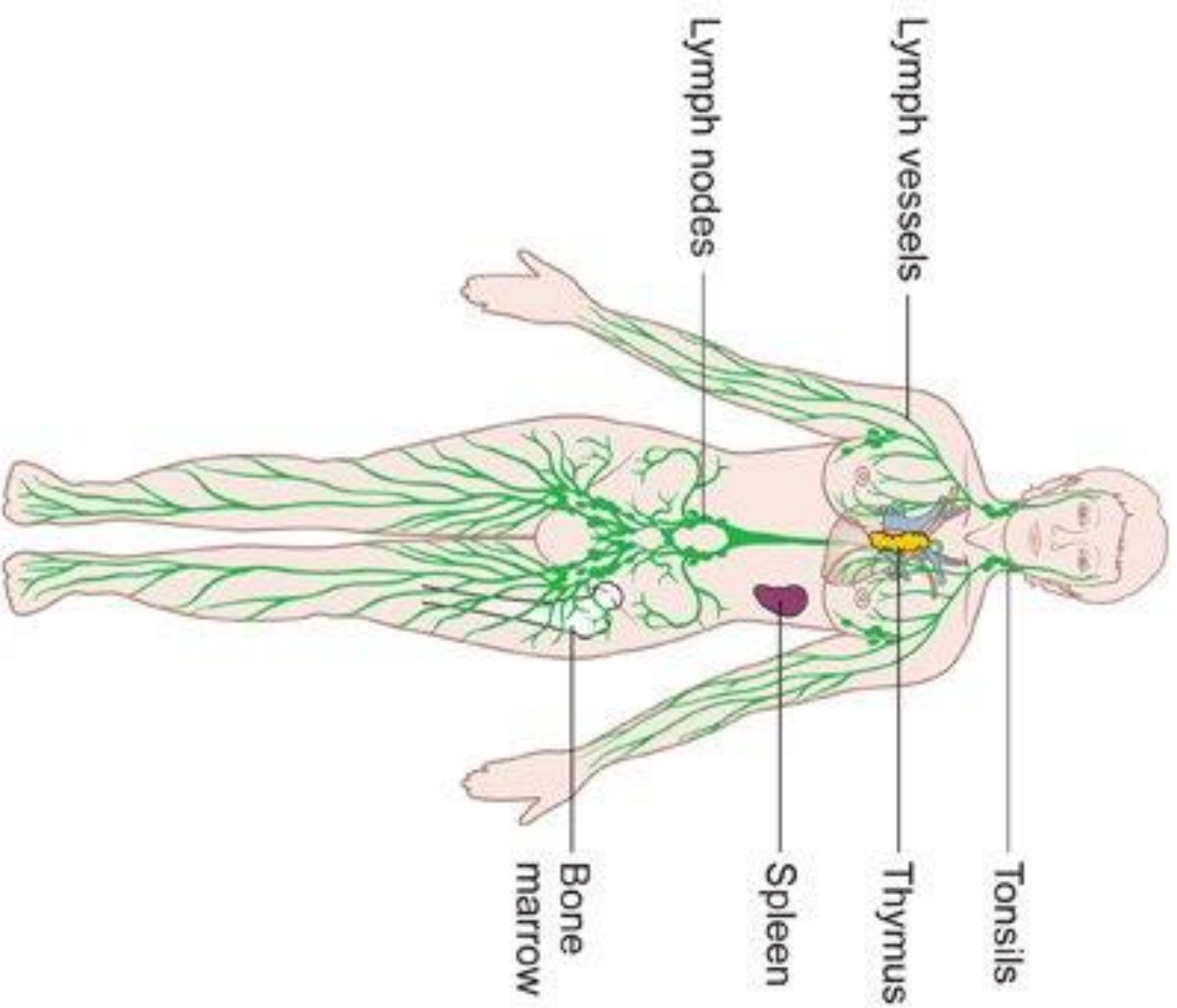
Excretory System



Lymphatic / Immune Systems

- **Structures:**
 - White blood cells, thymus, spleen, lymph nodes, lymph vessels
- **Function:**
 - Immune: Protects body from disease.
 - Lymphatic: Collects fluid and returns to circulatory system.
- **Relationship to Other Systems:**
 - See other previous relationships.

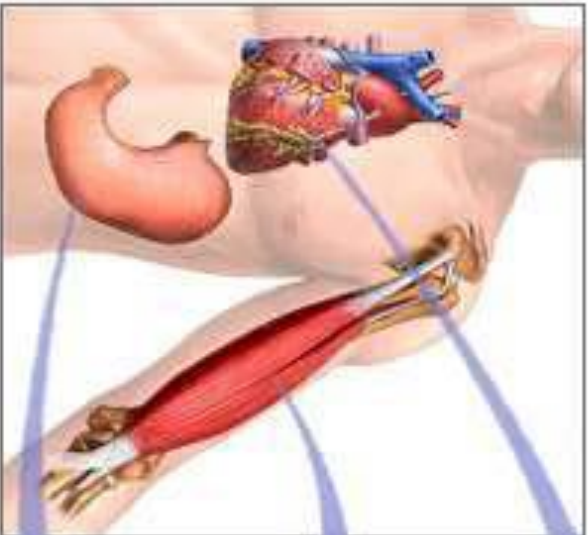
Lymphatic System



Muscular System

- **Structures:**
 - Skeletal muscle, smooth muscle, cardiac muscle
- **Function:**
 - Movement, circulate blood and move food through digestive system.
- **Relationship to Other Systems:**
 - Circulatory: Circulates O₂ to muscles (heart is composed of cardiac muscle).
 - Skeletal: Creates movement.

Muscular System



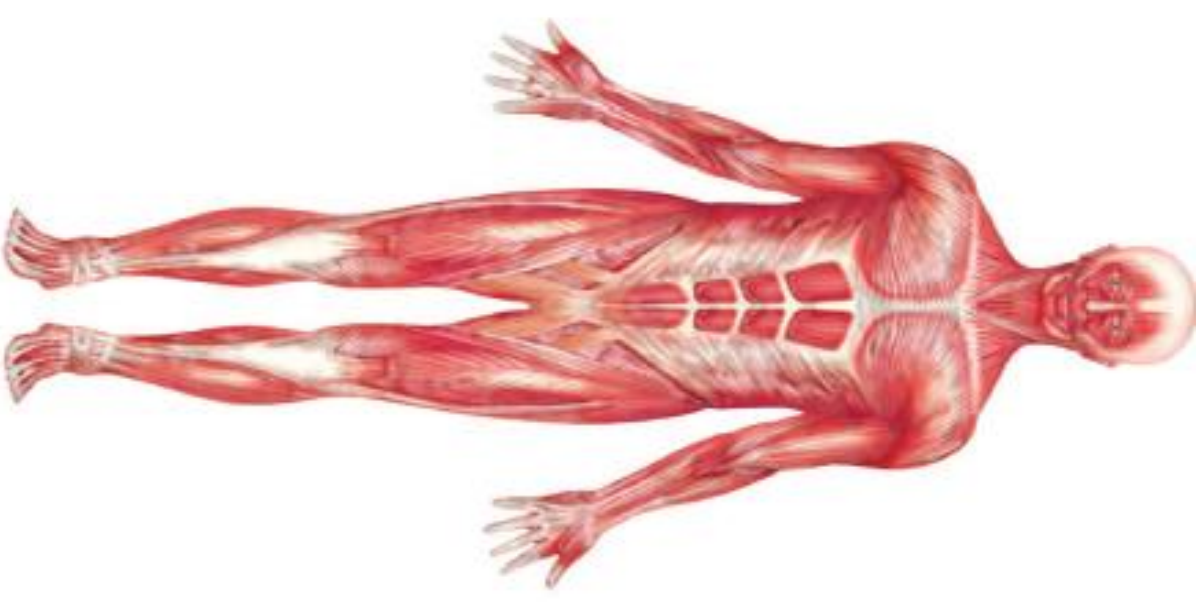
Cardiac muscle cell



Skeletal muscle cell



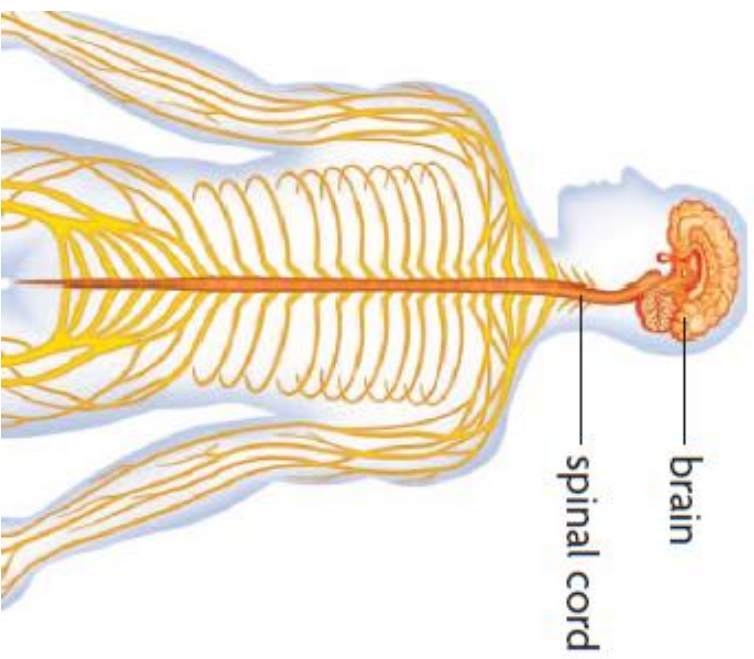
Smooth muscle cell





Nervous System

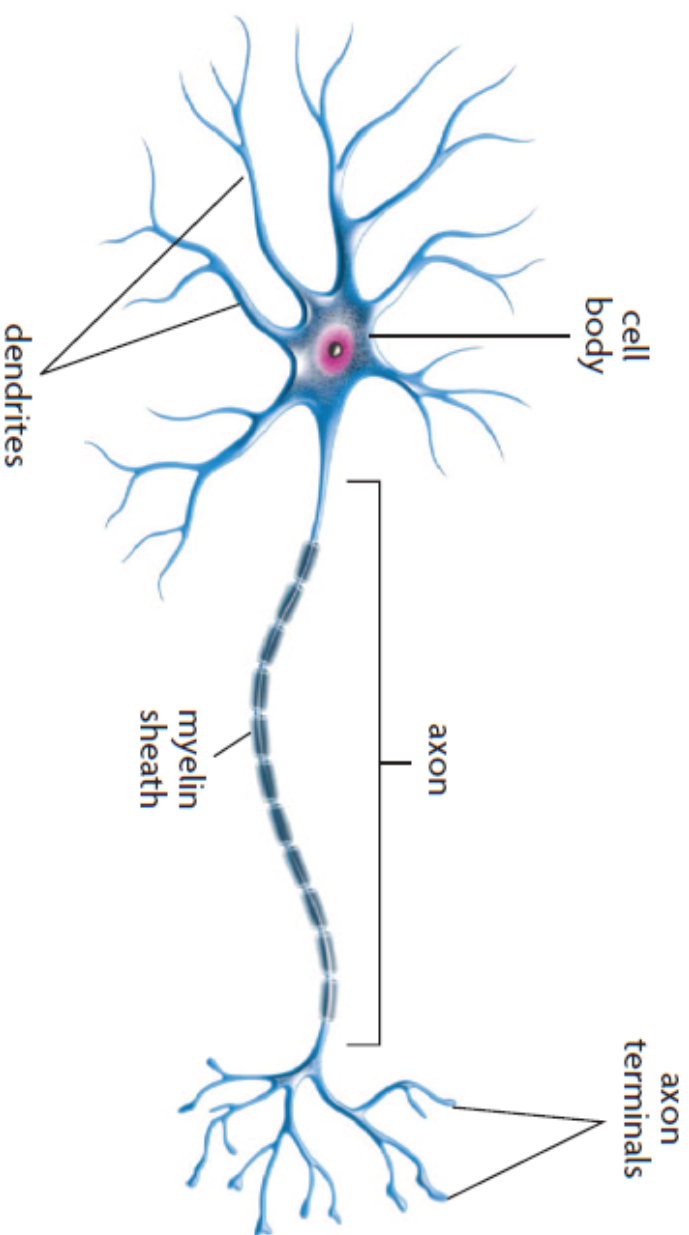
- **Structures:**
 - Brain, spinal cord, peripheral nerves.
- **Function:**
 - Recognizes and coordinates body's response to changes in internal and external environments.
- **Relationship to Other Systems:**
 - Integumentary: Sense of touch
 - Respiratory: Involuntary breathing
 - Muscular: Impulse to contract

Nervous system



-  Peripheral system
-  Central system

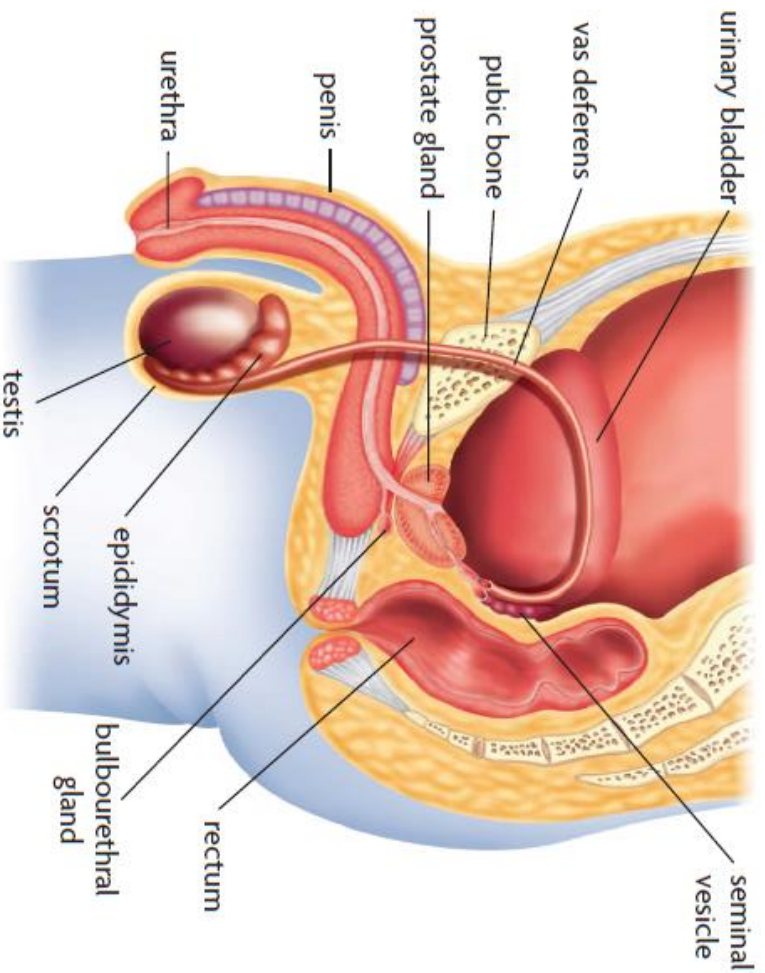
Nerve cell



Reproductive System

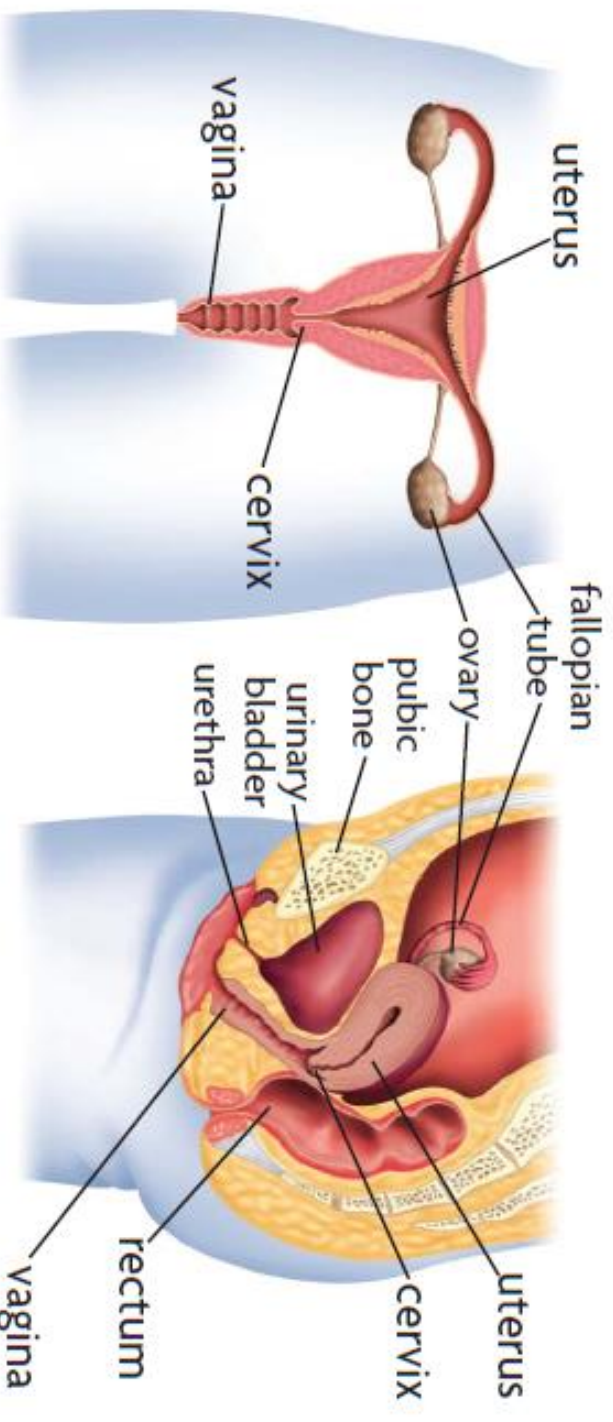
- **Structures:**
 - Testes, urethra, penis (male); ovaries, Fallopian tubes, uterus, vagina (female)
- **Function:**
 - Creates gametes, nurtures/protects developing embryo (females)
- **Relationship to Other Systems:**
 - See other previous relationships.

Male Reproductive System



Reproductive System

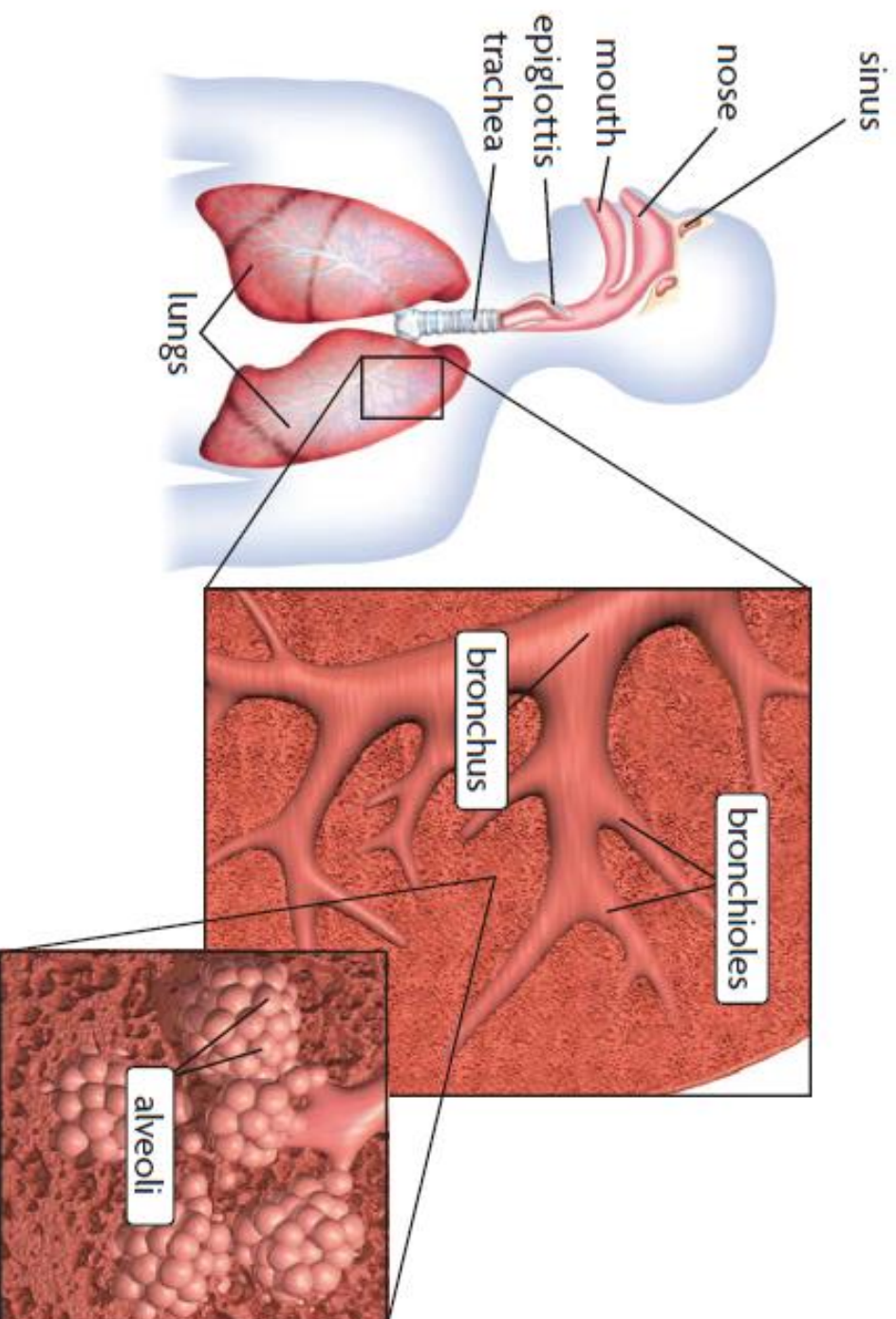
Female Reproductive System



Respiratory System

- **Structures:**
 - Nose, pharynx, larynx, trachea, lungs
- **Function:**
 - Provides O₂ and removes CO₂.
- **Relationship to Other Systems:**
 - Muscular: Uses O₂.
 - Circulatory: Circulates O₂/CO₂.
 - Nervous: “Fight or Flight” affects breathing.

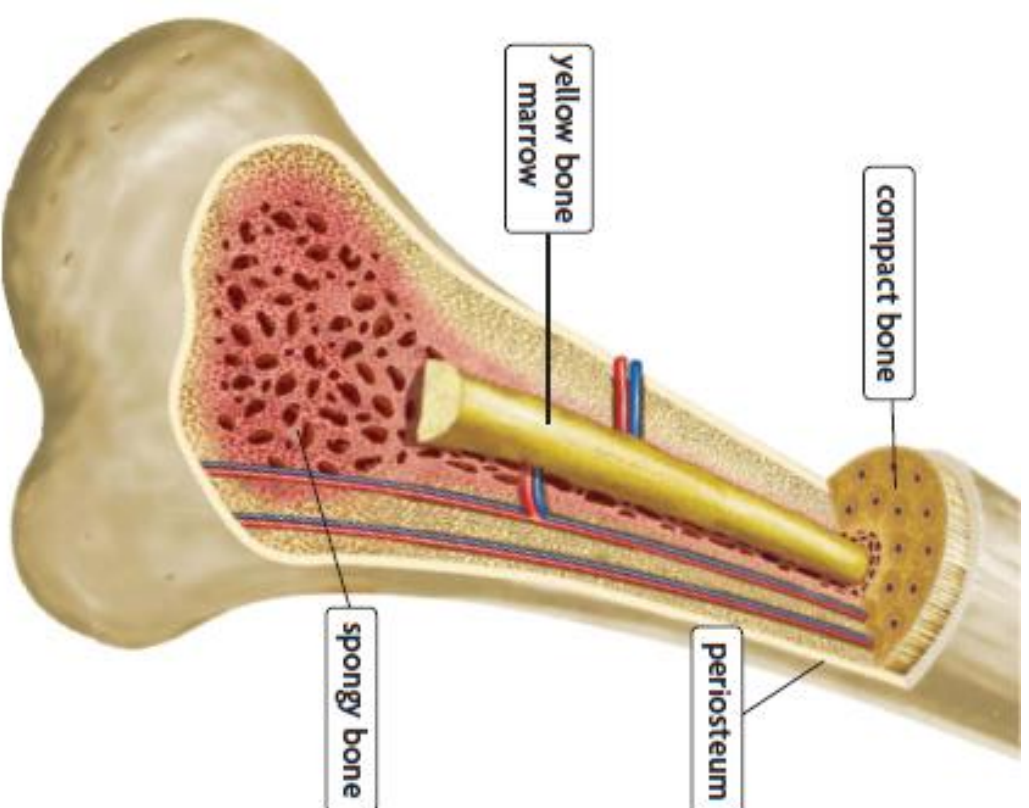
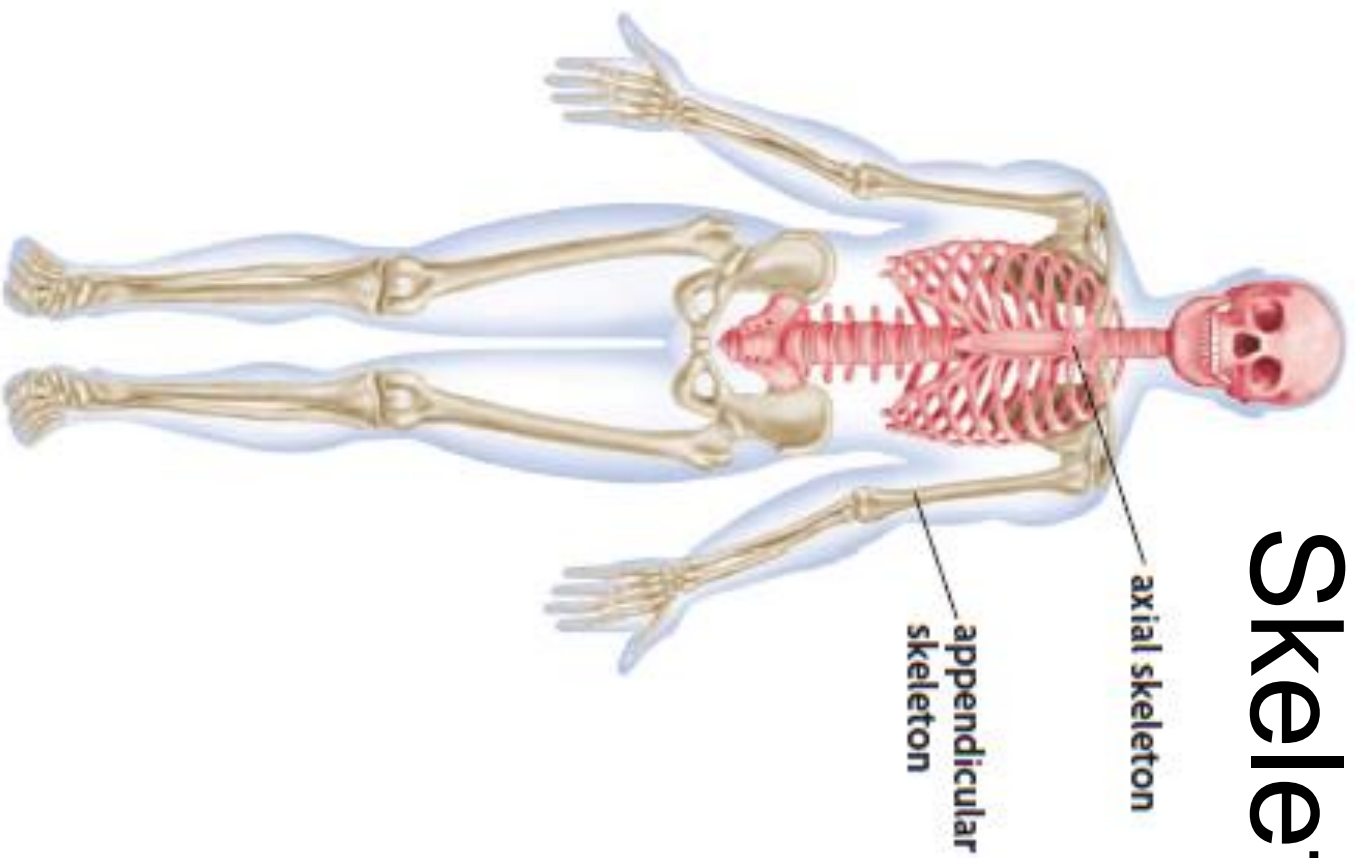
Respiratory System



Skeletal System

- **Structures:**
 - Bones, cartilage, ligaments, tendons, red marrow
- **Function:**
 - Supports body, protects organs, movement, stores minerals, site for RBC formation.
- **Relationship to Other Systems:**
 - Muscular: Provides support, creates movement.
 - Circulatory: Circulates RBCs.

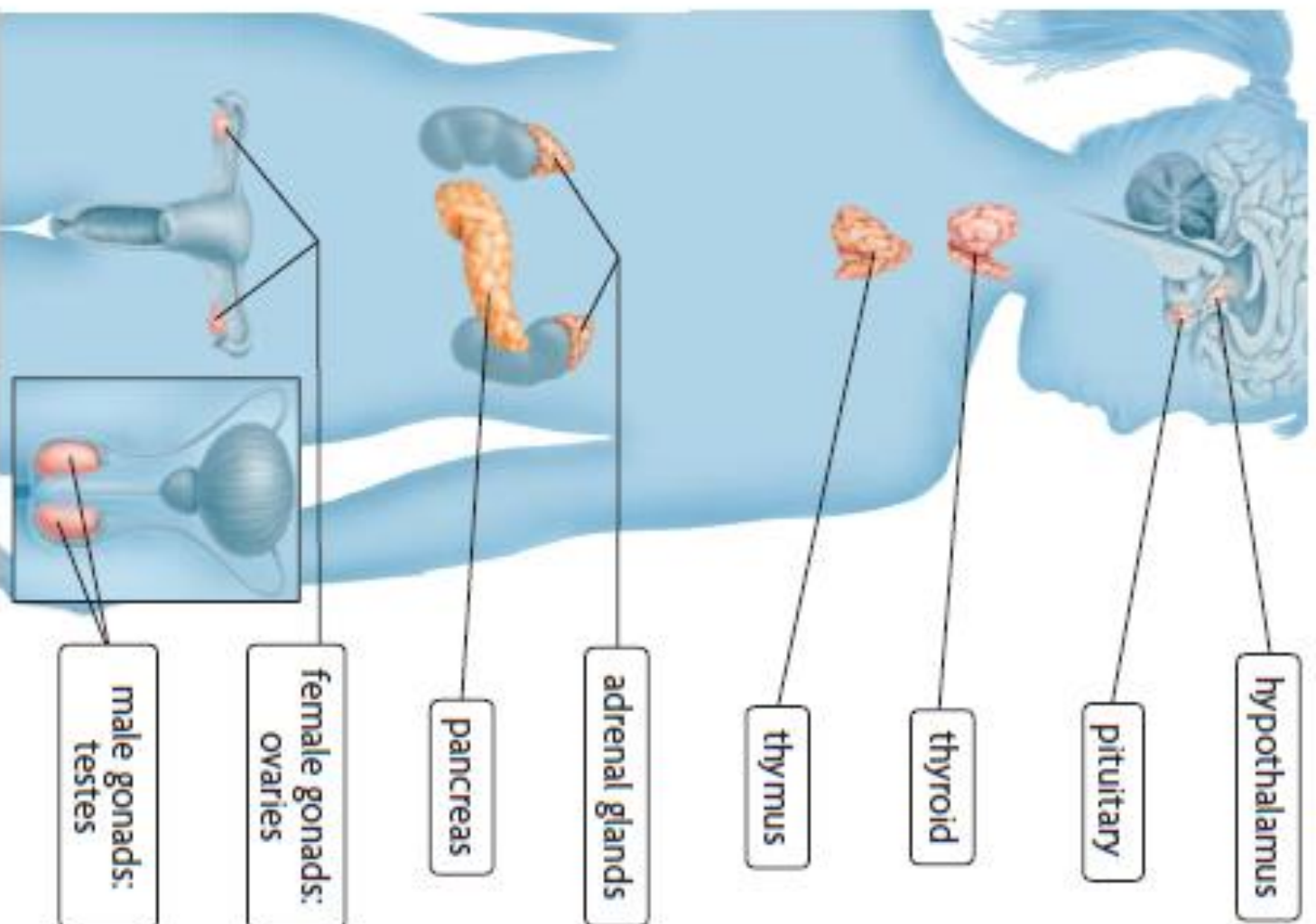
Skeletal System



Endocrine System

- **Structures:**
 - Hypothalamus, pancreas, ovaries, testes
 - Glands: pituitary, thyroid, parathyroid, adrenal
- **Function:**
 - Controls growth, development, metabolism and maintains homeostasis.
- **Relationship to Other Systems:**
 - Reproductive: Onset of puberty, menstrual cycle

Endocrine system



Integumentary System

- **Structures:**

- Skin, hair, nails, sweat and oil glands

- **Function:**

- First line of defense against infection and injury, regulates body temperature protection against sunlight. Skin is largest organ.

- **Relationship to Other Systems:**

- Covers all other systems.
- Endocrine: Hormones determine oil secretion to skin.

Integumentary system

