

Human Muscular System Overview

1. Head and Scalp

A. Scalp Muscles

- Occipitofrontalis
- Frontal belly: Raises eyebrows, wrinkles forehead.
- Occipital belly: Pulls scalp backward.

B. Facial Muscles (Mimetic muscles)

- Orbicularis oculi: Closes the eyelids.
- Orbicularis oris: Puckers the lips.
- Zygomaticus major & minor: Elevates lips (smiling).
- Buccinator: Compresses cheeks (whistling, chewing).
- Platysma: Tenses skin of the neck.
- Levator labii superioris, Depressor anguli oris, etc.: Move parts of lips and face.

C. Mastication (Chewing) Muscles

- Masseter: Elevates mandible.
- Temporalis: Elevates and retracts mandible.
- Medial and Lateral Pterygoid: Side-to-side movement of jaw.

2. Neck

- Sternocleidomastoid: Turns and flexes head.
- Scalenes (anterior, middle, posterior): Elevate ribs 1-2, lateral neck flexion.
- Trapezius (upper fibers): Elevates scapula, extends neck.
- Suprahyoid muscles (digastric, mylohyoid, etc.): Swallowing.
- Infrahyoid muscles (sternohyoid, omohyoid, etc.): Depress hyoid and larynx.

3. Shoulder and Upper Back

- Deltoid: Shoulder abduction, flexion, extension.
- Trapezius: Moves scapula (elevation, retraction, rotation).
- Levator scapulae: Elevates scapula.
- Rhomboid major & minor: Retract scapula.
- Supraspinatus, Infraspinatus, Teres minor, Subscapularis (Rotator cuff muscles): Stabilize shoulder joint.

4. Arm

A. Anterior Compartment

- Biceps brachii: Flexes elbow, supinates forearm.
- Brachialis: Primary elbow flexor.

- Coracobrachialis: Assists in arm flexion.

B. Posterior Compartment

- Triceps brachii: Extends elbow.
- Anconeus: Assists triceps in elbow extension.

5. Forearm

A. Anterior (Flexor) Compartment

- Flexor carpi radialis & ulnaris
- Palmaris longus
- Flexor digitorum superficialis & profundus
- Flexor pollicis longus
- Pronator teres & quadratus

B. Posterior (Extensor) Compartment

- Extensor carpi radialis longus & brevis
- Extensor carpi ulnaris
- Extensor digitorum
- Extensor pollicis longus & brevis
- Supinator

6. Hand

- Thenar muscles (thumb): Abductor, Flexor, Opponens pollicis.
- Hypothenar muscles (little finger): Abductor, Flexor, Opponens digiti minimi.
- Lumbricals: Flex MCP, extend IP joints.
- Interossei (palmar and dorsal): Finger adduction/abduction.

7. Thorax (Chest)

- Pectoralis major: Flexes, adducts, and medially rotates arm.
- Pectoralis minor: Pulls scapula forward.
- Serratus anterior: Rotates scapula, punches.
- Intercostals (external, internal, innermost): Aid in respiration.
- Diaphragm: Primary muscle of respiration.

8. Abdomen

- Rectus abdominis: Flexes trunk.
- External oblique: Rotates trunk, compresses abdomen.
- Internal oblique: Same as above (but deeper).
- Transversus abdominis: Compresses abdomen.
- Quadratus lumborum: Lateral flexion of spine.

9. Lower Back

- Erector spinae group (Iliocostalis, Longissimus, Spinalis): Extend and laterally flex spine.
- Multifidus: Stabilizes vertebrae.
- Latissimus dorsi: Extends, adducts, and medially rotates arm.

10. Pelvis and Gluteal Region

- Gluteus maximus: Extends hip.
- Gluteus medius & minimus: Abducts and stabilizes hip.
- Piriformis, Gemelli, Obturators, Quadratus femoris: Laterally rotate thigh.
- Pelvic floor muscles (levator ani, coccygeus, etc.): Support pelvic organs.

11. Thigh

A. Anterior Compartment

- Quadriceps group (Rectus femoris, Vastus lateralis, medialis, intermedius): Extend knee.
- Sartorius: Flexes, abducts, laterally rotates thigh; flexes knee.
- Iliopsoas (Psoas major + Iliacus): Flexes hip.

B. Posterior Compartment

- Hamstrings (Biceps femoris, Semitendinosus, Semimembranosus): Extend hip, flex knee.

C. Medial Compartment

- Adductors (longus, brevis, magnus): Adduct thigh.
- Gracilis: Adducts thigh.
- Pectineus: Adducts and flexes thigh.

12. Leg (Below Knee)

A. Anterior Compartment

- Tibialis anterior: Dorsiflexes and inverts foot.
- Extensor hallucis longus: Extends big toe.
- Extensor digitorum longus: Extends toes.

B. Lateral Compartment

- Fibularis (Peroneus) longus & brevis: Evert foot.

C. Posterior Compartment

- Gastrocnemius: Plantarflexes foot, flexes knee.
- Soleus: Plantarflexes foot.
- Tibialis posterior: Inverts foot.
- Flexor digitorum longus & Flexor hallucis longus: Flex toes.

13. Foot

- Extensor digitorum & hallucis brevis (dorsum).
- Flexor digitorum brevis, Abductor hallucis, Abductor digiti minimi, etc. (plantar).
- Lumbricals and Interossei: Control toe movements and maintain arch.