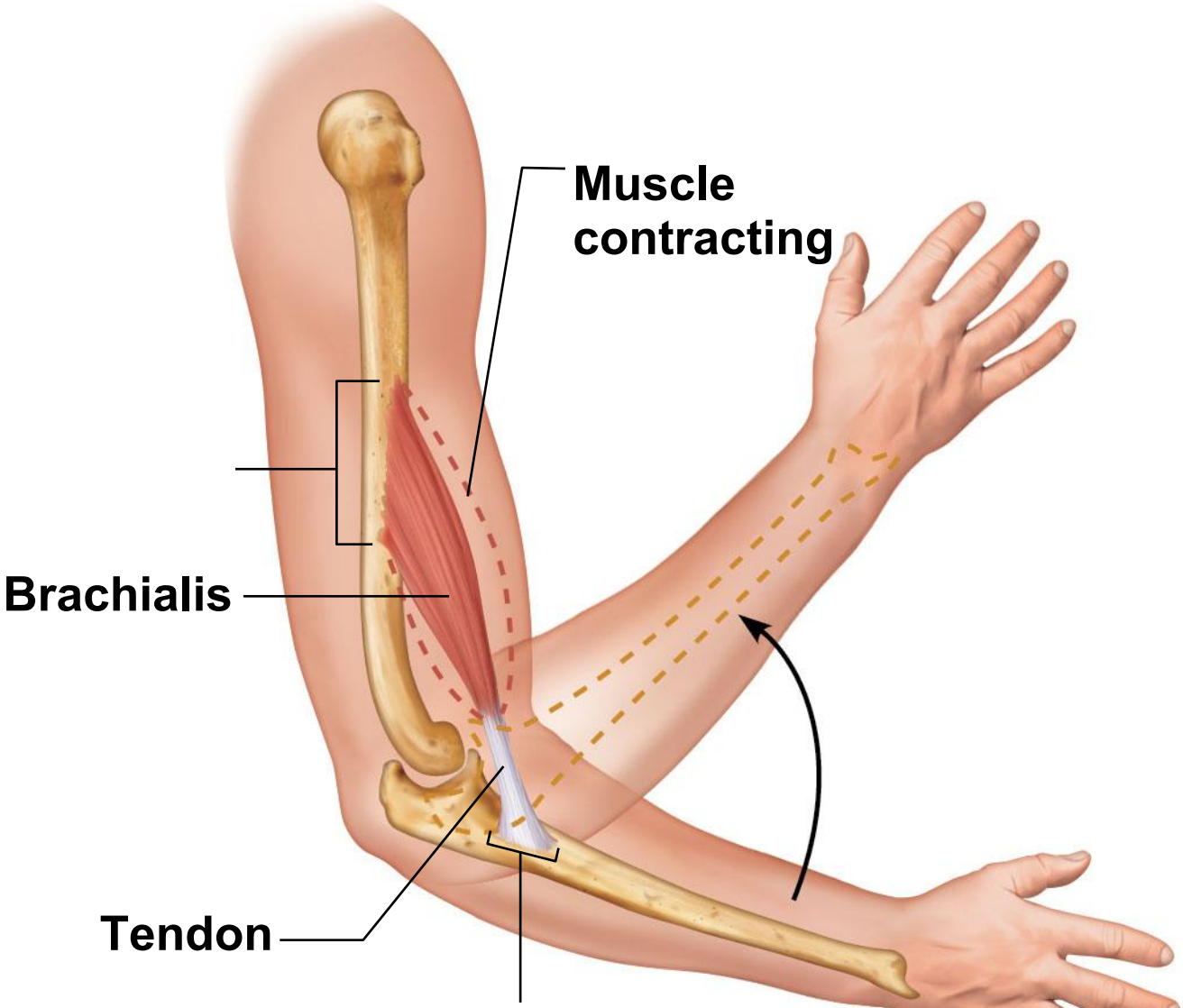
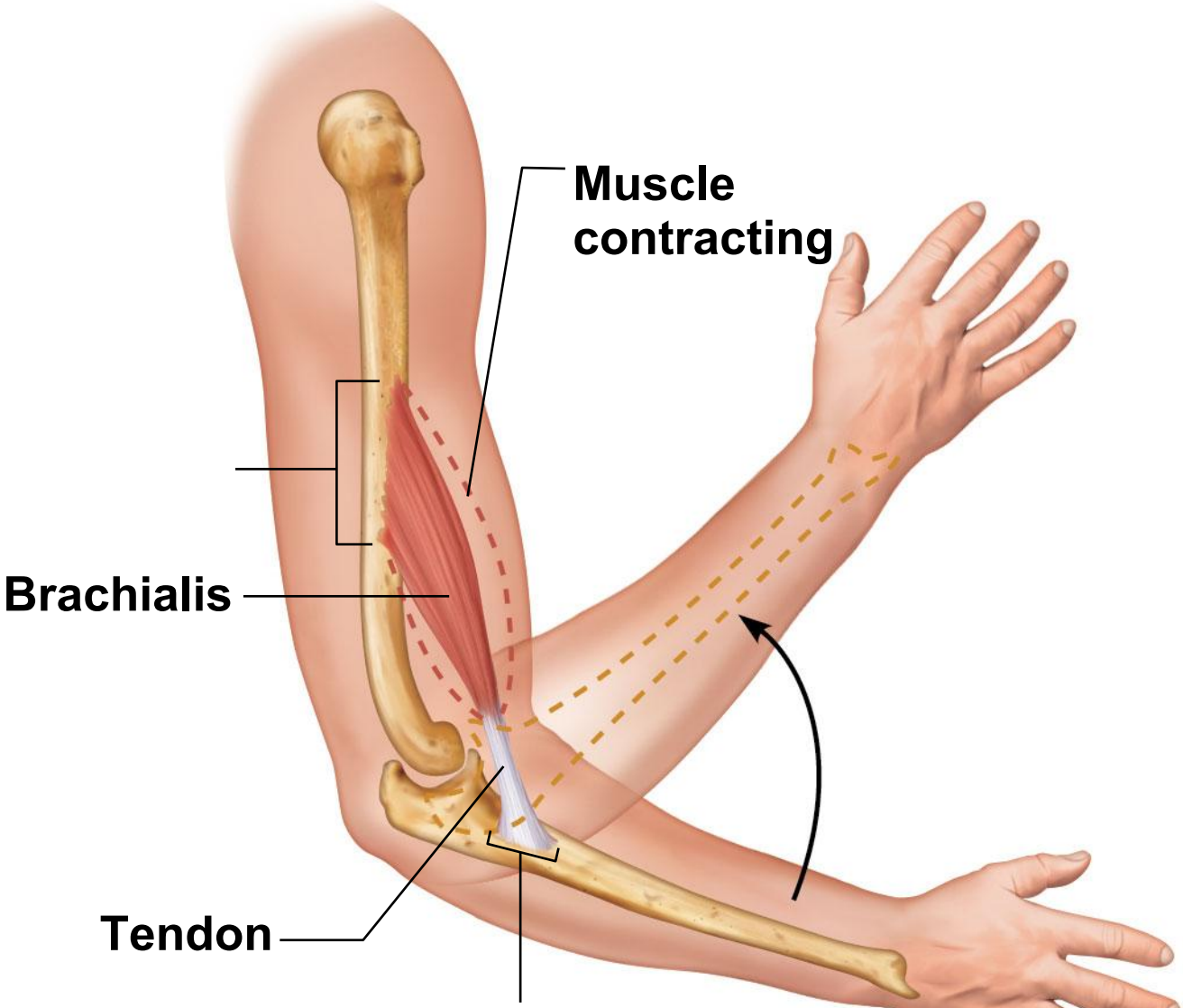
Skeletal Muscular Movements

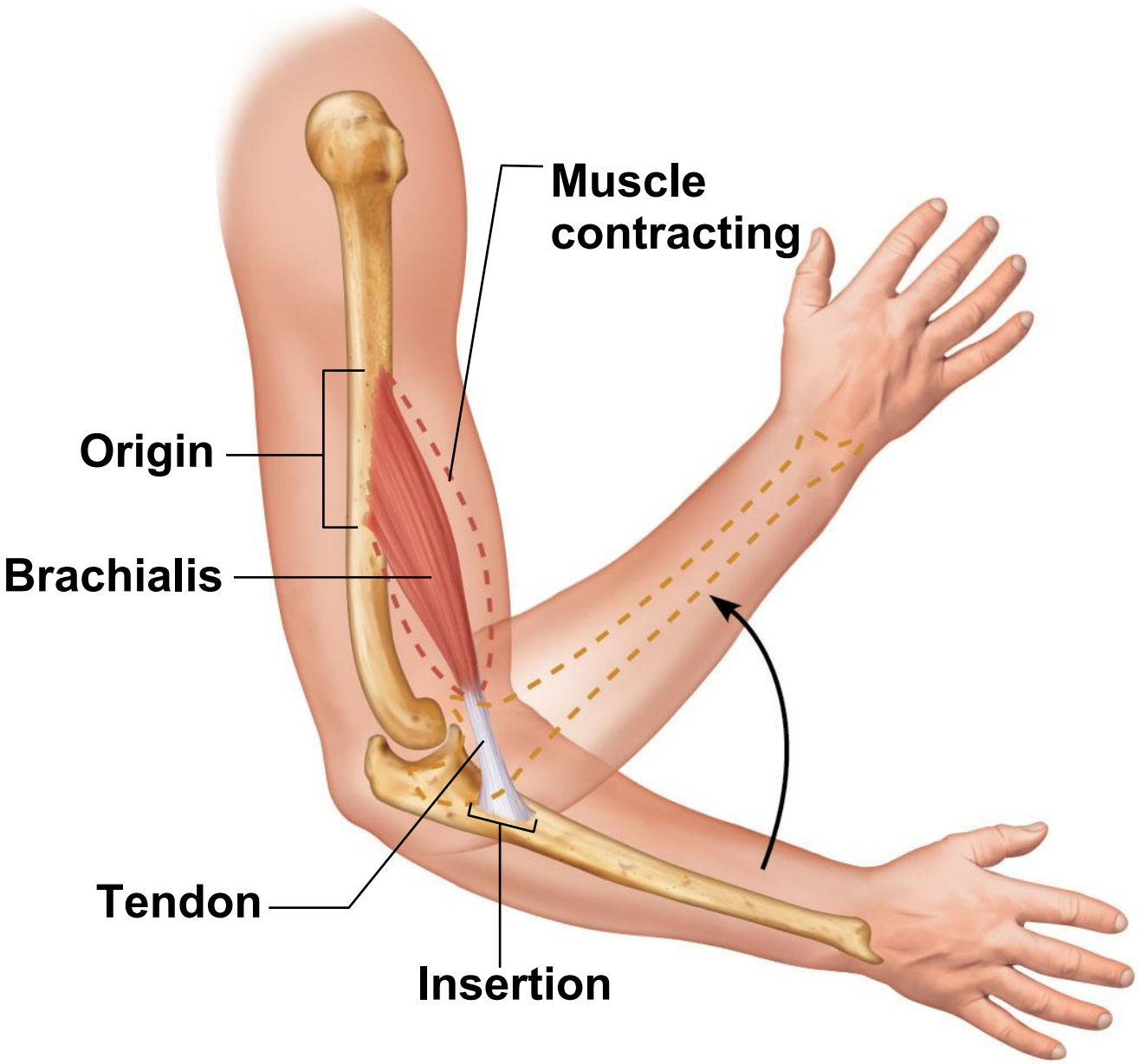
- The type of movement at any joint depends on **the muscle, the origin and insertion points, the shapes of the bones involved, and the joint type**
- Muscles are attached to no fewer than two points
  1. Origin: **attachment to an immovable or less movable bone**
  2. Insertion: **attachment to a movable bone**
- When the muscle contracts, **the insertion moves toward the origin**

Label the origin on the figure below.



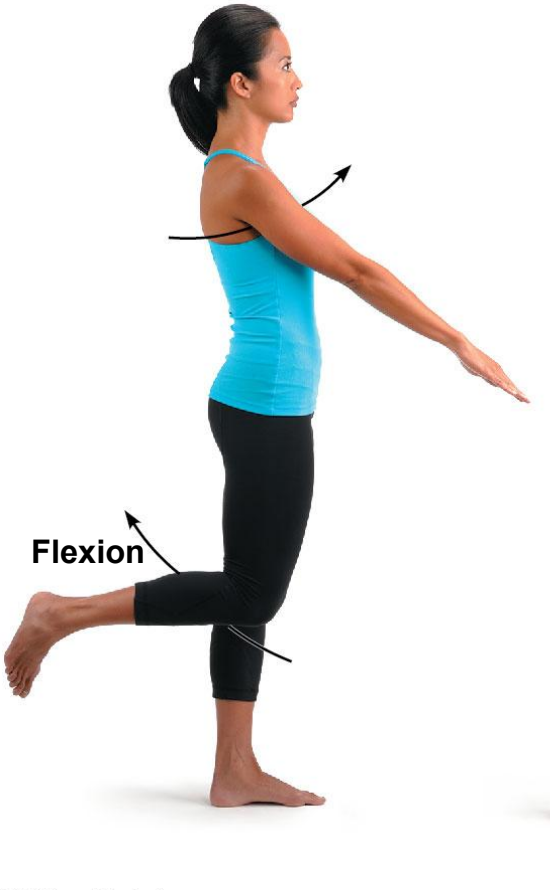
Label the insertion on the figure below.




Muscle contracting
Origin
Brachialis
Tendon
Insertion

Types of Body Movements

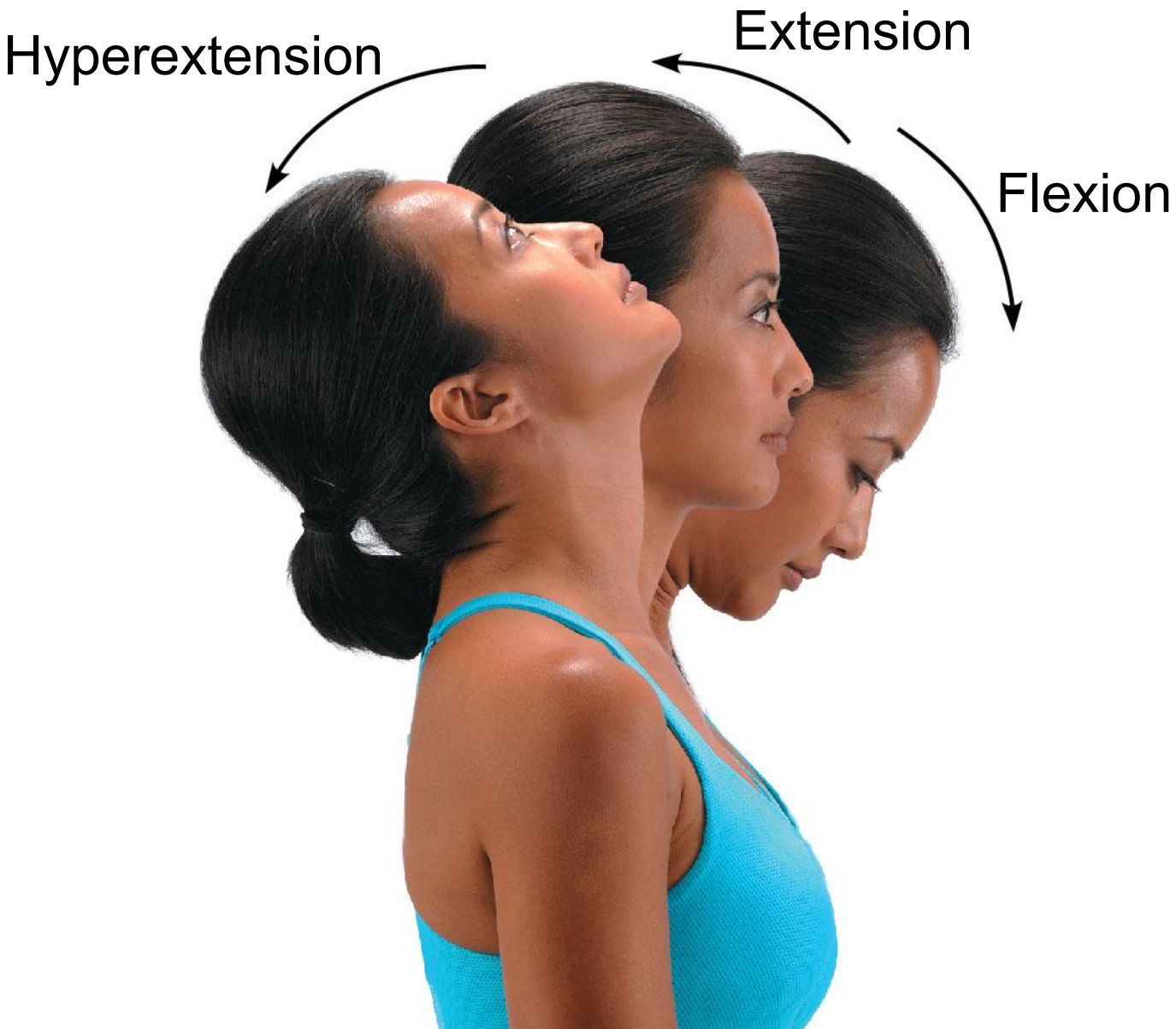
- **Flexion**
  - **Decreases** the angle of the joint
  - Brings two bones **closer together**
  - Typical of **bending hinge joints** (knee and elbow) or **ball-and-socket joints** (hip)



Types of Body Movements

- **Extension**
  - Opposite of flexion
  - **Increases** angle between two bones
  - Typical of **straightening the elbow or knee**
  - Extension beyond 180º is called **hyperextension**

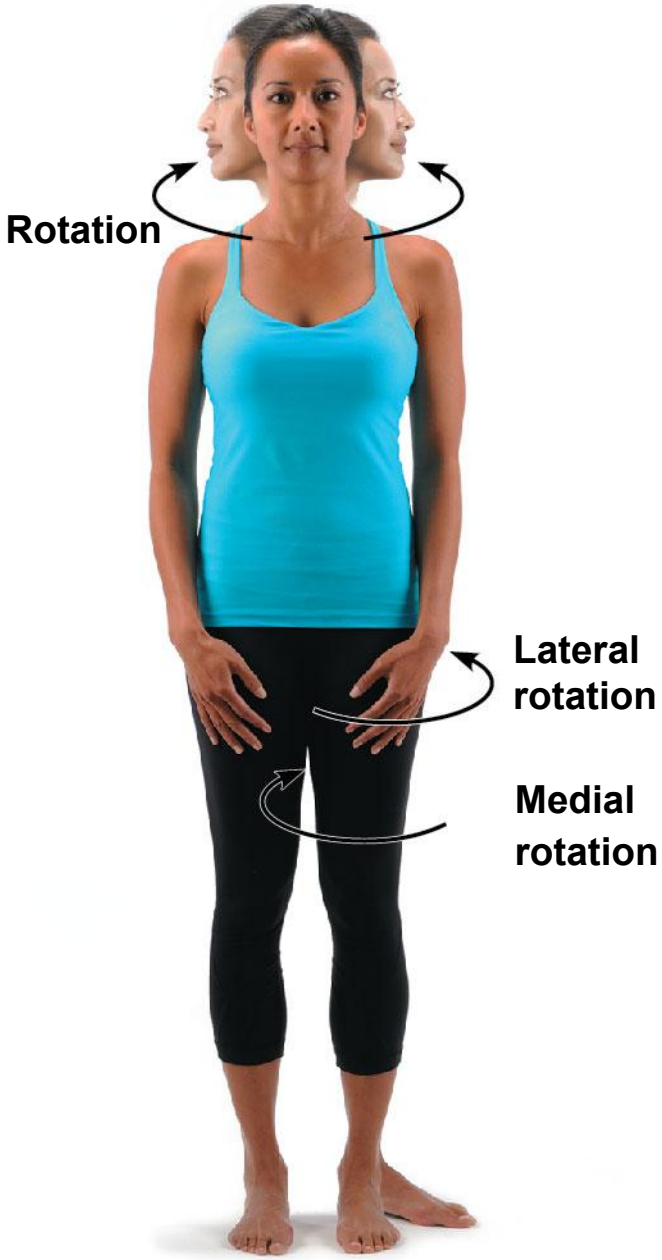
Label each movement arrow as flexion, extension, or hyperextension.


Hyperextension
Extension
Flexion

Types of Body Movements

- **Rotation**
  - Movement of a bone **around its longitudinal axis**
  - Common in **ball-and-socket joints**
  - Example: moving the atlas around the axis (shaking your head “no”)

Label each movement arrow as lateral rotation or medial rotation.


Rotation
Lateral rotation
Medial rotation

Types of Body Movements

- **Abduction**
  - Movement of a limb **away from the midline**
- **Adduction**
  - Opposite of abduction
  - Movement of a limb **toward the midline**

Types of Body Movements

- **Circumduction**
  - Combination of **flexion, extension, abduction, and adduction**
  - Common in **ball-and-socket joints**
  - **Proximal end of bone is stationary, and distal end moves in a circle**

Circumduction

Types of Body Movements

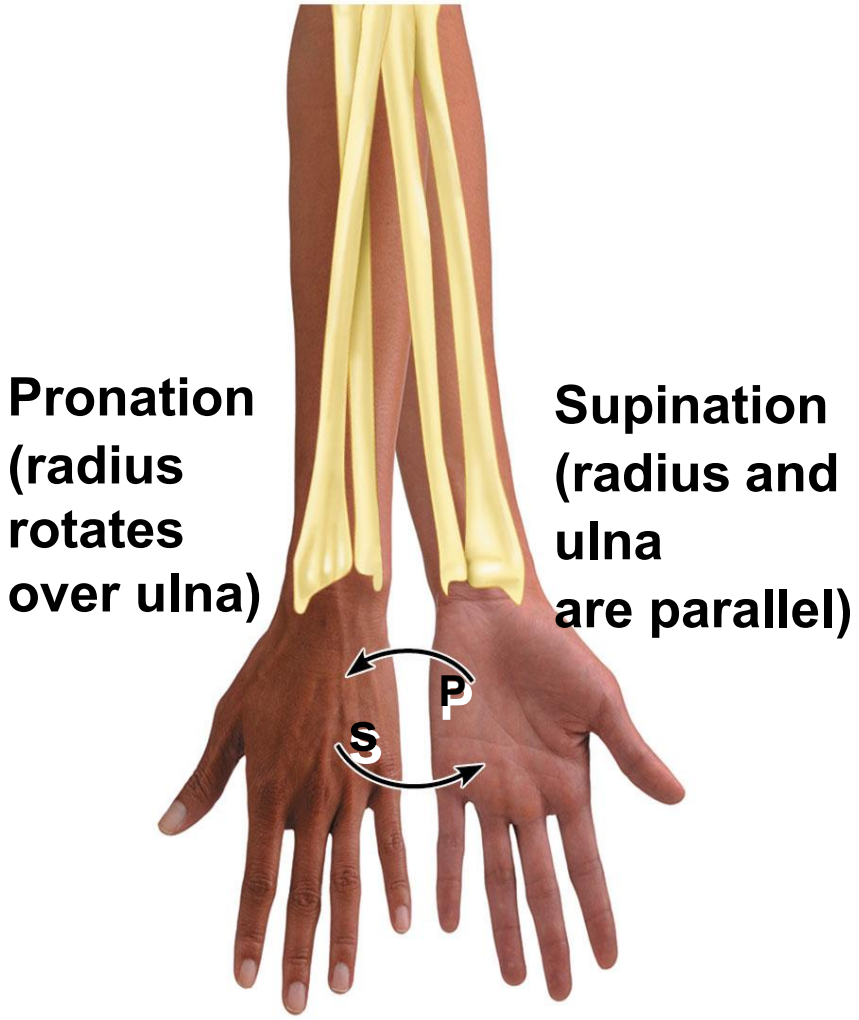
- **Dorsiflexion**
  - **Lifting the foot so that the superior surface approaches the shin**
- **Plantar flexion**
  - Opposite of dorsiflexion
  - **Pointing the toes away from the head**

Types of Body Movements

- **Inversion**
  - Turning sole of foot **medially**
- **Eversion**
  - Opposite of inversion
  - Turning sole of foot **laterally**

Types of Body Movements

- **Supination**
  - Forearm rotates **laterally** so palm faces **anteriorly**
  - Radius and ulna are **parallel**
- **Pronation**
  - Forearm rotates **medially** so palm faces **posteriorly**
  - Radius and ulna **cross each other like an X**



Types of Body Movements

In anatomical position, are the radius and ulna pronated or supinated?

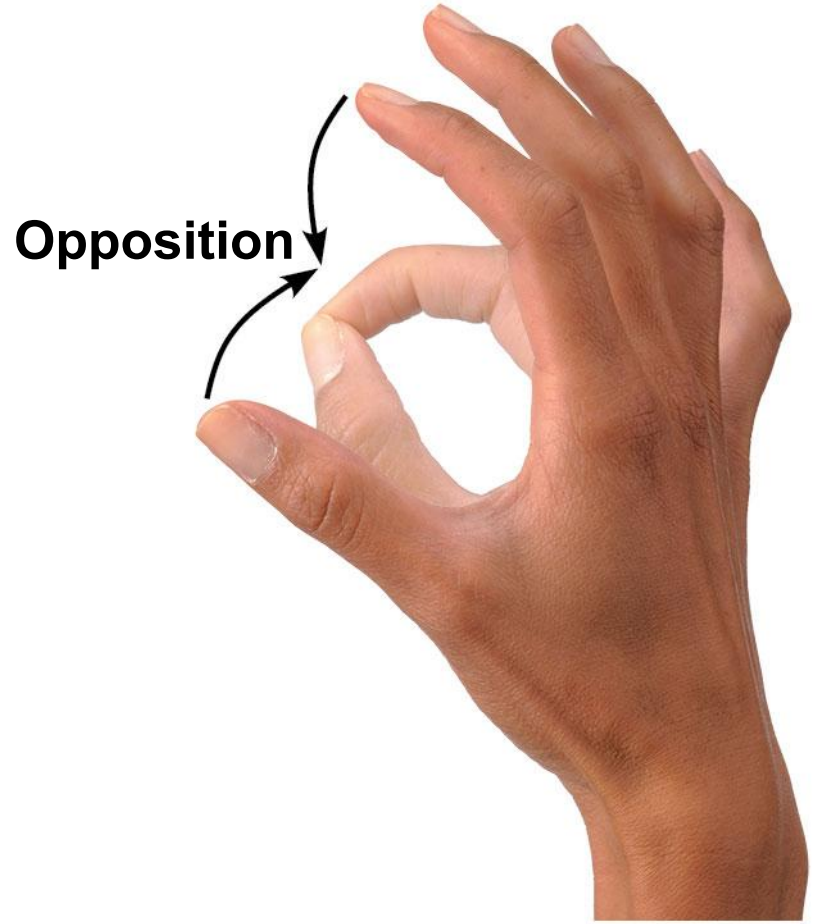
In anatomical position, the radius and ulna are supinated.

s**up**ination = palms **up**

pr**on**ation = palms **on**

Types of Body Movements

- **Opposition**
  - **Moving the thumb to touch the tips of other fingers on the same hand**



Exit Ticket:

Label the movement arrows. (1 movement)

Exit Ticket:

Label the movement arrows. (1 movement)

Opposition

Exit Ticket:

Label the movement arrows. (2 different movements)

Exit Ticket:

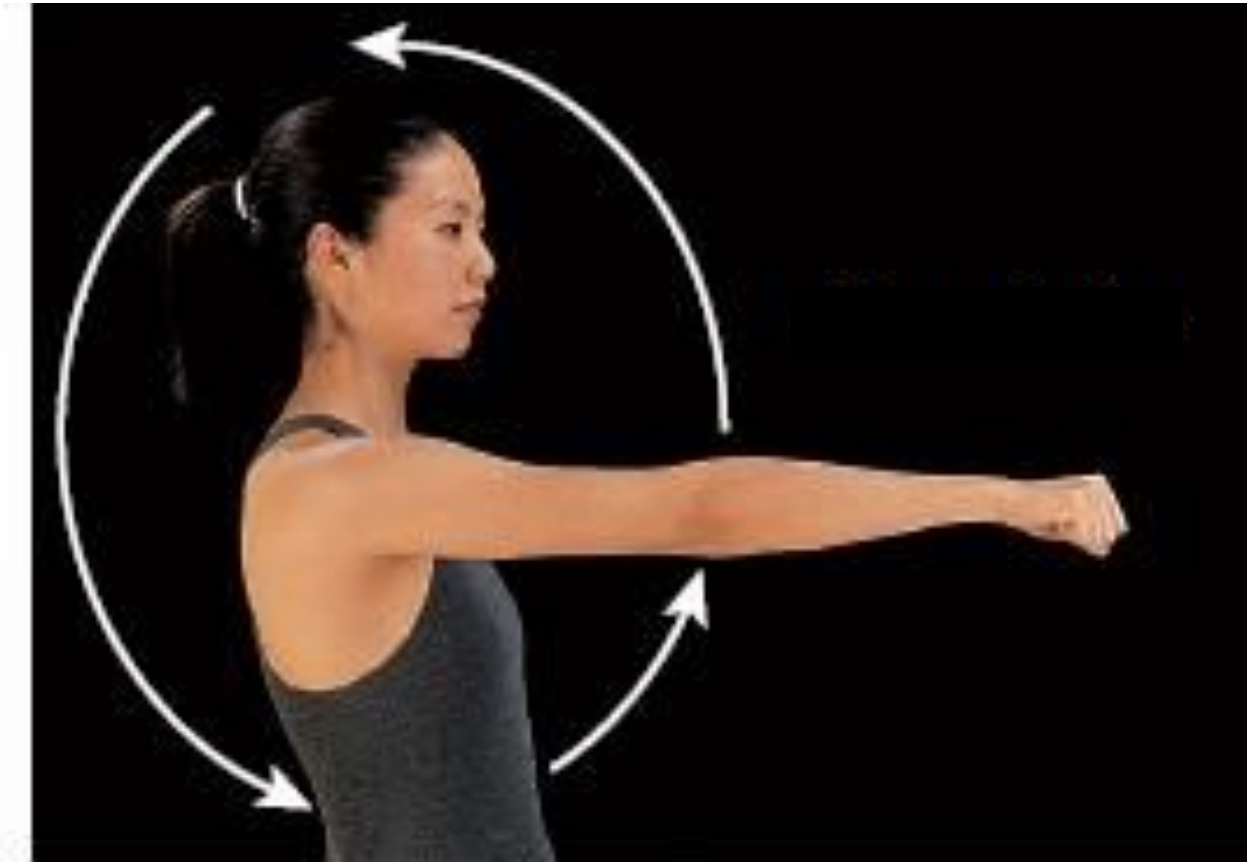
Label the movement arrows. (2 different movements)

Dorsiflexion

Plantar flexion

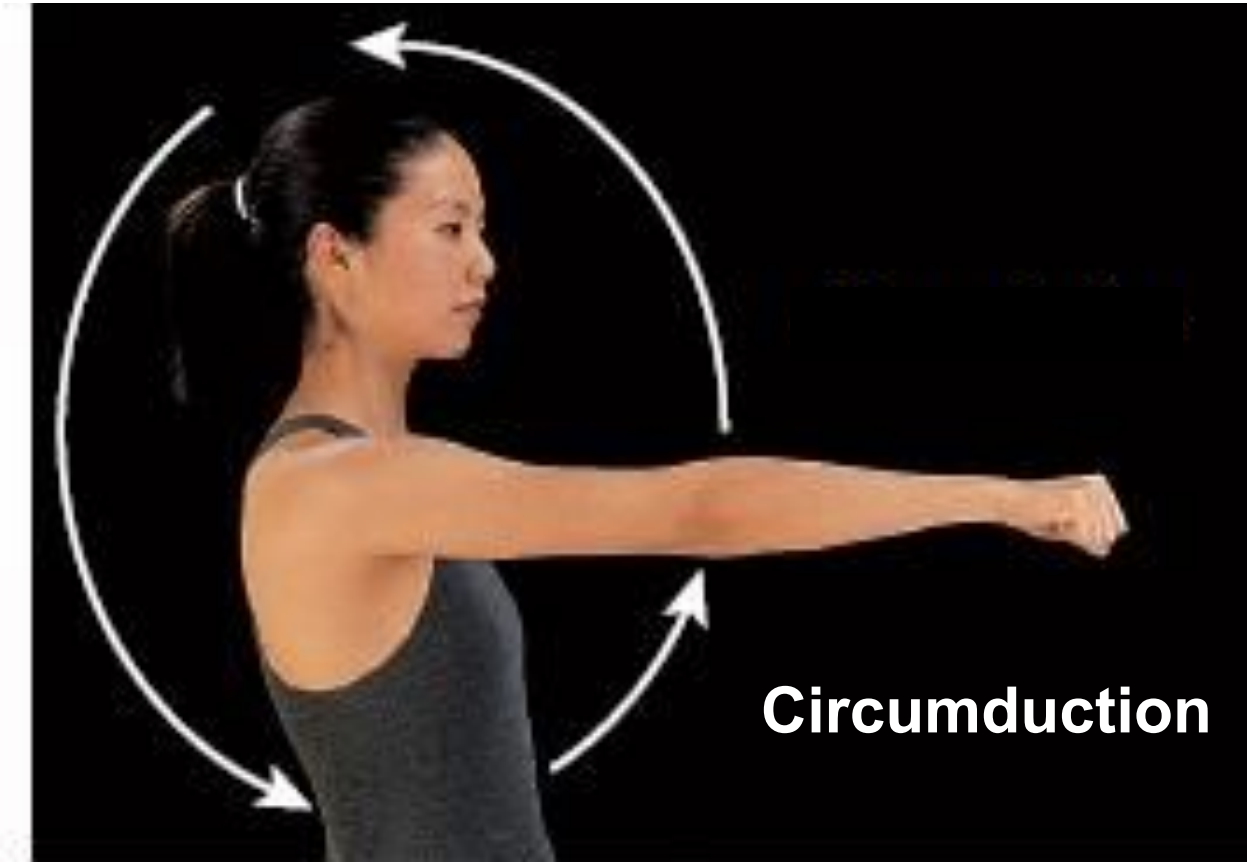
Exit Ticket:

Label the movement arrows. (1 movement)



Exit Ticket:

Label the movement arrows. (1 movement)



Exit Ticket:

Label the movement arrows. (2 different movements)

Exit Ticket:

Label the movement arrows. (2 different movements)

Inversion

Eversion

Exit Ticket:

Label the movement arrows. (2 different movements)

Exit Ticket:

Label the movement arrows. (2 different movements)