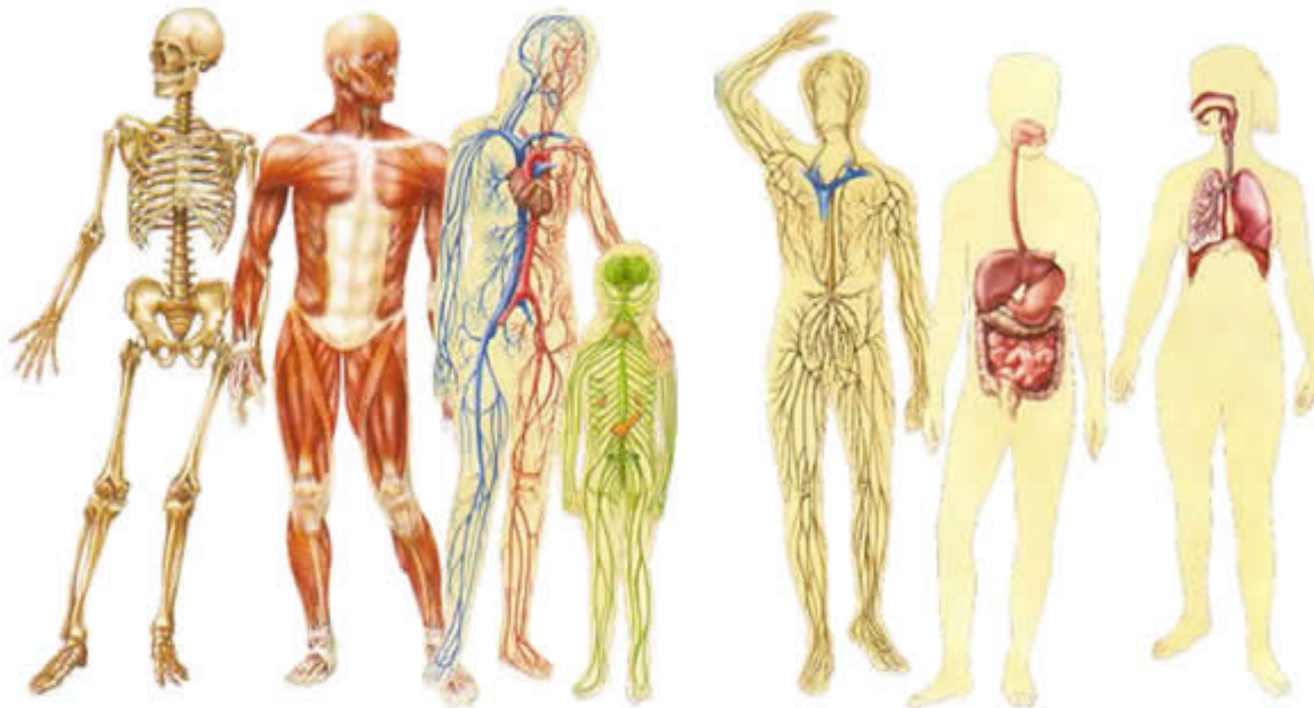

The Human Body



Emergency Medical Response



Lesson 5: The Human Body

You Are the Emergency Medical Responder

Your fire rescue unit responds to the scene of a motor-vehicle collision involving a car with two people and a minivan driven by a woman who has two small children in car seats. As you size-up the scene, three people appear to be injured. The first person, a woman who was driving one of the vehicles, is going in and out of consciousness. You suspect her injuries may include possible fractured ribs. The second person, a passenger in the same vehicle, has injuries on the right side of his body. The third person, the driver of the minivan, appears to have chest and abdominal injuries, but she is conscious and you can speak with her. She is distraught because her children are in the back of the minivan and she is concerned about them.

You Are the Emergency Medical Responder

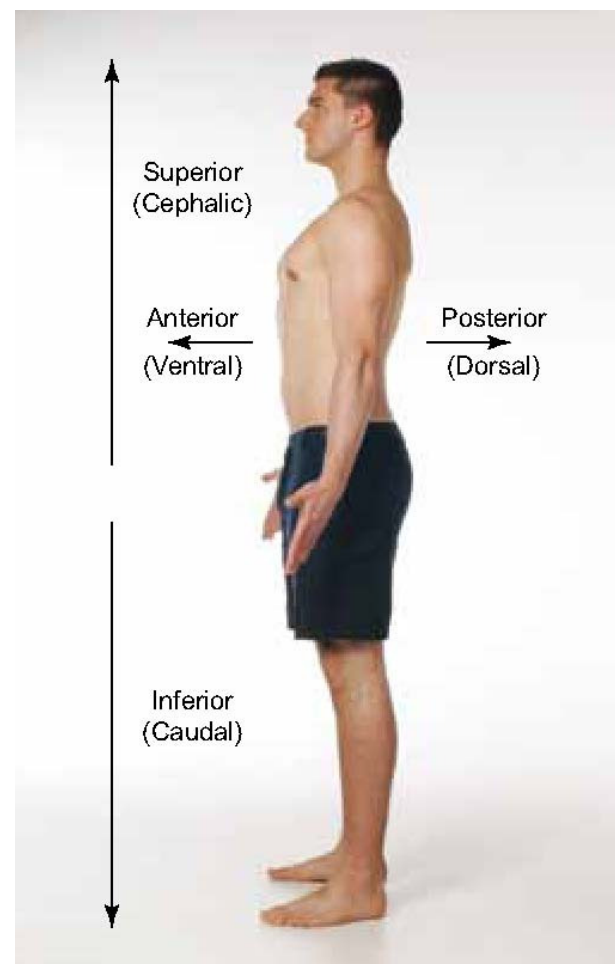
How would you describe the injuries and body systems involved to more advanced medical personnel?

Medical Terminology

- Combining forms
 - Cardi/o-
 - Neur/o-
 - Oro-
 - Arteri/o-
 - Hem/o-
 - Therm/o-
 - Vas/o-
- Common prefixes
 - Hyper/hypo-
 - Tachy/brady-
- Common suffixes
 - -emia
 - -a or -ia

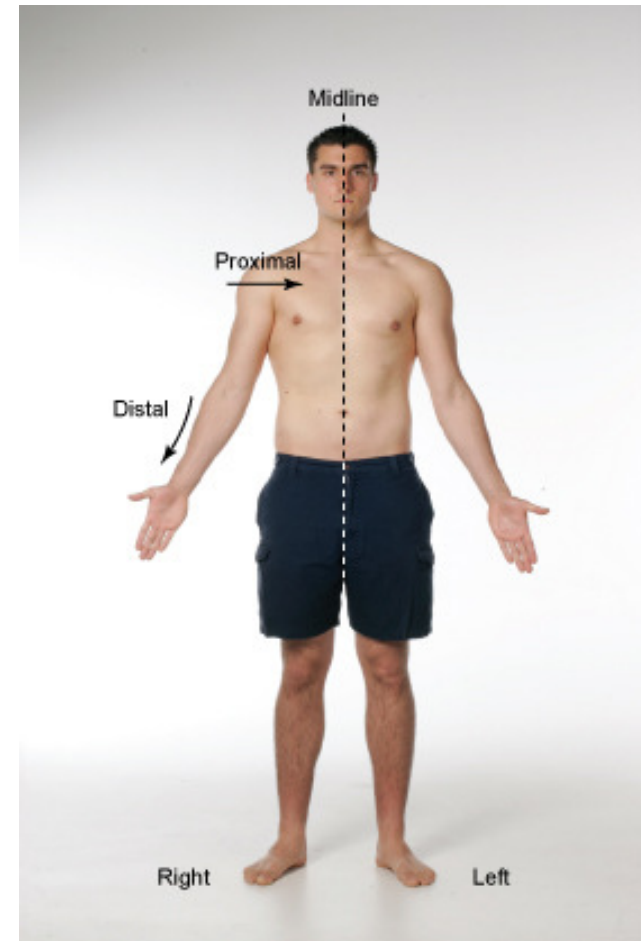
Directions and Locations

- Anterior/posterior
- Superior/inferior
- Frontal or coronal plane
- Sagittal or lateral plane
- Transverse or axial plane



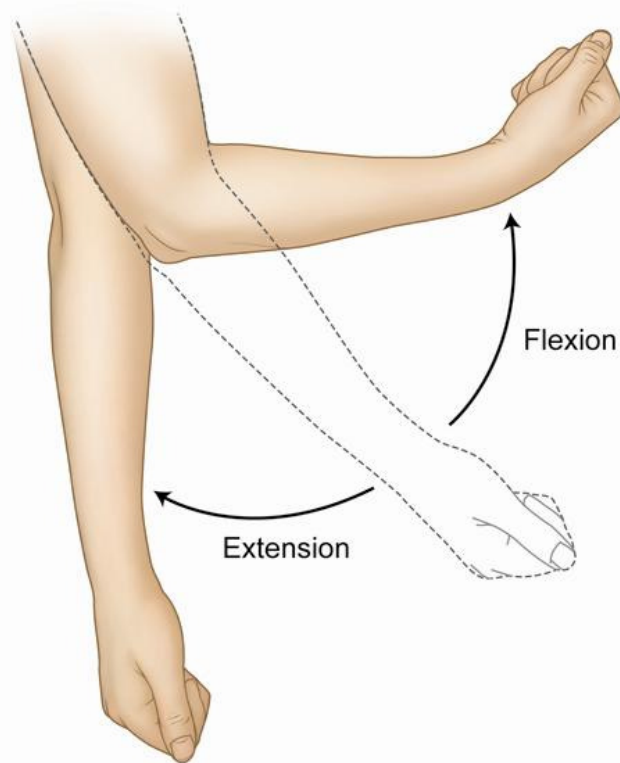
Directions and Locations

- Medial/lateral
- Proximal/distal
- Superficial/deep
- Internal/external
- Right/left



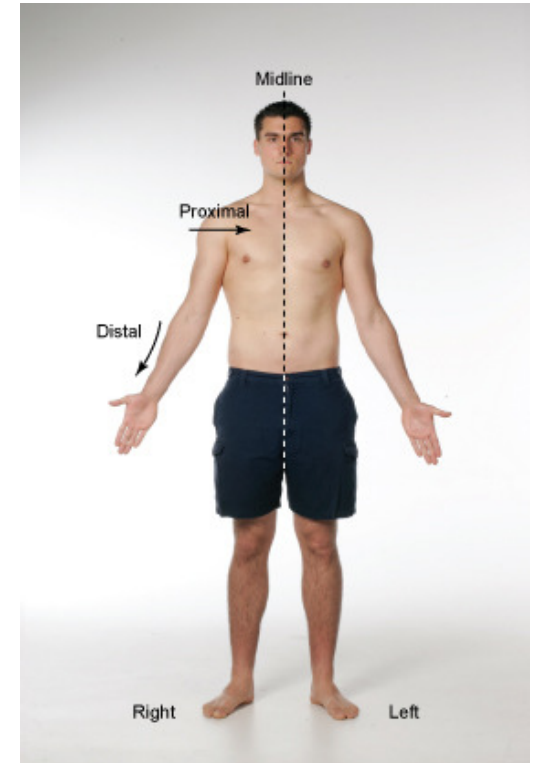
Movements

- Flexion
- Extension



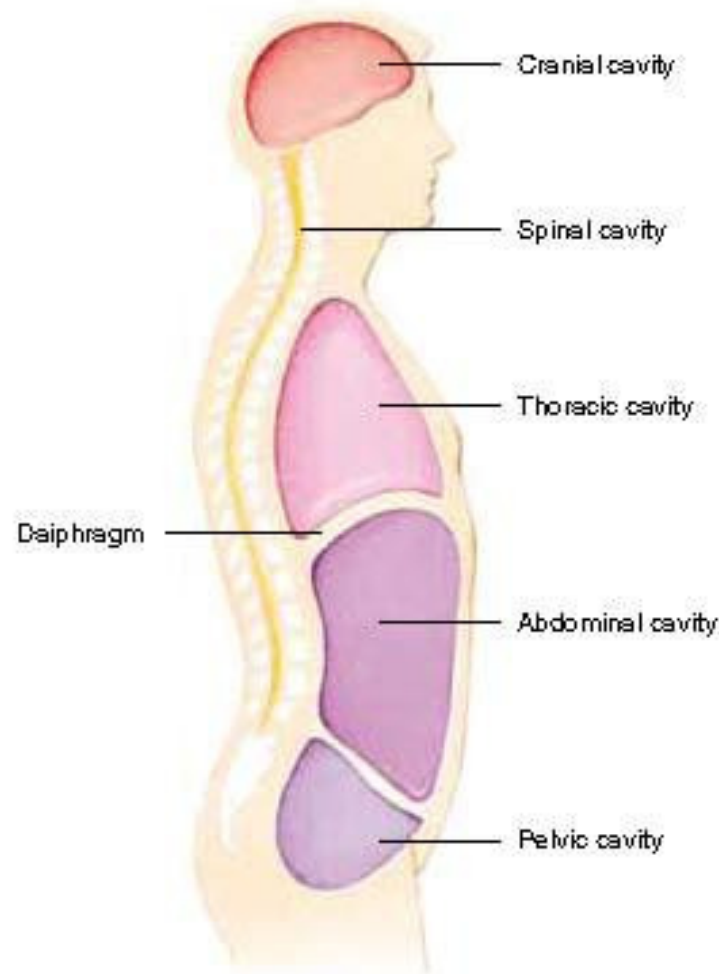
Positions

- Anatomical position
- Supine – face up on back
- Prone – face down on stomach
- Right/left lateral recumbent - side
- Fowler's – 45 - 60



Major Body Cavities

- Cranial
- Spinal
- Thoracic
- Abdominal
- Pelvic



Body Systems

- Body systems are dependent on each other to function properly.
- The heart, brain and lungs are vital organs essential for life.
- All systems must work well together to ensure body function.

DVD: Body Systems

Activity

You are called to a local shopping mall because an older woman has fallen after attempting to get off an escalator. Bystanders report that she fell approximately three steps from the bottom of the escalator. She is lying in the left lateral recumbent position. The right side of her face is bruised, and there is a small laceration over her right cheek that is oozing blood. She is complaining that her right hip and right side hurt and that she bumped her head when she fell to the ground.

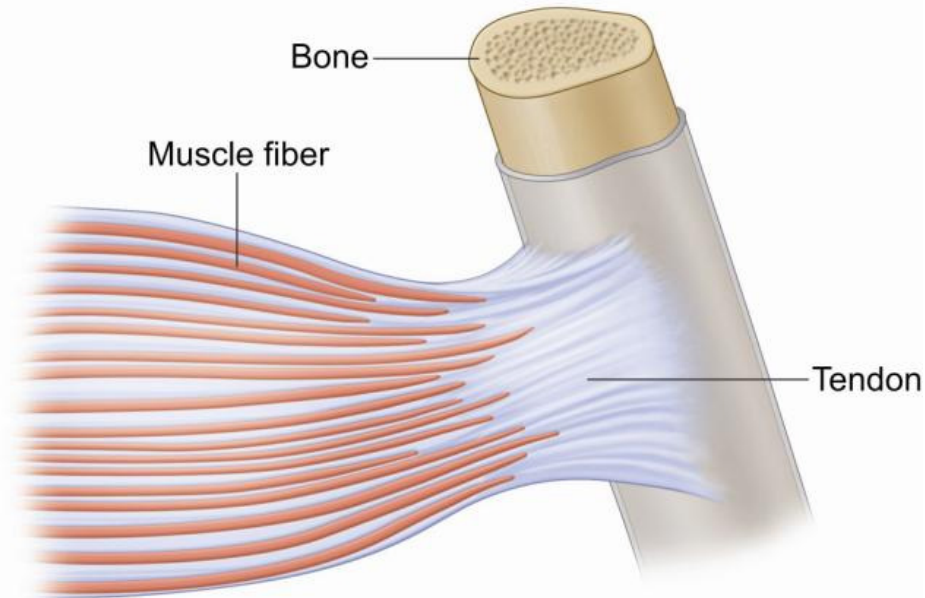
Identify the Body Systems that may be involved or affected.

Functions of the Musculoskeletal System

- Supports the body
- Protects internal organs
- Allows movement
- Stores minerals
- Produces blood cells
- Produces heat

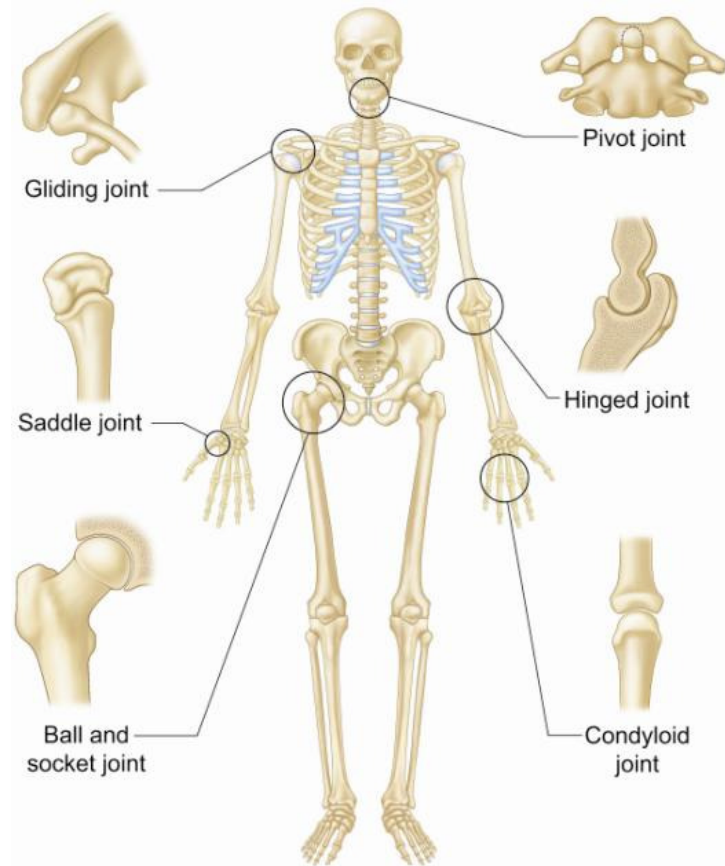
Types of Muscles

- Skeletal/voluntary
- Smooth/involuntary
- Cardiac



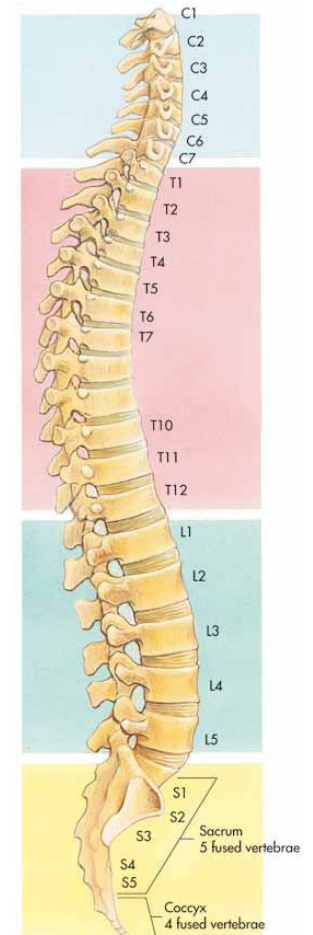
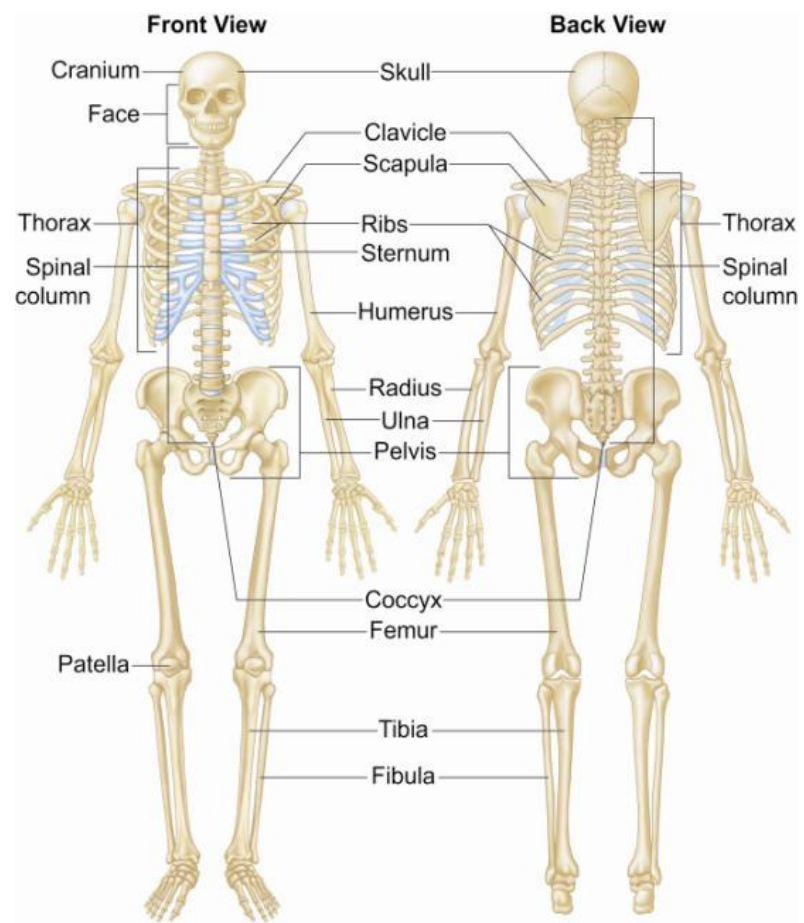
Types of Joints

- Ball-and-socket
- Hinged
- Pivot
- Gliding
- Saddle
- Condyloid



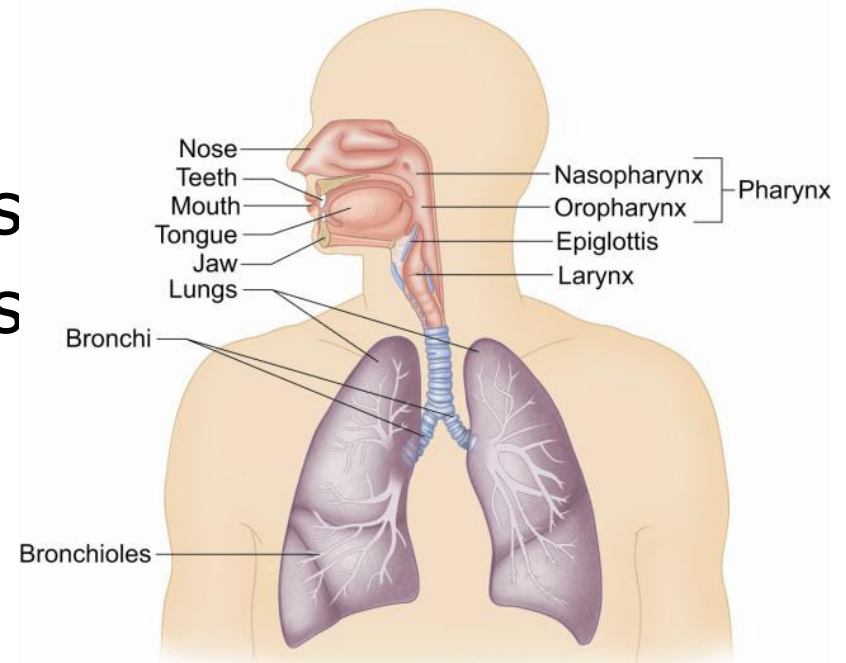
Six Sections of the Skeleton

- Skull
- Spinal column
- Thorax
- Pelvis
- Upper extremities
- Lower extremities



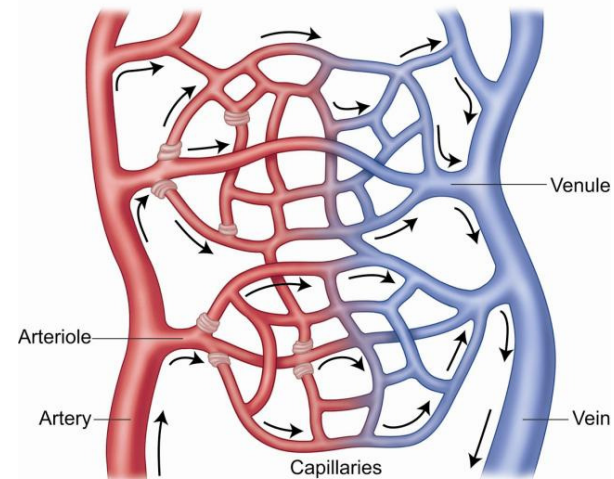
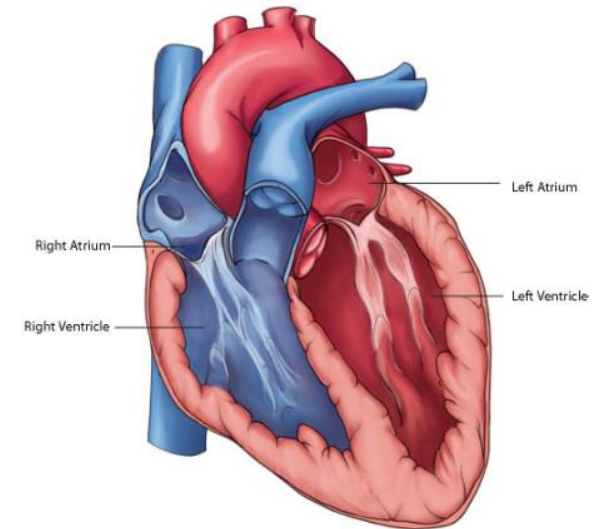
Respiratory System

- Structures
 - Upper airway structures
 - Lower airway structures
 - Supporting structures
 - Accessory muscles
- Functions
 - External respiration (ventilation)
 - Internal respiration
 - Gas exchange



Circulatory System

- Structures
 - Heart (right and left atria and ventricles)
 - Blood vessels (arteries, veins and capillaries)
 - Blood (red and white blood cells, platelets and plasma)
- Functions
 - Pulse/blood pressure
 - Perfusion
 - Blood clotting

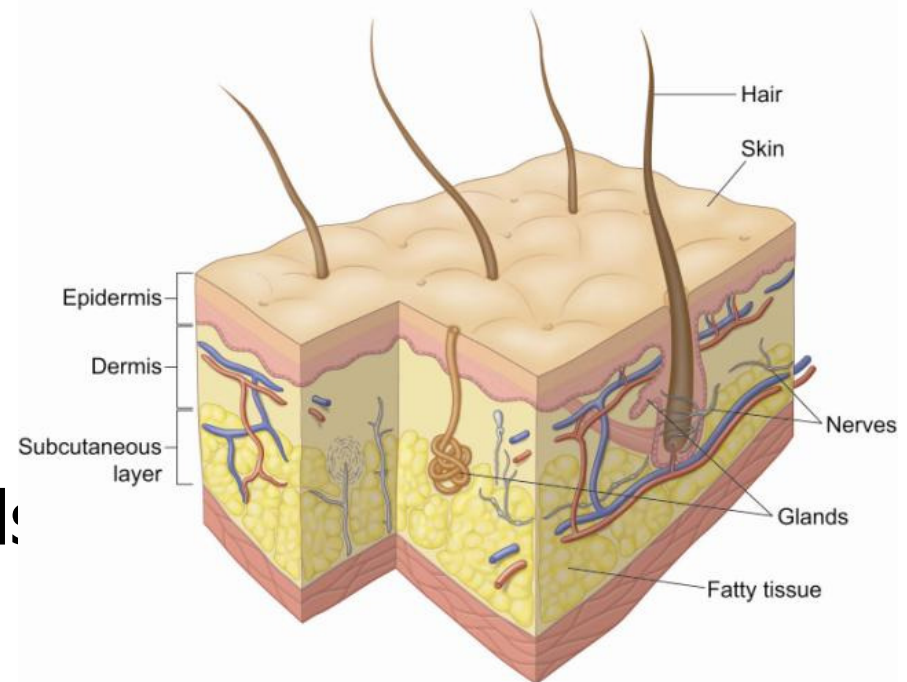


Nervous System

- Anatomical systems
 - Central nervous system (brain and spinal cord)
 - Peripheral nervous system (nerves)
- Functional systems
 - Voluntary system
 - Autonomic (involuntary) system
 - Sympathetic nervous system
 - Parasympathetic nervous system

Integumentary System

- Structures
 - Skin
 - Hair
 - Nails
 - Sweat and oil glands
- Functions
 - Regulation of fluid balance and body temperature
 - Vitamin D production; mineral storage

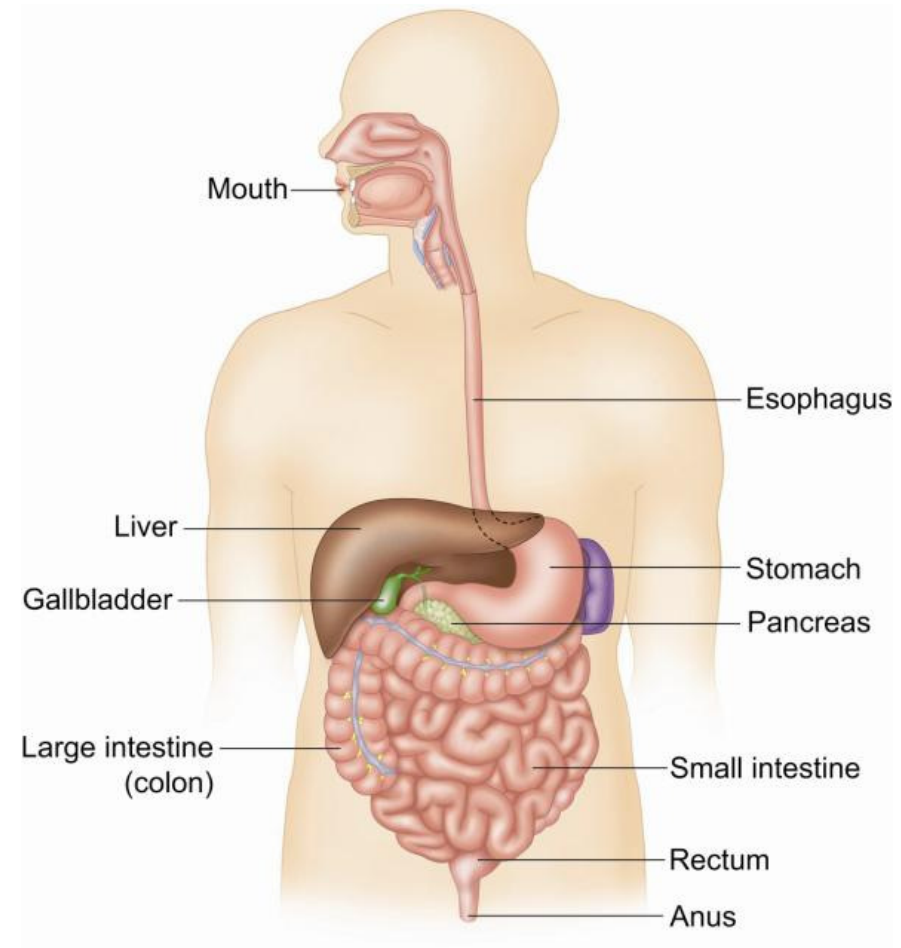


Endocrine System

- Structures
 - Ductless glands
- Functions
 - Control of blood glucose levels
 - Regulation of sympathetic nervous system
 - Regulation of water and electrolyte balance

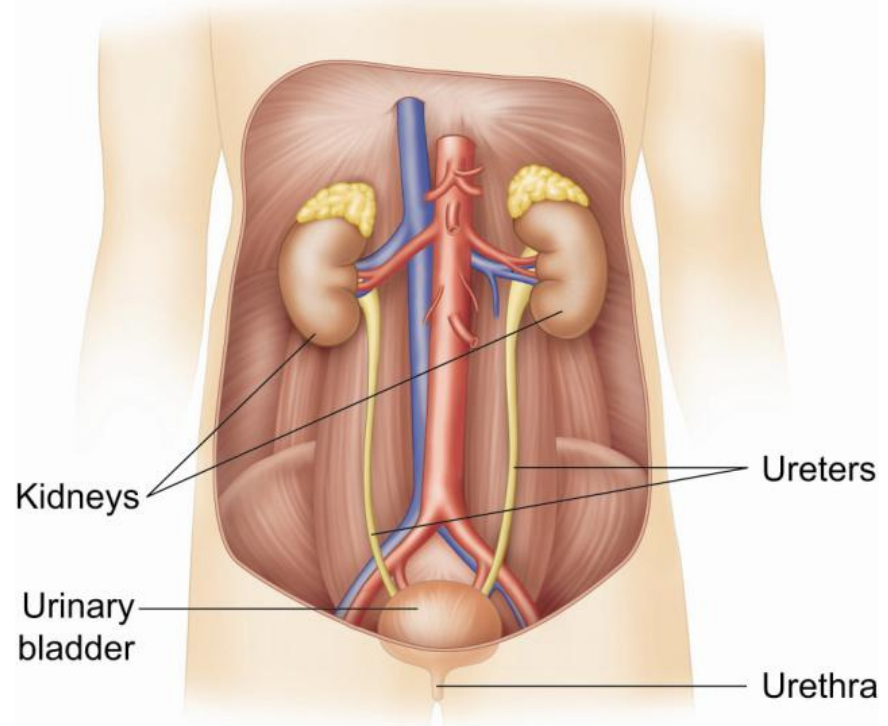
Digestive System

- Structures
 - Alimentary tract
 - Accessory organs
- Function
 - Digestion



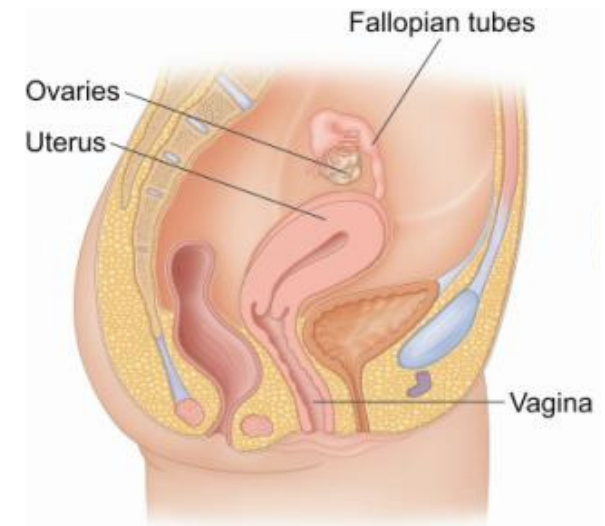
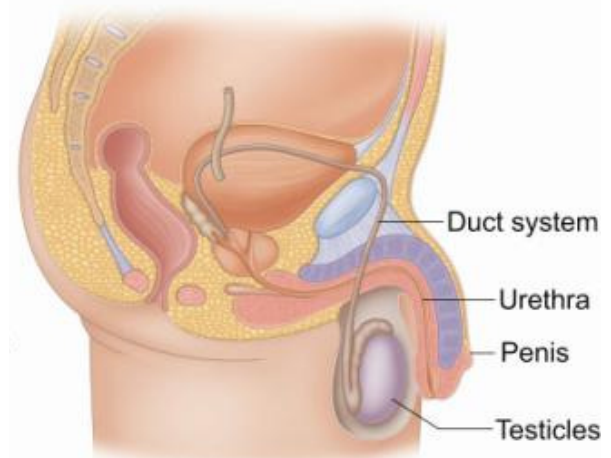
Urinary System

- Structures
 - Kidneys
 - Ureters
 - Bladder
 - Urethra
- Functions
 - Waste removal
 - Maintenance of fluid and electrolyte balance



Reproductive System

- Male reproductive structures
 - Testes
 - Duct system
 - Penis
- Female reproductive structures
 - Ovaries
 - Fallopian tubes
 - Uterus
 - Vagina



You Are the Emergency Medical Responder

As you get closer to the woman in the car, you see that she is clutching one side of her abdomen, just below the ribcage. Her passenger is holding his right hip and looks dazed. The woman in the minivan now exhibits shallow breathing and her pulse is weak.

What Body Systems are affected in this scenario?