

Muscle Movements, Types and Names

Chapter 6

Objectives

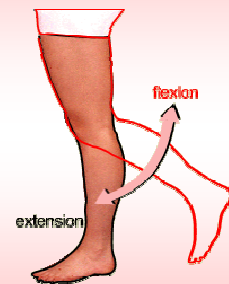
1. Define origin, insertion, prime mover, antagonist, synergist and fixator as they relate to muscles.
2. Identify the different types of body movements
3. List some of the criteria for naming muscles

BODY MOVEMENTS

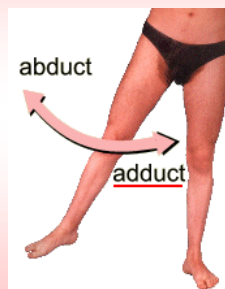
- MUSCLES ARE ATTACHED TO BONE OR CONNECTIVE TISSUE AT NO LESS THAN 2 POINTS
- **ORIGIN** – ATTACHED TO THE IMMOVABLE OR LESS MOVABLE BONE
- **INSERTION** – ATTACHED TO THE MOVABLE BONE
- DURING CONTRACTION THE INSERTION MOVES TOWARD THE ORIGIN

TYPES OF BODY MOVEMENTS

- **FLEXION** – DECREASES ANGLE BETWEEN BONES
- **EXTENSION** – INCREASES ANGLE BETWEEN BONES
- **HYPEREXTENSION** – GREATER THAN 180 DEGREES



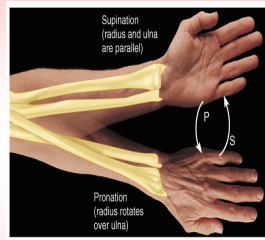
- **ABDUCTION** – MOVE AWAY FROM THE MIDLINE
- **ADDUCTION** – MOVE TOWARD MIDLINE



- **ROTATION** – MOVEMENT OF BONE AROUND A LONGITUDINAL AXIS
- **CIRCUMDUCTION** – PROXIMAL END STATIONARY WHILE DISTAL END MOVES IN A CIRCLE

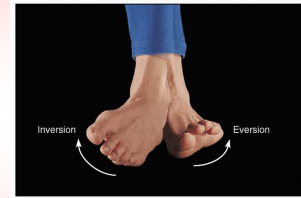


- **PRONATION** – MOVING HAND FROM ANTERIOR TO POSTERIOR POSITION (RADIUS OVER ULNA)
- **SUPINATION** – HAND FROM POSTERIOR TO ANTERIOR (RADIUS AND ULNA PARALLEL)



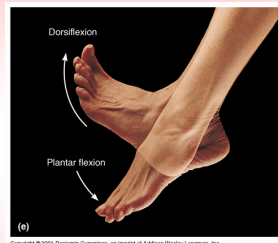
(a) Supination (S) and pronation (P)
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- **INVERSION** – SOLE OF FOOT TURNED MEDIALY
- **EVERSION** – SOLE OF FOOT TURNED LATERALLY



(b) Inversion and eversion
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- **DORSIFLEXION** – INSTEP OF FOOT MOVED UP TOWARD SHIN (STANDING ON HEELS)
- **PLANTAR FLEX** – TOES POINTED DOWNWARD



(c)

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Link for muscle movement

<http://www.zoology.ubc.ca/~biomania/tutorial/mvmt/mv02.htm>

Types of Muscles

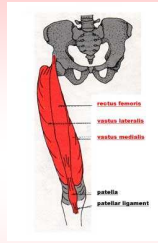
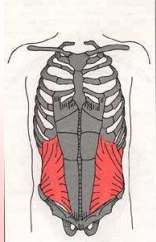
- **Prime mover** – responsible for movement in muscle group
- **Antagonist**- oppose or reverse a movement
 - When a prime mover is active its antagonist is relaxed
 - ex: biceps and triceps

- **Synergists**- stabilize a joint when muscle crosses 2 or more joints
- **Fixators**- hold a bone still or stabilize prime mover origin.

CRITERIA FOR NAMING MUSCLES

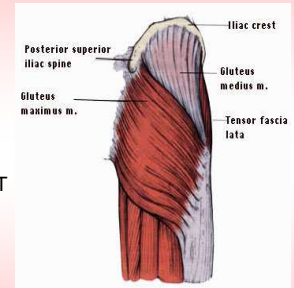
- **DIRECTION OF MUSCLE FIBERS**

- RECTUS – STRAIGHT
- OBLIQUE - DIAGONALLY



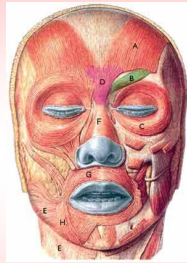
- **RELATIVE SIZE**

- MAXIMUS – LARGEST
- MINIMUS – SMALLEST
- LONGUS – LONGEST
- BREVIUS - SHORT



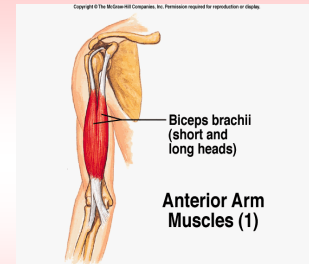
- **LOCATION – ASSOCIATION WITH BONE**

- FRONTALIS
- TEMPORALIS



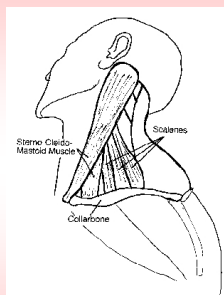
- **NUMBER OF ORIGINS**

- BICEPS – 2
- TRICEPS – 3
- QUADRACEPS - 4



- **LOCATION OF ORIGIN & INSERTION**

- STERNOCLEIDOMASTOID
- ORIGIN ON STERNUM & CLAVICLE AND INSERTS ON MASTOID PROCESS



- **SHAPE OF MUSCLE**

- Deltoid – triangular
- Trapezius



- **ACTION OF MUSCLE**

- Adductor
- Abductor
- Extensor
- Flexor

