**MUSCULAR SYSTEM**

**Introduction**

Before embarking on various muscle groups, students need to familiarize themselves with various muscle terminologies

1. Agonist – Muscle which performs the required movement in a joint e.g. joint flexion.
2. Antagonist – Muscle which performs the opposite movement of an agonist e.g. joint extension.
3. Prime mover/chief/principal – Muscle which produces the greatest force in a desired movement.
4. Muscle origin – This is the less movable end of a muscle/ tendon that is attached to a bone (proximal end of muscle that is attached to less movable bone).
5. Muscle insertion – This is the more flexible (movable) end of the muscle that is attached to a bone via tendon. (Distal end of muscle that is attached to a more movable bone).

**Functions of muscles**

* They allow a person to move skeletal muscles of lower limb.
* They allow a person to speak e.g. muscles of the tongue.
* They allow a person to chew food e.g. muscles of mastication.
* They control heartbeat e.g. cardiac muscles.
* They control breathing e.g. muscles of respiration.
* They control digestion e.g smooth muscles of GIT.
* They generate heat (temperature regulation)
* They control visionary e.g. muscles of eye ball.

**MUSCLES OF UPPER LIMB**

**Muscles of the shoulder**

They are six in number namely;

* Deltoid
* Subscapularis
* Supraspinatous
* Infraspinatous
* Teres major and
* Teres minor

**Deltoid**

* This is a thick triangular muscle which gives the shoulder its nice roundness.

Origin: - Lateral part of clavicle (collar bone)

* Acromion process of scapula
* Spine of scapula

Insertion: Deltoid tuberosity

Nerve supply: Circumflex (Axillary nerve) C5, 6.

Action: - Abduction of arm (raising arm out to side of body).

* Flexion (moving your arm forward)
* Extension (moving your arm backwards)
* Stabilize shoulder joint.

**Subscapularis**

Origin: Sub-scapularis fossa of scapula

Insertion: Lesser tubercle of humerus

Nerve supply: Subscapular nerve C5,6,7.

Action: - Stabilize shoulder joint.

* Medial (internal rotation) of humerus.
* Adduction of shoulder joint.

**Supraspinatous**

Origin: Supraspinatous fossa of scapula

Insertion: Greater tubercle of humerus

Nerve supply: Suprascapular nerve C4,5,6.

Action: -Stabilize shoulder joint

* Abduction of shoulder joint (the first 150).

NB: The rotational movement of this muscle has not been identified because few studies have been reported on it.

**Infraspinatous**

Origin: Infraspinatous fossa

Insertion: Greater tubercle of humerus

Nerve supply: Infrascapular nerve C4, 5.

Action: - Stabilize shoulder joint

* Lateral (external) rotator of shoulder joint.

**Teres major**

Origin: Dorsal surface, inferior angle of scapula

Insertion: Bicipital groove (inter tubercular groove- a depression along the anterior and proximal humerus. It contains tendon of the long head of biceps. Brachii muscle.

Nerve supply: Lower subscapular nerve C5, 6 & 7.

Action: - Extension of shoulder joint

* Medial (internal rotation) of shoulder joint.
* Stabilize shoulder joint.

**Teres minor**

Origin: Lateral border of scapula

Insertion: Greater tubercle of humerus

Nerve supply: Circumflex (axillary) nerve C4,5 & 6.

Action: - Stabilize shoulder joint

* External (lateral rotation) of shoulder joint.
* Assist adduction and extension of shoulder joint.

**The sit muscles**

The supraspinatous infraspinatous, teres minor and subscapularis are called the sit muscles because they insert on the greater tubercle of humerus.

**The rotator cuff muscles**

This is formed by tendons of supraspinous, infraspinatous, teres minor and subscapularis muscles when they insert on the humerus very close to the shoulder joint.

* They strengthen the shoulder joint capsule.
* They add to the stability of the shoulder joint.

**Muscles of upper arm**

They are divided into two groups

* Anterior compartment (flexor compartment)
* Posterior compartment (Exterior compartment)

**Anterior compartment muscles**

They are three in number namely

* Coracobrachialis
* Biceps
* Brachialis

**Coracobrachialis**

Origin: Tip of coracoid process of scapula (in common with short head of biceps).

Insertion: Middle, medial aspect shaft of humerus.

Nerve supply: Musculocutaneous nerve C5,6,7.

Action: - Adduction of upper arm/shoulder joint.

* Flexion of upper arm/shoulder joint.
* Horizontal flexion of shoulder joint.

**Biceps**

Origin: It originates by two heads hence its name.

Short head. Tip of coracoid process of scapula

Long head. Supraglenoid tubercle of scapula

Insertions: - Radial tuberosity of radius

* Bicipital oponeorosis into deep fascia on medial part of forearm.

Nerve supply: musculocutaneous nerve C5, 6 & 7

Action: - Powerful supinator of forearm

* Flexion of elbow joint

**Brachialis**

Origin: Distal part, anterior humerus

Insertion: Ulna tuberosity

Nerve supply: Musculocutaneous nerve C5, 6.

Action: flexes the elbow joint

**Posterior compartment**

There is only one muscle namely Triceps.

**Triceps**

Origin: Long head – infralenoid tubercle of scapula

Lateral head – above radial groove of humerus

Medial head – below radial groove of humerus

Insertion: Olecranon process of ulna

Nerve supply: Radial nerve.

Action: Principle muscle in elbow extension (straightening of the arm).

**Contents of cubital fossa of elbow joint**

* Brachial artery
* Median nerve
* Radial nerve
* Biceps tendon