

# **Human Anatomy & Physiology**

## **Chapter 1**

### **The Human Body: An Orientation**

# STRUCTURE

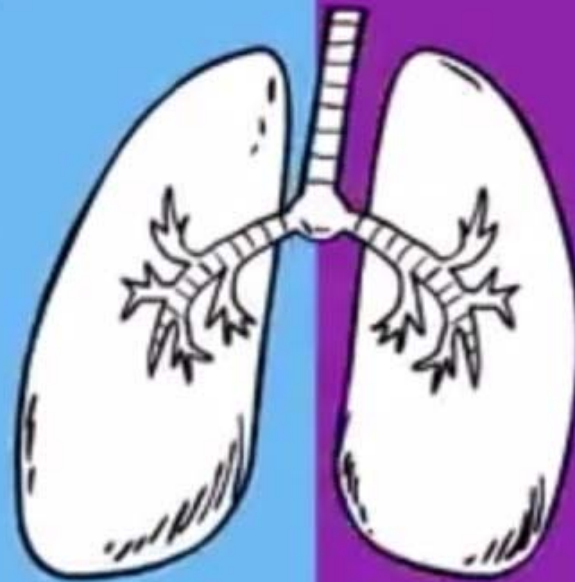
What does it look like?

What is it made of?

# FUNCTION

What does it do?

What is its job?



## **Anatomy**

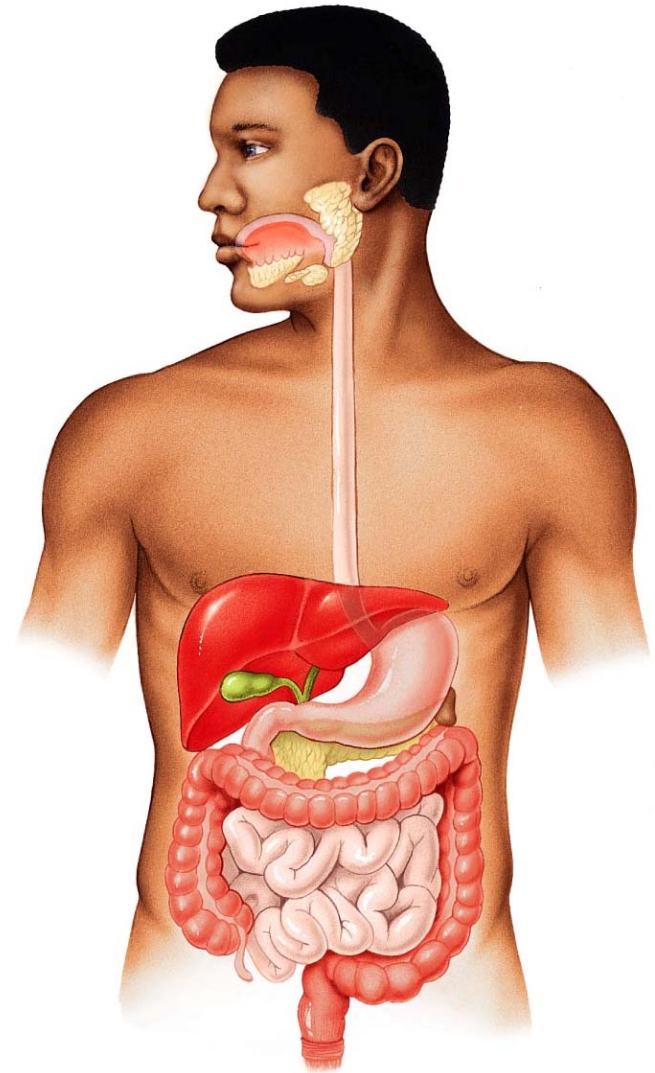
- Study of the structure and shape of the body and its parts

## **Physiology**

- Study of how the body and its parts work or function
  - Ex. Heart beating
  - Ex. Nerve sending electrical impulse

# Anatomy—Levels of Study

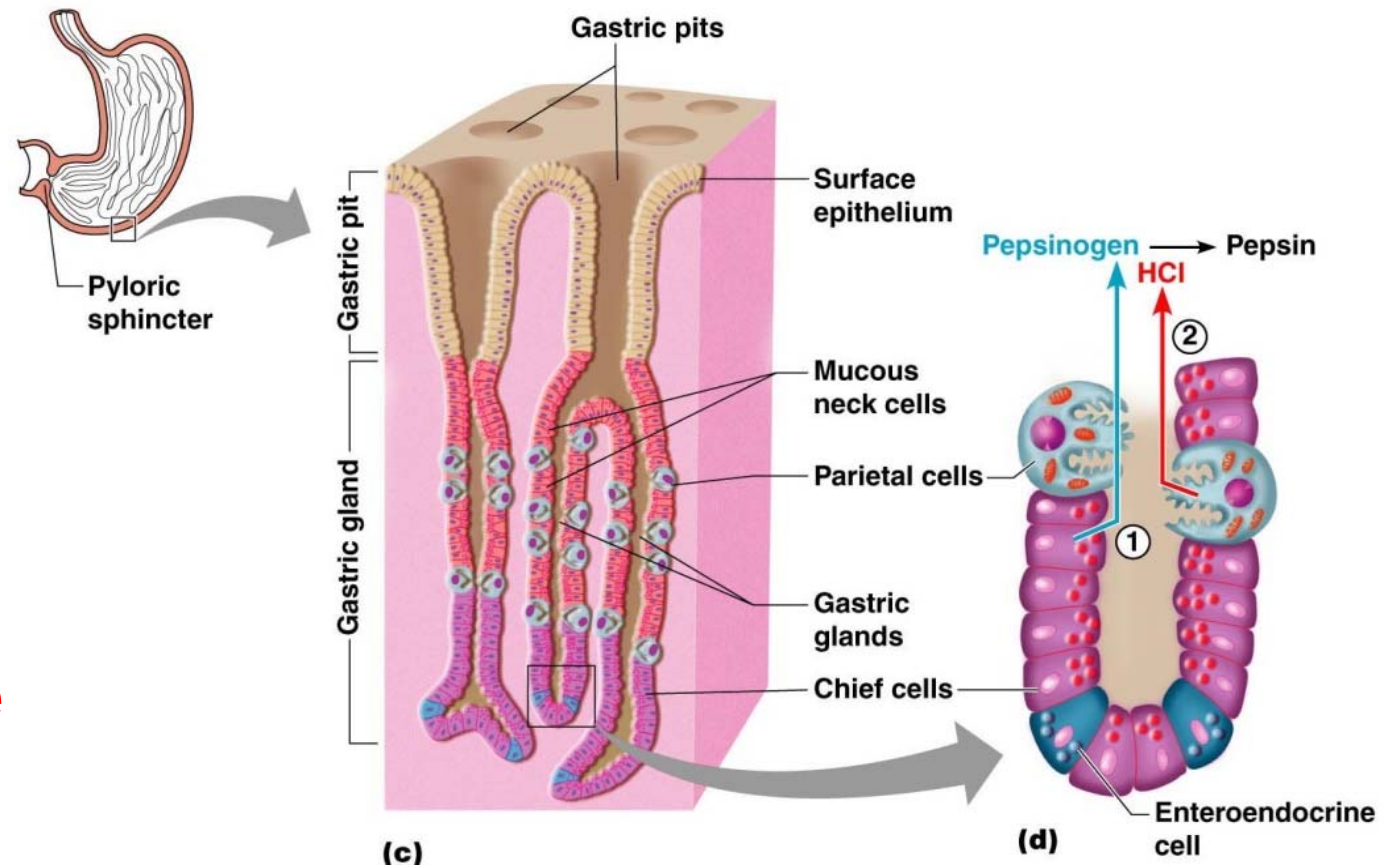
- **Gross anatomy**
  - **Large structures**
  - **Easily observable**



# Anatomy—Levels of Study

## ■ Microscopic Anatomy

- Very small structures
- Can only be viewed with a microscope



# Levels of Structural Organization

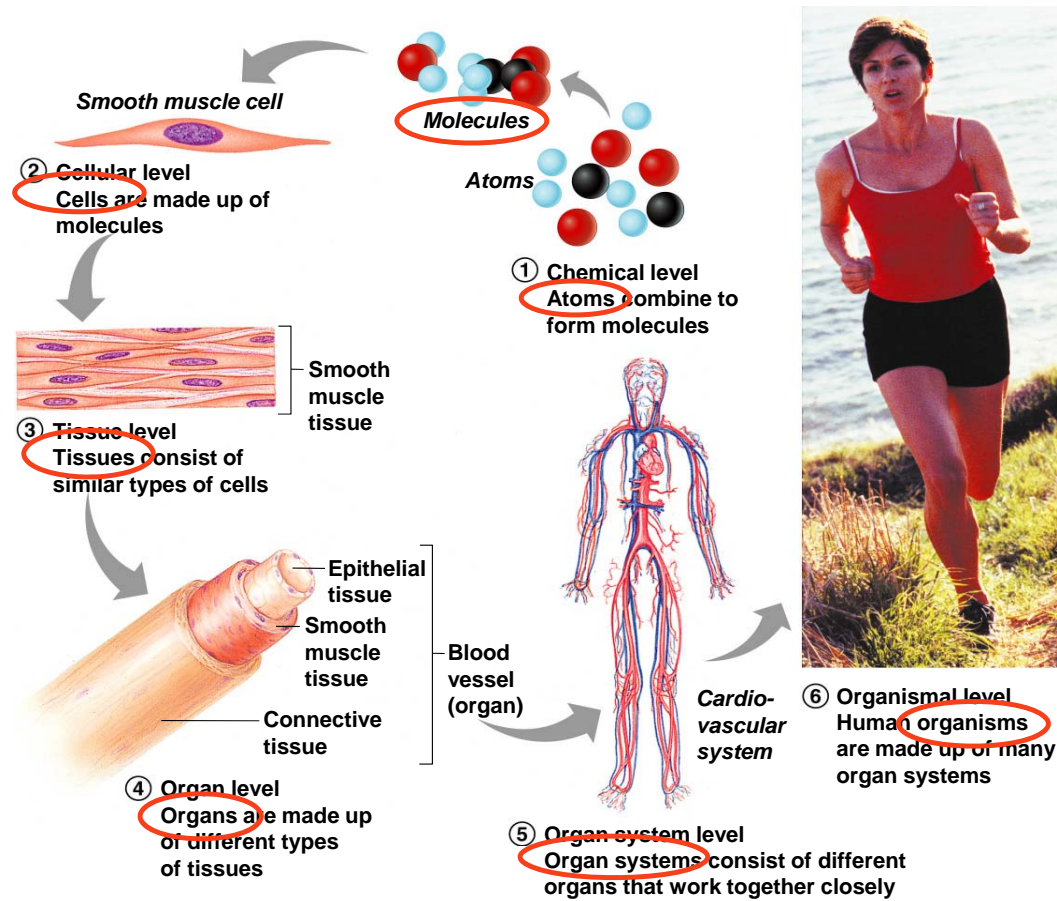


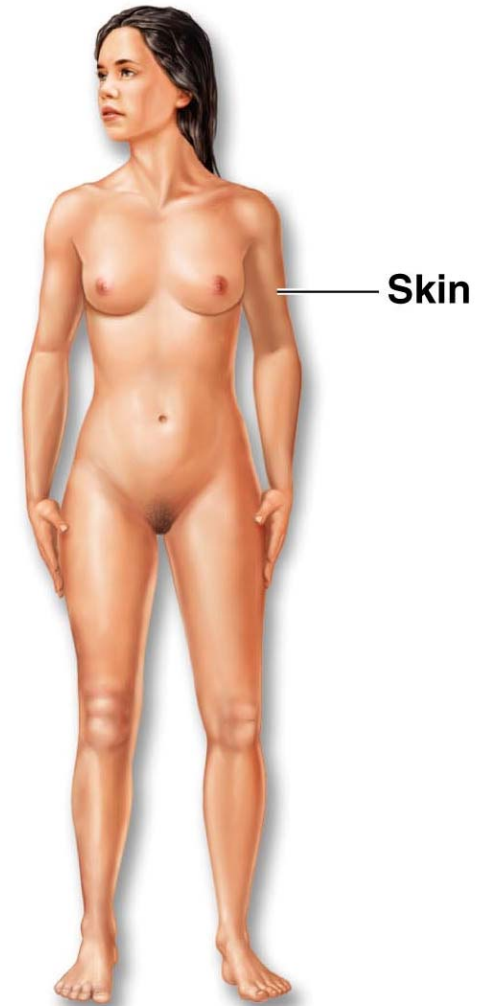
Figure 1.1

# Organ System Overview

## 1. Integumentary System (skin)

### Functions:

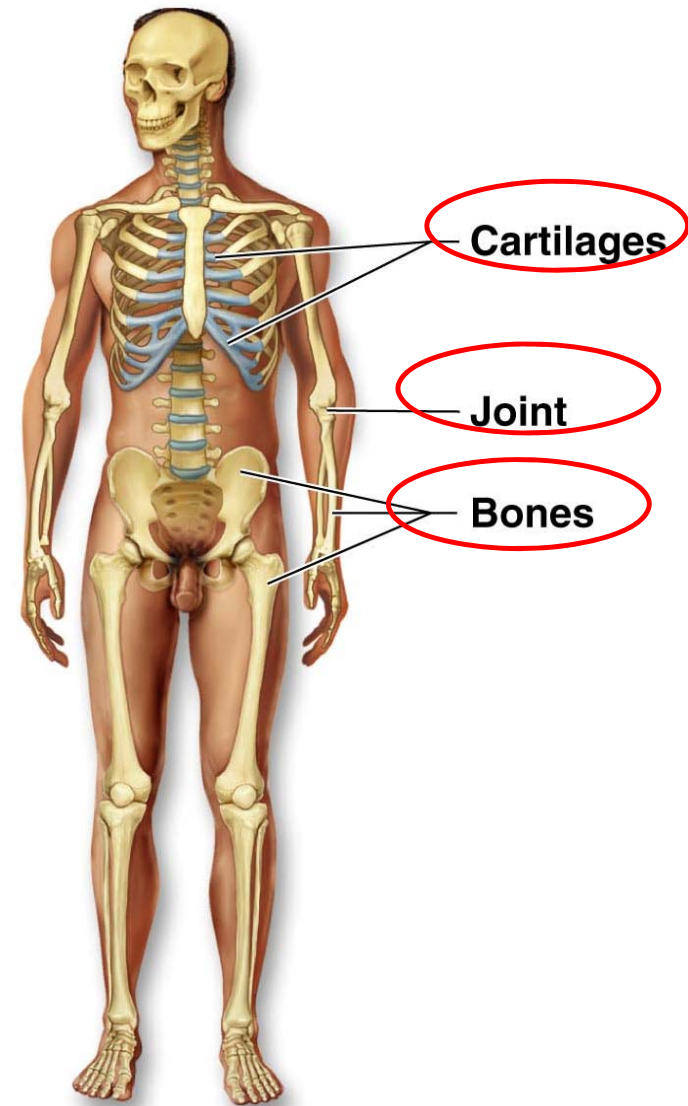
- Forms the external body covering
- Protects deeper tissue from injury
- Helps regulate body temperature
- Location of cutaneous nerve receptors



## 2. Skeletal System

### Functions:

- **Protects and supports body organs**
- **Provides muscle attachment for movement**
- **Site of blood cell formation**
- **Stores minerals**

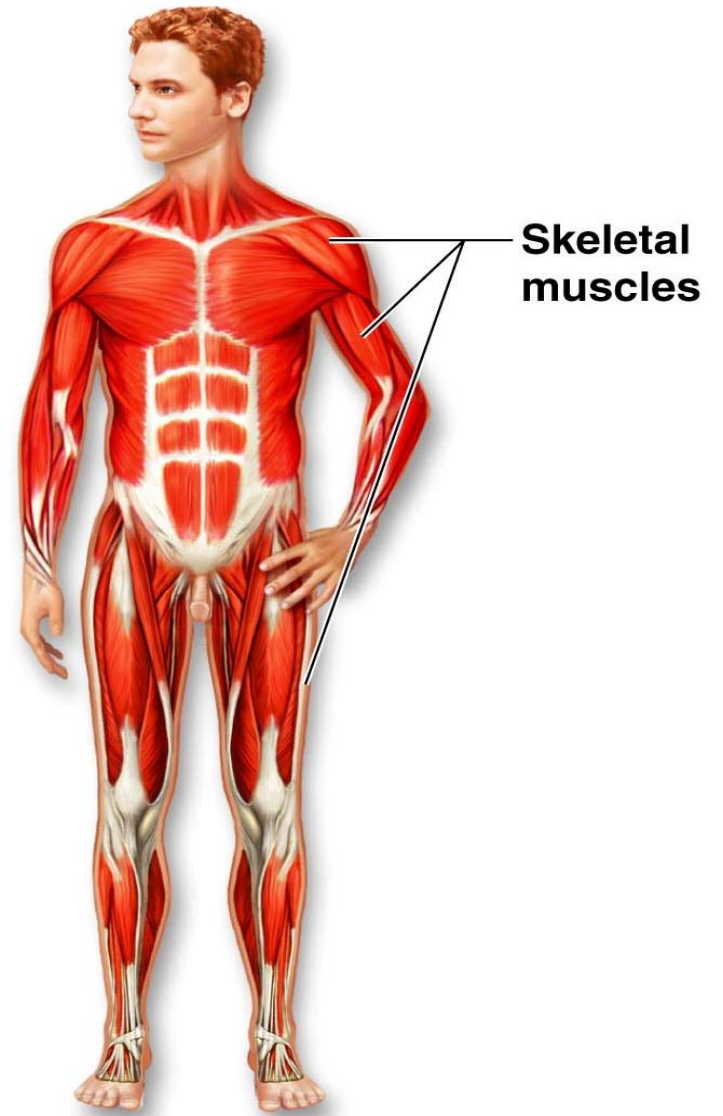




### 3. Muscular

#### Functions:

- **Produces movement**
- **Maintains posture**
- **Produces heat**

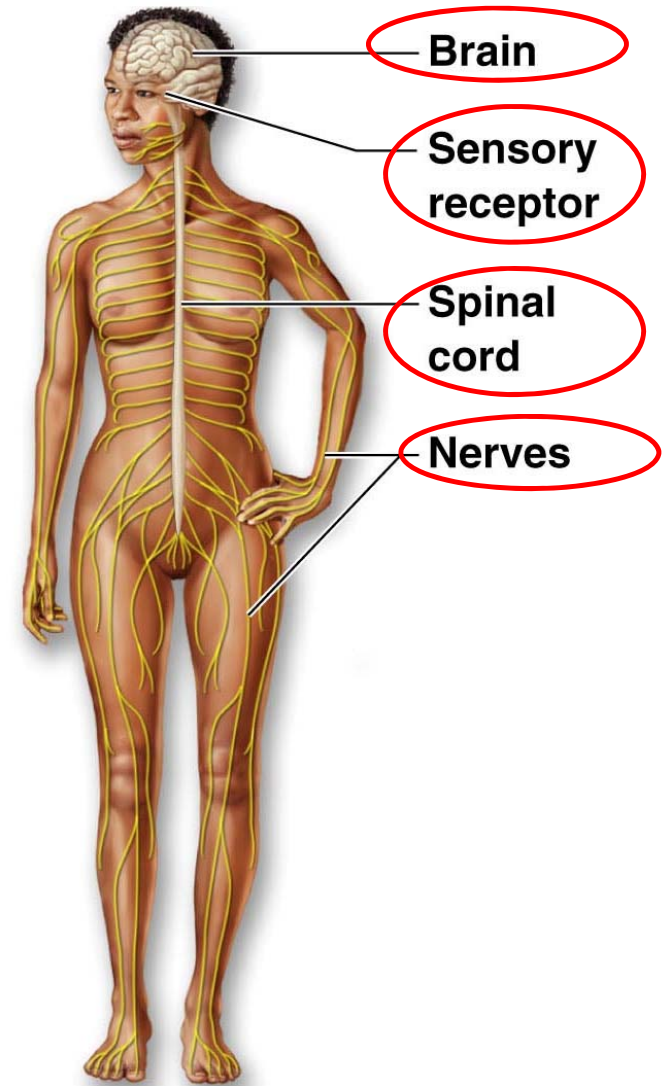


## 4. Nervous

- **Fast-acting control system**

### Functions:

- **Responds to internal and external changes**
- **Activates muscles and glands**



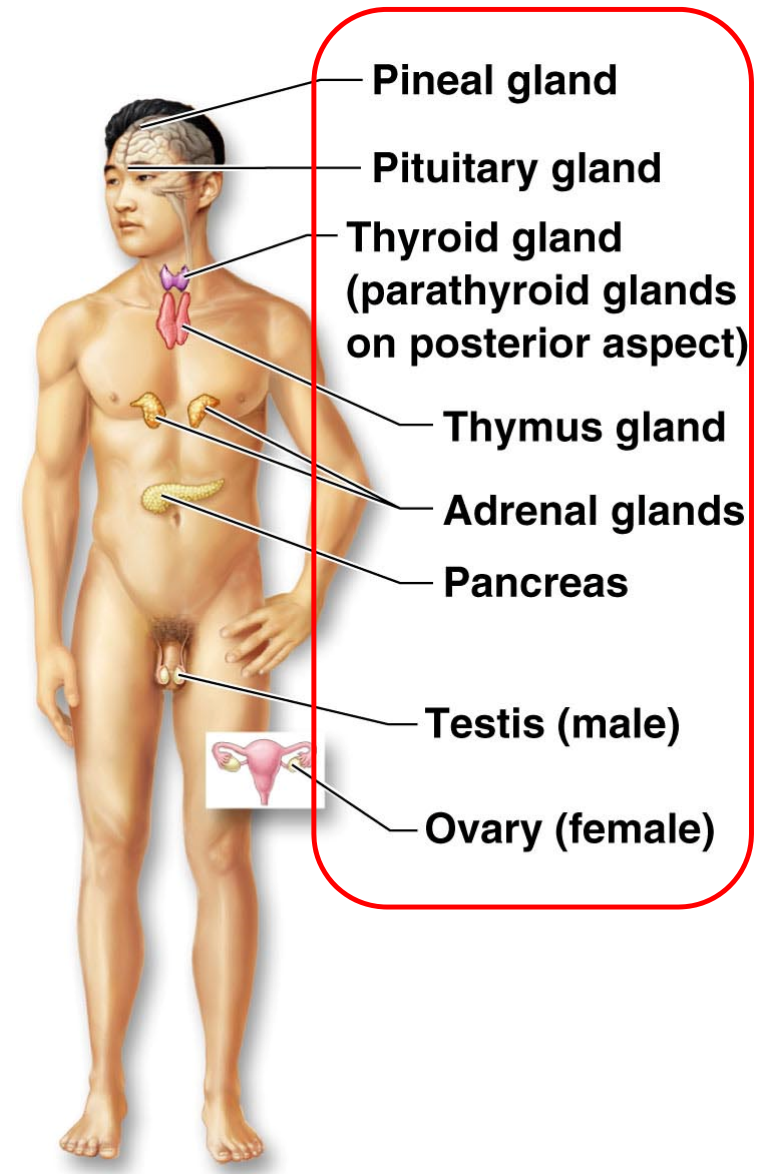
## 5. Endocrine

- Secretes hormones

Functions:

Regulation of

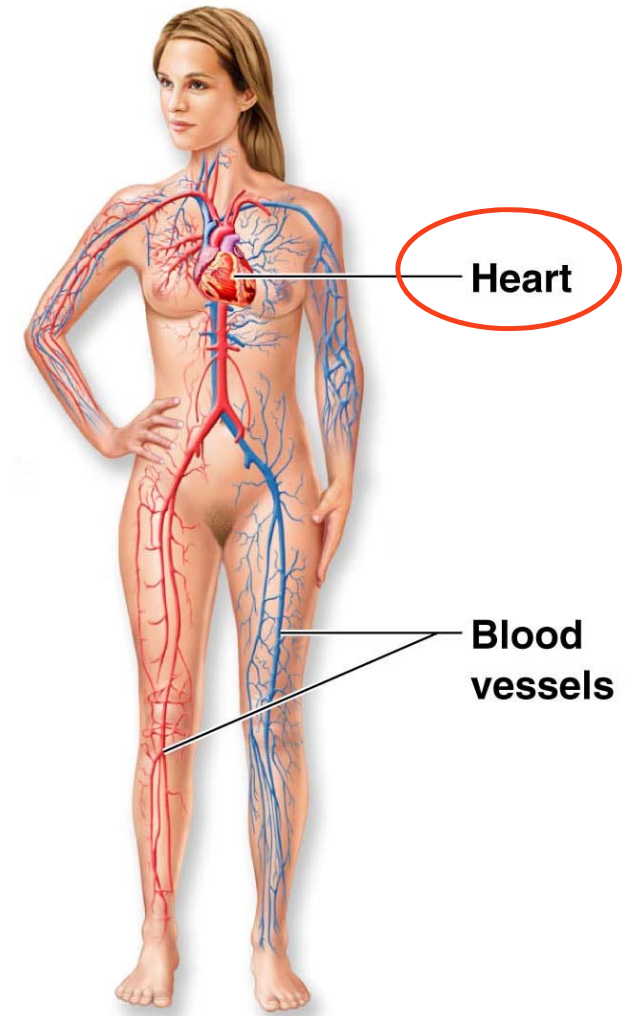
- Growth
- Reproduction
- Metabolism



## 6. Cardiovascular

### Function:

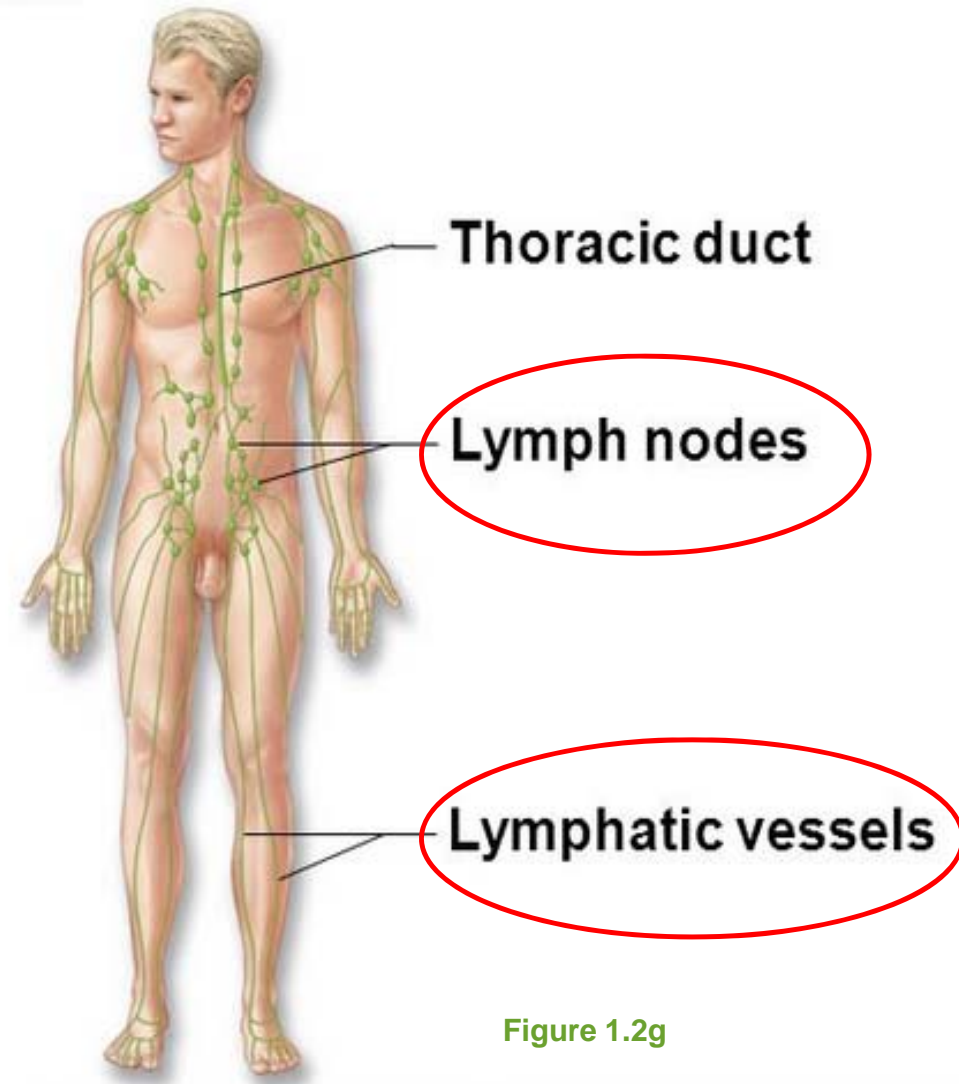
- **Transports materials in body via blood pumped by heart**
  - **Oxygen**
  - **Carbon dioxide**
  - **Nutrients**
  - **Wastes**



## 7. Lymphatic

### Functions:

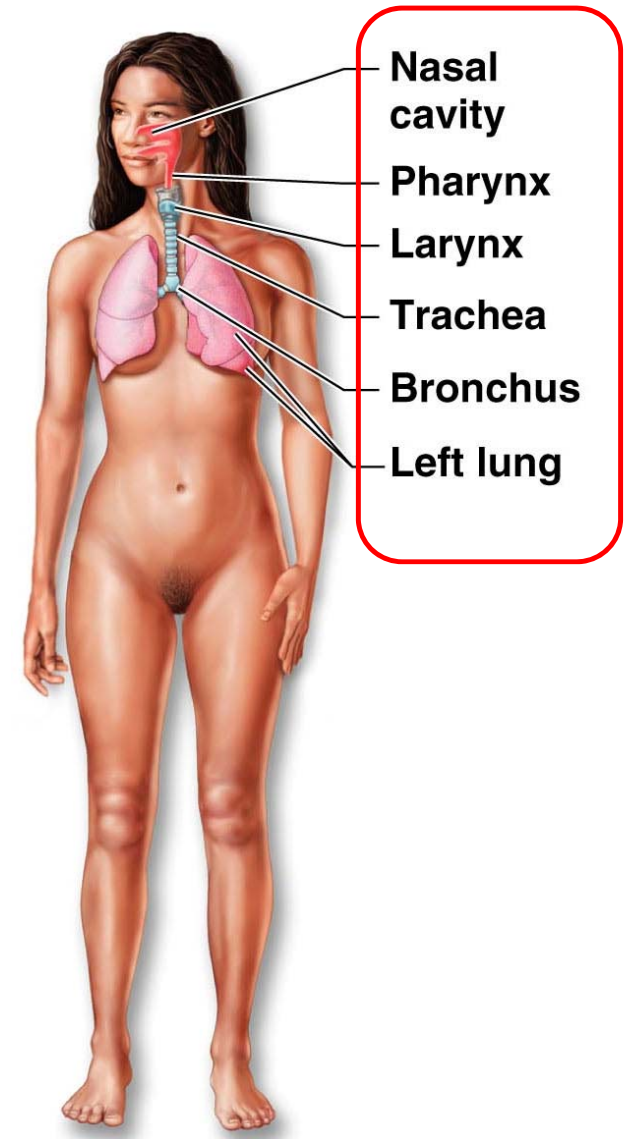
- **Returns fluid to blood vessels**
- **Cleanses the blood**
- **Involved in immunity**



## 8. Respiratory

### Functions:

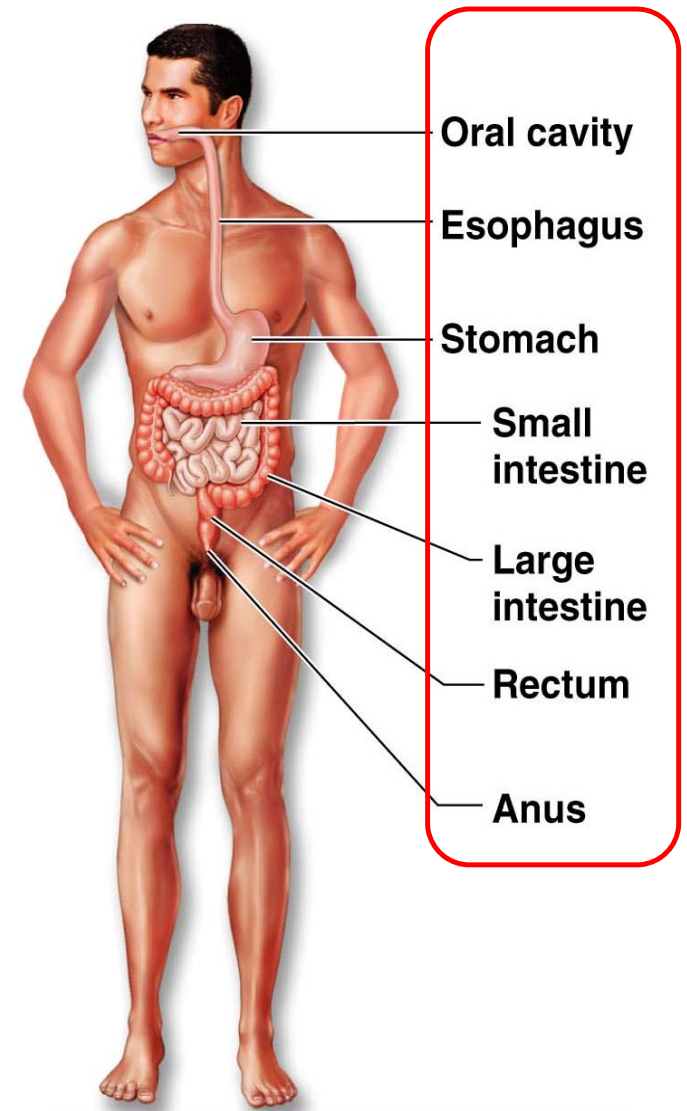
- **Keeps blood supplied with oxygen**
- **Removes carbon dioxide**



## 9. Digestive

### Functions:

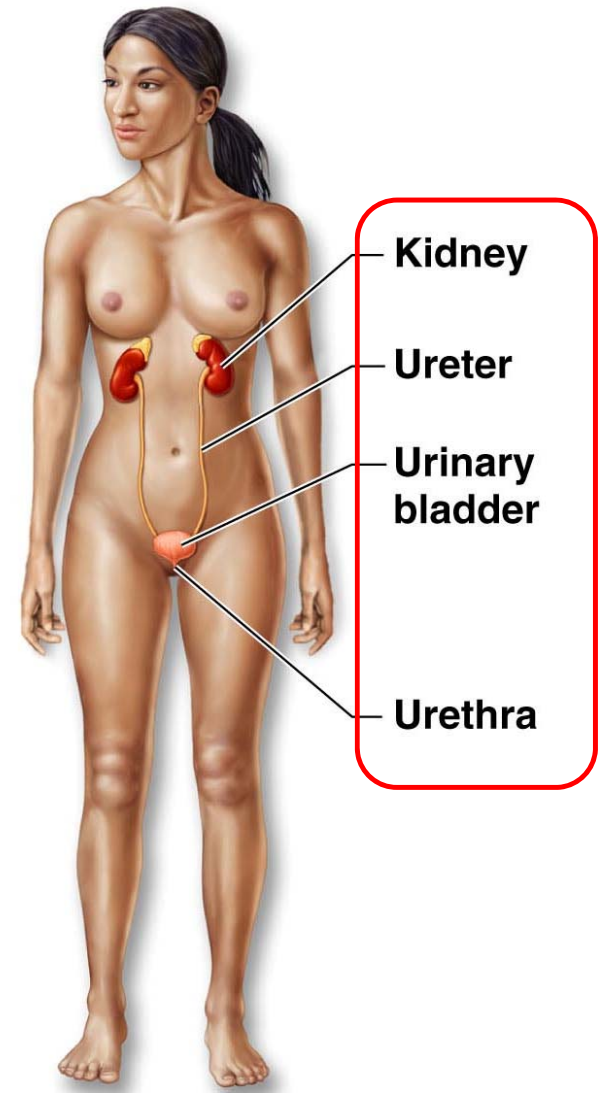
- **Breaks down food**
- **Allows for nutrient absorption into blood**
- **Eliminates indigestible material (feces)**



# 10. Urinary

## Functions:

- **Eliminates nitrogenous wastes (ex. Urea)**
- **Maintains acid-base balance**
- **Regulates water and electrolytes**





# 11. Reproductive

## Function:

- **Produce offspring**

**Males - produce sperm in testes**

**Females - produce eggs in ovaries**

**- serve as site of fertilization & fetal development**

