

The Human Body

Topographical Anatomy- The superficial landmarks of the body that serve as guides to the structures that lie beneath them.

Anatomical Position- Position of the patient with them facing the examiner, arms at their side, and palms facing forward.

Left and Right- Refers to the patients left and right.

Midline- Imaginary line through the middle of the person's forehead through the nose and the umbilicus.

Mid-Axillary Line- vertical line from the mid-axilla downward separates the anterior chest from the posterior chest

Midclavicular- vertical line that runs through the middle of the clavicle parallel to the midline.

Anterior- the front surface

Posterior- the rear surface

Lateral- away from the midline

Medial-toward the midline

Superior- toward the head

Inferior-toward the feet

Dorsal- toward the spine, back

Ventral- toward the abdomen, front

Palmar-the front region of the hand

Plantar-the bottom of the foot

Proximal- referring to the extremities, closer to the trunk,

Distal- referring to the extremities, closer to the free end

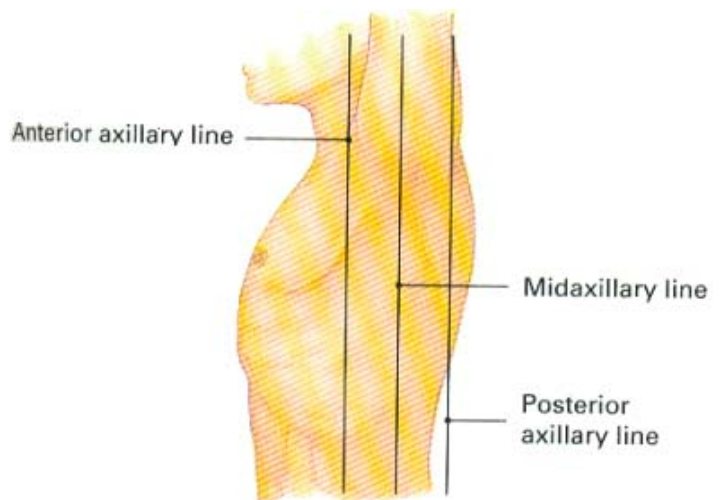
Superficial- on or closer to the skin's surface

Deep- further into the body away from the skin's surface

Apex- the tip or topmost portion of a structure

Bilaterally- both sides

Quadrants - a way to describe the sections of the abdomen; Two imaginary lines intersecting at the umbilicus. (RUQ, LUQ, RLQ, LLQ)



Body Regions

Head- skull, face

Torso- thorax, abdomen, pelvis

Lower Extremities- thigh, knee, leg, ankle, foot

Upper Extremities- shoulder, arm, elbow, forearm, wrist, hand

Anatomic Positions

Prone- lying horizontal with the face downward, on the stomach

Supine- lying horizontal with the face upward, on the back

Fowler's Position- elevation of the head of the bed, usually 45° or more with the patient supine

Semi-Fowler's Position- elevation of the head of the bed less than 45° with the patient supine

Trendelenburg Position- lying supine with the feet elevated higher than the head

Shock Position- or modified Trendelenburg, lying supine with the feet elevated 6" to 12"

Body Systems

Skeletal System

- Gives the body shape
- Protects vital internal organs
- Provides for locomotion
- Consists of 206 bones

Skull

- Cranium- several bones fused together to create a protective shell for the brain
- Foramen Magnum- large hole at the base of the skull where the spinal cord exits
- Occipit-posterior portion of the skull
- Temporal region-lateral portions of the skull
- Parietal region- area between the temporal and the occipit regions
- Maxillae- upper jawbone
- Mandible- lower jawbone
- Zygomas-cheek bone
- Orbit- eye socket
- Pinna- Visible portion of the ear

Neck

- Trachea- windpipe
- Adam's Apple- firm prominence on the center of the anterior surface
- Cricothyroid Membrane- soft depression on the cricoid cartilage

Spinal Column

- Consists of 33 bones, 5 regions
 - Cervical (C1-C7)
 - Thorax (T1-T12)
 - Lumbar (L1-L5)
 - Sacrum (S 1 -S5) fused together to appear to be one
 - Coccyx (C1-C4) fused together to appear to be one
- Spinal cord passes through the vertebra

Ribs

- 12 pair-10 true, 2 false or floating
- Provides a protective cage for heart, lungs, liver, spleen
- Attached posterior to the spinal column
- Attached anterior to the Sternum
- Xiphoid Process-"sharp" bony tip on the sternum

Pelvis

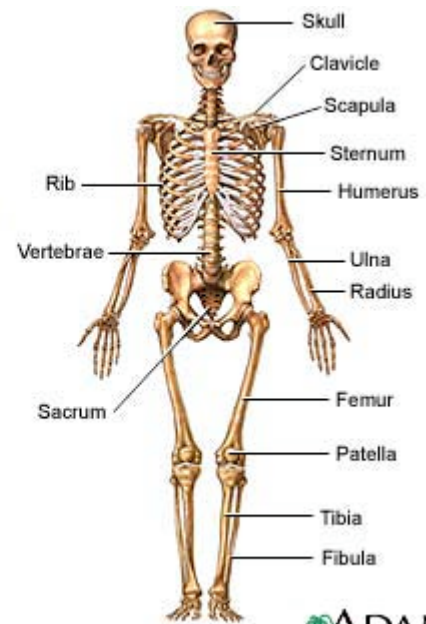
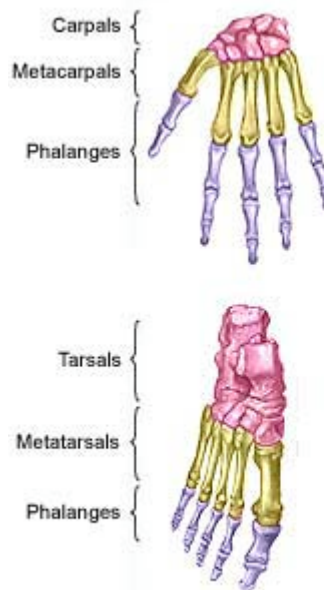
- Three bones fused together to form a protective ring
- Ilium
- Ischium
- Pubis
- Protects reproductive organs
- Acetabulum-depression where the femoral head attaches to the pelvis (hip joint)

Lower Extremity

- Hip
- Femur
- Patella
- Tibia
- Tarsals
- Metatarsals
- Phalanges
- Calcaneus

Upper Extremity

- Clavicle
- Acromioclavicular (A/C) joint
- Sternoclavicular joint
- Humerus
- Scapula
- Radius
- Ulna
- Carpals
- Metacarpals
- Phalanges



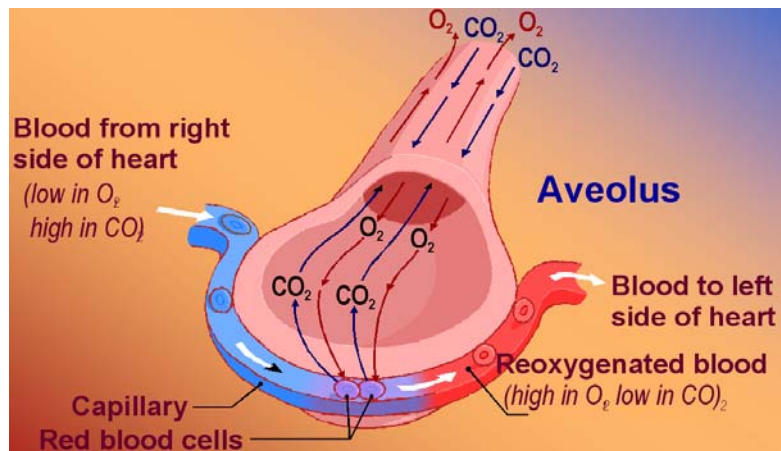
ADAM.

Musculoskeletal System

- Gives the body shape
- Protects vital internal organs
- Provides for locomotion
- Three types of muscle
 - Skeletal —(striated) voluntary
 - Cardiac - heart- involuntary
 - Smooth - involuntary

Respiratory System

- Responsible for gas exchange in the body
- Upper airway
 - Nasopharynx
 - Pharynx
 - Oropharynx
 - Mouth
 - Epiglottis
- Lower airway
 - Carina
 - Larynx
 - Trachea
 - Alveoli
 - Bronchi
- Diaphragm
- Lungs-5 lobes 2 on left, 3 on right



Adequate Breathing/Inadequate Breathing

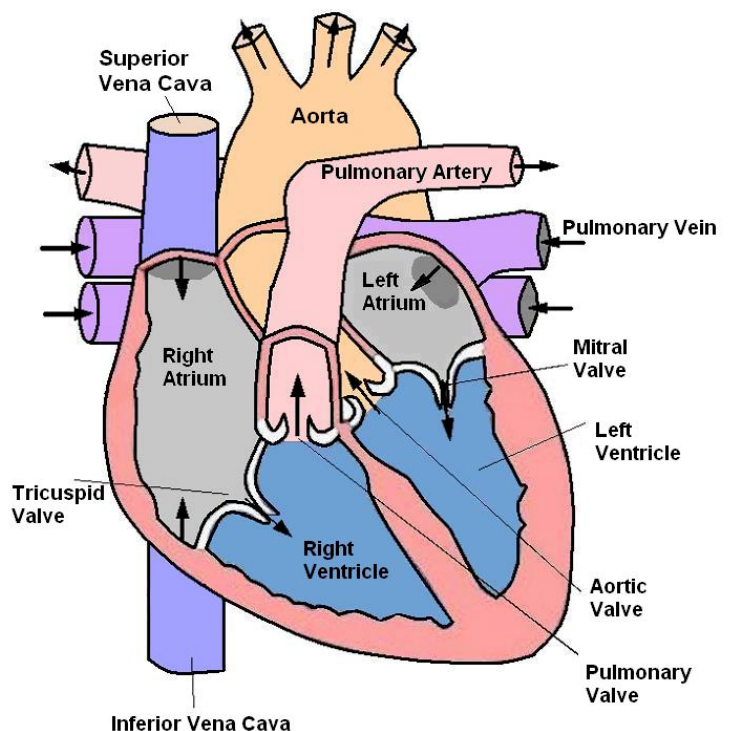
- Rate
 - Adult 12-20 / minute
 - Child 15-30 / minute
 - Infant 25-50 / minute
- Rhythm
 - Regular
 - Irregular
- Quality
 - Breath Sounds
 - Chest expansion
 - Effort of Breathing
 - Depth

Circulatory System

➤ Heart

4 Chambers

- Right Atrium- blood from body
- Right Ventricle- blood to lungs
- Left Atrium- blood from lungs
- Left Ventricle- blood to body



Vessels of Circulation

- Arteries- Aorta, Coronary, Pulmonary. Carotid, Femoral, Radial, Brachial. (under pressure)
- Arterioles
- Capillary
- Venules
- Vein- Pulmonary, Vena Cava

Cardiac Conduction System

- Network of specialized tissue that conducts electrical current throughout the heart
- Produce the pumping action of the heart

Composition of Blood

- Red Blood Cells- erythrocytes, hemoglobin (gives Color)
- White Blood Cells-leukocytes
- Plasma
- Platelets

Nervous System

- Central nervous system
- Brain, Spinal cord
- Controls all basic body functions
- Responds to external stimuli
- Peripheral nervous system
- Complex network of motor and sensory nerves

Endocrine System

- Secreted regulatory hormones
 - Insulin
 - Adrenalin

Skin-largest organ of the body

- Protects body from environment, bacteria and other organisms
- Regulates body temperature
- Senses environmental changes
- Waterproof barrier
- Layers of the skin
 - Epidermis
 - Dermis
 - Subcutaneous layer

Digestive System- responsible for the digestion of food and nourishment of the body

Urinary System-responsible or the discharge of waste material filtered out of the blood stream

Reproductive System-Controls the reproductive processes by which life is created

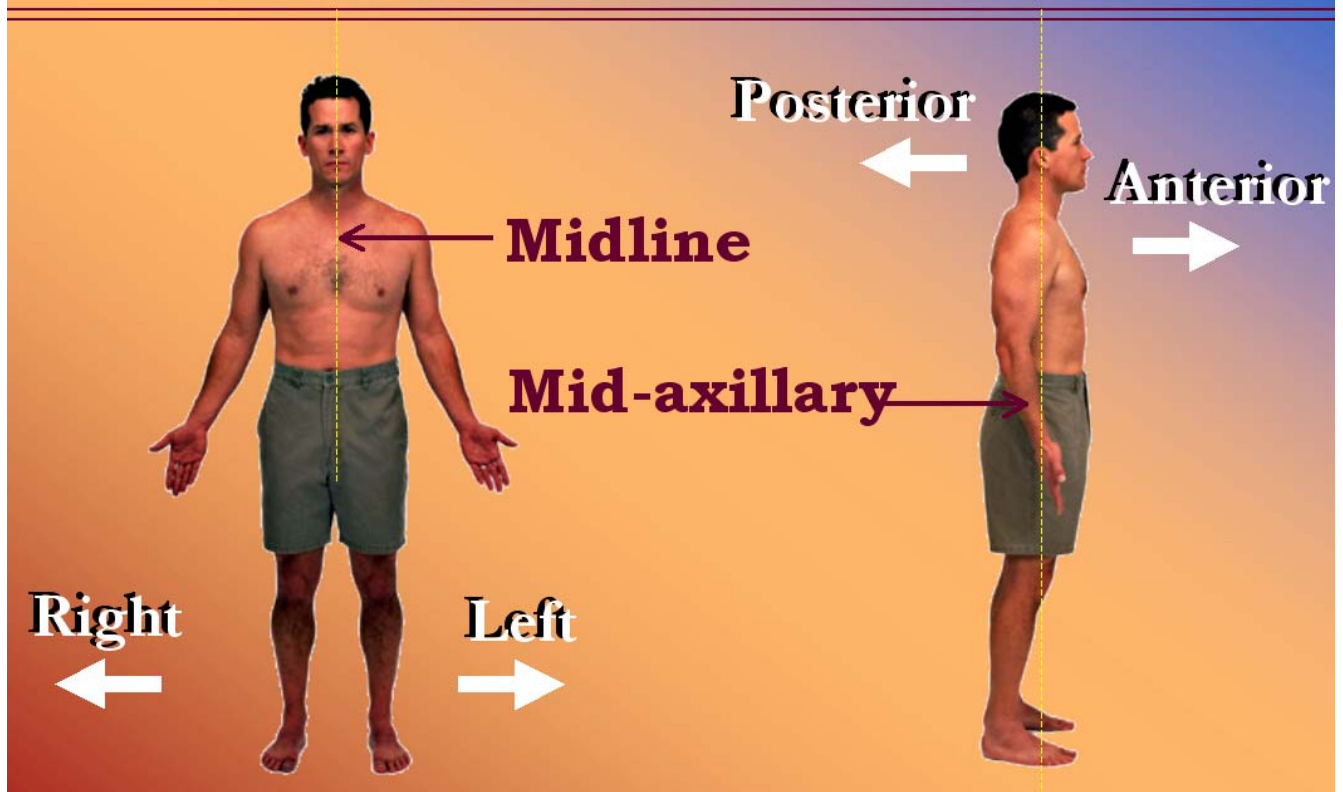
Normal Anatomic Position

**Person standing,
facing forward**

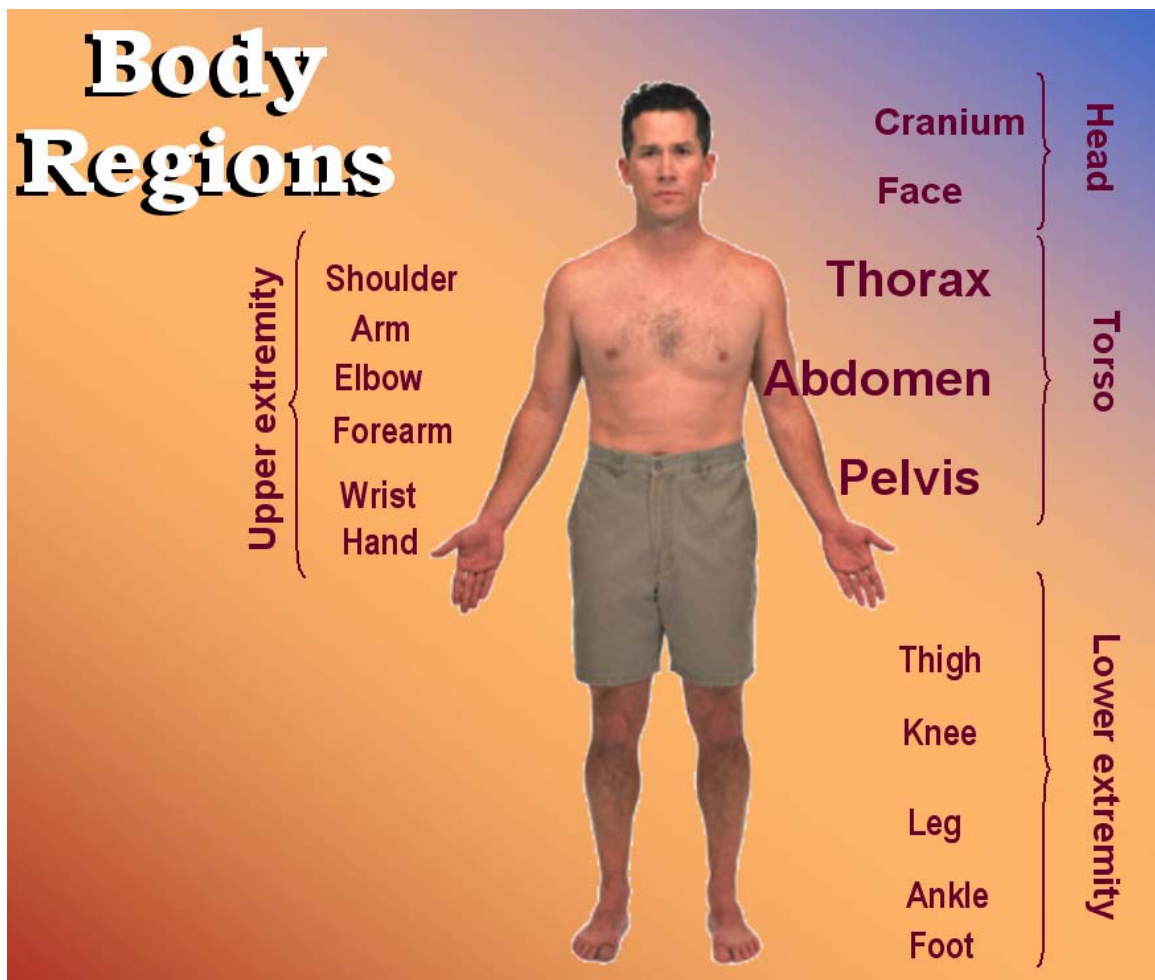
**Palms facing
forward**



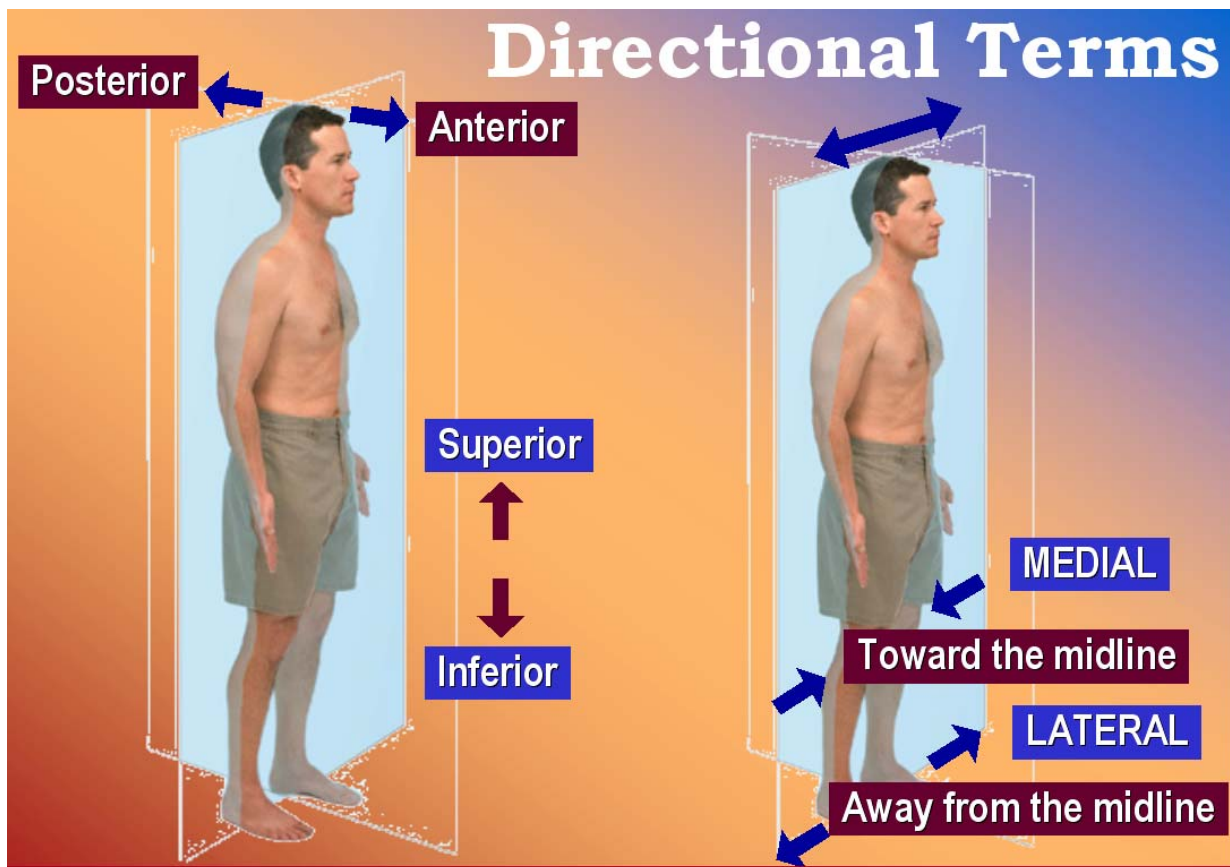
Anatomical Planes

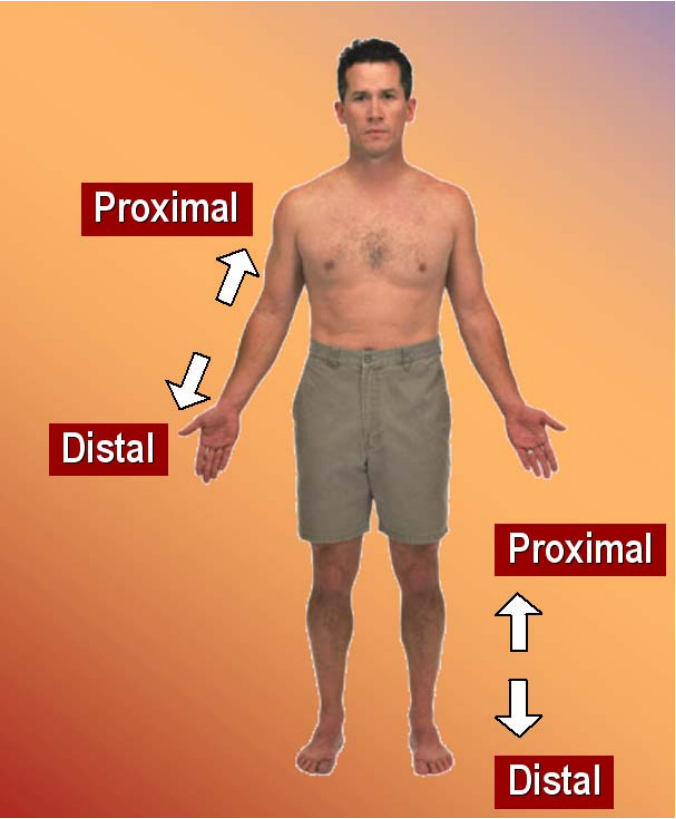


Body Regions



Directional Terms







Supine Position



Prone Position



Fowler's Position

Trendelenburg Position

