

<u>Muscles</u>	<u>Origin = O:</u>	<u>Insertion = I:</u>	<u>Action</u>
Movements related to facial expression:			
<u>Epicranius</u>			
1	Frontalis		Raises eyebrows
2	Occipitalis		Tenses and retracts scalp
3	Orbicularis oris		Compresses, purses lips (kissing)
4	Zygomaticus major		Retracts and elevates corners of mouth (smiling)
5	Levator labii superioris		Elevates upper lip.
6	Depressor labii inferioris		Drepresses lower lip.
7	Buccinator		Compresses cheeks (whistling / blowing and sucking)
8	Mentalis		Elevates and protrudes lower lip (pouting)
9	Platysma		Tenses skin of neck and depresses mandible
10	Risorius		Draws corner of mouth to the side (laterally)
11	Orbicularis oculi		Closes the eye.
12	Corrugator supercilii		Pulls skin inferiorly and anteriorly wrinkles brow (frowning)
13	Levator palpebrae superioris		Elevates upper eye lid, opens eye.
Movements of the eyeball:			
14	Superior rectus		Moves eyeball superiorly and medially
15	Inferior rectus		Moves eyeball inferiorly and medially
16	Lateral rectus		Moves eyeball laterally
17	Medial rectus		Moves eyeball medially
18	Superior oblique		Moves eyeball inferiorly and laterally
19	Inferior oblique		Moves eyeball superiorly and laterally

Movement of mandible, tongue and pharynx:

20	Masseter	O: Maxilla and zygomatic arch. I: Angle and ramus of mandible .	Elevates mandible, as in closing mouth , and retracts (draws back) mandible.
21	Temporalis	O: Temporal and frontal bones. I: Coronoid process and ramus of mandible .	Elevates and retracts mandible.
22	Medial pterygoid		Elevates and protracts (protrudes) and moves mandible from side to side.
23	Lateral pterygoid		Protracts mandible, depresses mandible as in opening mouth, and moves mandible from side to side.
24	Genioglossus	O: Mandible I: Under surface of tongue and hyoid bone.	Depresses tongue and thrusts it anteriorly (protraction).
25	Styloglossus		Elevates tongue and draws it posteriorly (retraction).
26	Stylohyoid	O: Styloid process on temporal bone. I: Body of hyoid bone .	Elevates the hyoid bone and draws it posteriorly.
27	Hyoglossus		Depresses and retracts tongue
28	Digastric (Anterior & Posterior)	O: Anterior belly from inner side of inferior border of mandible ; posterior belly from mastoid process of temporal bone. I: Body of hyoid bone via an intermediate tendon.	Elevates hyoid bone and depresses mandible , as in opening the mouth.
Movements of head and neck:			
29	Sternocleidomastoid	O: Sternum and clavicle. I: Mastoid process of temporal bone.	Acting together (bilaterally), flex neck . acting singly: (unilaterally) , laterally flex and rotate head to side opposite contracting muscle .
30	Splenius capitis		Acting together, extend neck ; acting singly, laterally flex and rotate neck to same side as contracting muscle .
MUSCLES OF THE TRUNK:			
Muscles of breathing:			
31	Diaphragm	O: Xiphoid process of the sternum, costal cartilages of ribs #4-10 , and lumbar vertebrae . I: Central tendon.	Forms floor of thoracic cavity. Pulls central tendon inferiorly during inspiration which expands thoracic cavity
32	External intercostals	O: Inferior border of rib above. I: Superior border of rib below.	Elevates ribs during inspiration
33	Internal intercostals	O: Superior border of rib below. I: Inferior border of rib above.	Depresses ribs during forced expiration

Muscles of the abdominal wall:			
34	Rectus abdominis	O: Pubic crest and pubic symphysis. I: Cartilage of fifth to seventh ribs and xiphoid process.	Flexes trunk; compresses abdomen during defecation, urination, forced expiration, and child birth.
35	External oblique	O: Inferior eight ribs I: Iliac crest and linea alba	Compresses abdomen; flexion and lateral flexion of trunk.
36	Internal oblique	O: Iliac crest, inguinal ligament, and thoracolumbar fascia I: Cartilage of last three or four ribs and linea alba	Compresses abdomen, flexion and lateral flexion of trunk.
37	Transversus abdominis	O: Iliac crest, inguinal ligament, lumbar fascia and cartilages of inferior six ribs. I: Xiphoid process, linea alba, and pubis.	Compresses abdomen.
Deep muscles of the back			
38	Quadratus lumborum		Laterally flex of trunk; raise hip.
Erector Spinae (Sacrospinalis) muscles.			Bilaterally: Extension of spine. Unilaterally: Lateral flexion of spine.
<i>Spinalis Group (Medial)</i>			
39	spinalis capitis		
40	spinalis cervicis		
41	spinalis thoracis		
<i>Longissimus Group (Intermediate)</i>			
42	Longissimus capitis		Bilaterally: Extension of spine. Unilaterally: Lateral flexion of spine.
43	Longissimus cervicis		
44	Longissimus thoracis		
<i>Iliocostalis group (lateral)</i>			
45	iliocostalis cervicis		Bilaterally: Extension of spine. Unilaterally: Lateral flexion of spine.
46	iliocostalis thoracis		
47	iliocostalis lumborum		

Muscles of the pelvic floor and perinium:

- 48 Levator ani
49 Coccygeus

Action is the same as Coccygeus. See below.

Tenses and supports pelvic floor.

Resists intra-abdominal pressure during forced expiration, coughing, vomiting, urination and defecation.

50	Bulbospongiosus (Bulbocavernosus)	Helps expel urine; propels semen; assists erection of penis; constricts vaginal orifice and assists in erection of clitoris.
51	Ischiocavernosus	Maintains erection of penis and clitoris.
52	External anal sphincter	Closes anal opening

MUSCLES OF THE UPPER EXTREMITY:**Movement of the shoulder and arm:**

53	Pectoralis major	O: Clavicle (clavicular head), sternum , and costal cartilages of second to sixth ribs (sometimes first to seventh ribs). I: Greater tubercle and intertubercular sulcus of humerus.	Adducts and medially rotates arm at shoulder joint. Clavicular head flexes arm. Sternocostal head extends arm.
54	Pectoralis minor	O: Anterior superior surface of ribs 3-5 I: Coracoid process of scapula.	Depresses and abducts scapula & rotates it downward. Elevates third through fifth ribs during forced inspiration.
55	Serratus anterior	O: Superior eight or nine ribs. I: Vertebral border and inferior angle of scapula	Abducts scapula and rotates it upward. Elevates ribs.
56	Trapezius	O: Superior nuchal line of occipital bone, ligamentum nuchae, and spines of seventh cervical and all thoracic vertebrae. I: Clavicle and acromion and spine of scapula.	Elevates, depresses and adducts scapula; Stabilizes scapula and rotates it upwards. Extend head.
57	Levator scapulae	O: Superior four or five cervical vertebrae. I: Superior vertebral border of scapula.	Elevates scapula.
58	Rhomboideus major	O: Spines of 2nd to 5th thoracic vertebrae. I: Vertebral border of scapula.	Elevates and adducts scapula. Stabilizes scapula and rotates it downward.
59	Rhomboideus minor	O: Spines of 7th cervical and first thoracic vertebrae. I: Vertebral border of scapula superior to spine	Elevates and adducts scapula. Stabilizes scapula and rotates it downward.

60	Latissimus dorsi	O: Spines of six thoracic vertebrae, lumbar vertebrae, crests of sacrum and ilium , inferior four ribs. I: Intertubercular sulcus of humerus.	Extends, adducts and medially rotates humerus. Draws arm inferiorly and posteriorly.
61	Deltoid	O: Acromial extremity of clavicle (anterior fibers) acromion of scapula (lateral fibers), and spine of scapula (posterior fibers). I: Deltoid tuberosity of humerus.	Abduct the arm. Flex and Extend Arm. Also does medial and lateral rotation of arm.
62	Teres major	O: Inferior angle of scapula I: Intertubercular groove of humerus.	Extends arm and assists adduction and medial rotation of arm.
63	Teres minor	O: Inferior lateral border of scapula . I: Greater tubercle of humerus.	Extends, adducts and laterally rotates arm .
64	Supraspinatus	O: Supraspinous fossa of scapula . I: Greater tubercle of humerus.	Assists deltoid muscle in abducting arm .
65	Infraspinatus	O: Infraspinous fossa of scapula I: Greater tubercle of humerus.	Lateral rotation at shoulder
66	Subscapularis	O: Subscapular fossa of scapula I: Lesser tubercle of humerus.	Medial rotation at shoulder.
67	Coracobrachialis	O: Coracoid process of scapula. I: Medial surface of shaft of humerus	Flexes and adducts arm at shoulder.
68	Subclavius	O: First rib . I: Clavicle inferior border	Depresses and protracts shoulder.
<i>Movement of forearm and hand:</i>			
69	Biceps brachii	O: Long head: Supraglenoid tubercle . Short head: Coracoid process of scapula. I: Radial tuberosity	Flexes forearm at elbow joint and shoulder joint. Supinates forearm.
70	Brachialis	O: Distal, anterior surface of humerus . I: Ulnar tuberosity	Flexes forearm at elbow joint. (Strongest forearm flexor).
71	Brachioradialis	O: Lateral border of distal end of humerus I: Superior to styloid process of radius .	Flexes forearm at elbow joint, in the neutral position. (eg. Drinking a can of pop).
72	Triceps brachii	O: Long head : Infraglenoid tubercle of scapula Lateral head: Lateral and posterior surface of humerus . Medial head: Posterior surface of humerus I: Olecranon of ulna.	Extends forearm at elbow joint and shoulder. (long head adducts shoulder)

73	Supinator	O: Lateral epicondyle of humerus below radial notch of ulna. I: Lateral surface of proximal 1/3 of radius.	Supinates forearm
74	Pronator teres	O: Medial epicondyle of humerus and coronoid process of ulna. I: Midlateral surface of radius.	Pronates forearm and weakly assists elbow flexion.
75	Flexor carpi radialis		Flexes and abducts wrist.
76	Flexor carpi ulnaris		Flexes and adducts wrist.
77	Extensor carpi radialis longus		Extends and abducts wrist
78	Extensor carpi ulnaris		Extends and adducts wrist
79	Palmaris longus	O: Medial epicondyle of humerus. I: Flexor retinaculum and palmar aponeurosis (deep fascia in center of palm).	Weakly flexes wrist.
MUSCLES OF THE LOWER EXTREMITY:			
Movement of the femur:			
80	Gluteus maximus	O: Iliac crest , sacrum, coccyx, and aponeurosis of sacrospinalis. I: Iliotibial tract of fascia lata and lateral part of linea aspera under greater trochanter (gluteal tuberosity) of femur.	Extends thigh at hip and laterally rotates thigh.
81	Gluteus medius and	O: Ilium	Abducts and medially rotates hip.
82	Gluteus minimus	I: Greater trochanter of femur.	
83	Tensor fasciae latae	O: Iliac crest I: Tibia by way of the iliotibial tract.	Flexes and abducts thigh at hip joint.
84	Piriformis		Laterally rotates and abducts thigh at hip joint.
85	Pectineus	O: Superior ramus of pubis. I: Pectineal line inferior to lesser trochanter of femur.	Flexes, adducts and medially rotates hip.
86	Adductor brevis	O: Inferior ramus of pubis. I: Superior half of linea aspera of femur.	Adducts, flexes, and medially rotates hip.
87	Adductor longus	O: Pubic crest and pubic symphysis. I: Linea aspera of femur.	Adducts, flexes, and medially rotates hip.
88	Adductor magnus	O: Inferior ramus of pubis and ischium to ischial tuberosity. I: Linea aspera of femur.	Adducts, flexes, and medially rotates hip. Posterior portion extends thigh at hip joint.
89	Gracilis	O: Inferior ramus of pubis I: Medial proximal tibia.	Adducts and medially rotates hip; and flexes knee.
90A	Iliacus	(Together, these two muscles are known as the iliopsoas muscle)	Flexion at hip
90B	Psoas major		(Together, they are the strongest hip flexor).

Movement of the leg and thigh:

Quadriceps femoris (4 muscles):

91	Rectus femoris	O: Anterior inferior iliac spine . I: Patella via quadriceps tendon and then tibial tuberosity via patellar ligament.	Extension at knee. Flexion at hip.
92	Vastus medialis	O: Linea aspera of femur. I: Patella via quadriceps tendon and then tibial tuberosity via patellar ligament.	Extension at knee.
93	Vastus lateralis	O: Greater trochanter and linea aspera of femur. I: Patella via quadriceps tendon and then tibial tuberosity via patellar ligament.	Extension at knee.
94	Vastus intermedius	O: Anterior and lateral shaft of femur I: Patella via quadriceps tendon and then tibial tuberosity via patellar ligament.	Extension at knee.
95	Sartorius	O: Anterior superior iliac spine . I: Upper medial surface of body of tibia .	Flexes knee. Flexes, abducts and laterally rotates hip.
Hamstrings (3 muscles):			
96	Biceps femoris	O: Ischial tuberosity and linea aspera of femur. I: Head of fibula and lateral condyle of tibia .	Flexes knee. Extends and laterally rotates hip.
97	Semitendinosus	O: Ischial tuberosity . I: Proximal part of medial surface of shaft of tibia .	Flexes knee. Extends and medially rotates hip.
98	Semimembranosus	O: Ischial tuberosity . I: Medial condyle of tibia .	Flexes knee. Extends and medially rotates hip.
Movement of the leg and foot:			
99	Gastrocnemius	O: Lateral & medial epicondyles of femur I: Calcaneus by way of calcaneal (Achilles) tendon.	Plantar flexes ankle. Flexes knee and inverts foot.
100	Soleus	O: Head of fibula and medial border of tibia . I: Calcaneus by way of calcaneal (Achilles) tendon.	Plantar flexes ankle
101	Peroneus longus (Fibularis longus)	O: Lateral shaft of fibula (upper 2/3) . I: First metatarsal and first cuneiform .	Plantar flexes ankle. Everts foot.

102	Tibialis anterior	O: Lateral condyle and proximal shaft of tibia.	Dorsiflexes ankle. Inverts foot.
		I: First metatarsal and first (medial) cuneiform.	
103	Tibialis posterior	O: Posterior tibia, fibula, and interosseous membrane. I: Second, third, and fourth metatarsals; navicular; all three cuneiforms; and cuboid.	Plantar flexes ankle. Adducts and inverts foot.