

Upper Extremity

Muscle	Location	Origin	Insertion	Nerve Root	Trunk	Division	Cord	Branch	Action
Abductor digiti minimi	Hand	Pisiform	Base of proximal phalanx of digit 5	C8, T1	Lower	Anterior	Medial	Ulnar	Abduction of digit 5
Abductor pollicis brevis	Hand	Flexor retinaculum; scaphoid and trapezium	Base of proximal phalanx of thumb	C8, T1	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Abduction of thumb
Abductor pollicis longus	Forearm - extensor - deep	Posterior surface of ulna and radius	Base of 1st metacarpal	C7, C8	Middle	Posterior	Posterior	Radial	Abduction and extension of thumb
Adductor pollicis	Hand	Transverse head - 3rd metacarpal; Oblique head - bases of 1st 3 metacarpals and	Base of proximal phalanx of thumb	C8, T1	Lower	Anterior	Medial	Ulnar	Adduction and flexion of thumb
Anconeus	Arm	Lateral epicondyle of humerus	Lateral side olecranon of ulna	C7	Middle	Posterior	Posterior	Radial	Extension of forearm
Biceps brachii	Arm	Short head - lip of coracoid process of scapula; long head - supraglenoid tubercle of scapula	Radial tuberosity and bicipital aponeurosis into fascia of forearm	C5, C6	Upper/Middle	Anterior	Lateral	Musculocutaneous	Flexion and supination of forearm; flexion of arm (short head)
Brachialis	Arm	Lower half of anterior surface of humerus; intermuscular septa	Ulnar tuberosity	C5, C6	Upper/Middle	Anterior	Lateral	Musculocutaneous	Flexion of forearm
Brachioradialis	Forearm - extensor - superficial	Lateral supracondylar ridge of humerus; lateral intermuscular septum of arm	Lateral side of distal end of radius	C5, C6	Middle	Posterior	Posterior	Radial	Flexion of forearm
Coracobrachialis	Arm	Coracoid process of scapula	Anteromedial surface of midshaft of humerus	C5, C6	Upper/Middle	Anterior	Lateral	Musculocutaneous	Flexion and adduction of humerus
Deltoid	Shoulder	Lateral third of clavicle; acromion; spine of scapula	Deltoid tuberosity on shaft of humerus	C5, C6	Middle	Posterior	Posterior	Axillary	Abduction (middle fibers), flexion and internal rotation (anterior fibers), and extension and
Dorsal interossei	Hand	Adjacent surfaces of metacarpals	No. 1 - proximal phalanx on radial side of digit 2; No. s 2, 4 - proximal phalanx on	C8, T1	Lower	Anterior	Medial	Ulnar	Abduction of digits 2-4, flexion of MCP joints; extension of interphalangeal joints (depending
Extensor carpi radialis brevis	Forearm - extensor - superficial	Lateral epicondyle of humerus (common extensor tendon)	Base of 3rd metacarpal	C6, C7	Middle	Posterior	Posterior	Radial	Extension of hand
Extensor carpi radialis longus	Forearm - extensor - superficial	Lateral supracondylar ridge and lateral epicondyle of humerus (common extensor tendon)	Base of 2nd metacarpal	C6, C7	Middle	Posterior	Posterior	Radial	Extension and abduction (radial deviation) of hand
Extensor carpi ulnaris	Forearm - extensor - superficial	Lateral supracondylar ridge and lateral epicondyle of humerus (common extensor tendon)	Base of 5th metacarpal	C7	Middle	Posterior	Posterior	Radial	Extension and adduction (ulnar deviation) of hand
Extensor digiti minimi	Forearm - extensor - superficial	Lateral epicondyle of humerus (common extensor tendon)	Middle and distal phalanges of little finger	C7	Middle	Posterior	Posterior	Radial	Extension and abduction of 5th digit
Extensor digitorum	Forearm - extensor - superficial	Lateral epicondyle of humerus; intermuscular septum; antebrachial fascia	Middle and distal phalanges of digits 2-4	C7	Middle	Posterior	Posterior	Radial	Extension of digits 2-5
Extensor indicis	Forearm - extensor - deep	Posterior surface of ulna	Tendon of extensor digitorum; extensor expansion	C7	Middle	Posterior	Posterior	Radial	Extension of index finger
Extensor pollicis brevis	Forearm - extensor - deep	Posterior surface of radius	Proximal phalanx of thumb	C6, C7	Middle	Posterior	Posterior	Radial	Extension of proximal phalanx of thumb
Extensor pollicis longus	Forearm - extensor - deep	Posterior surface of middle third of ulna	Distal phalanx of thumb	C7, C8	Middle	Posterior	Posterior	Radial	Extension of distal phalanx of thumb
Flexor carpi radialis	Forearm - flexor - superficial	Medial epicondyle of humerus (common flexor tendon)	Base of 2nd metacarpal and possibly 3rd	C6, C7	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Flexion and abduction (radial deviation) of hand
Flexor carpi ulnaris	Forearm - flexor - superficial	Medial epicondyle of humerus (common flexor tendon); proximal 2/3's of posterior ulnar	Pisiform bone	C8, T1	Lower	Anterior	Medial	Ulnar	Flexion and adduction (ulnar deviation) of hand
Flexor digiti minimi	Hand	Flexor retinaculum; hook of hamate	Proximal phalanx of digit 5	C8, T1	Lower	Anterior	Medial	Ulnar	Flexion of digit 5
Flexor digitorum profundus	Forearm - flexor - deep	Anterior and medial surfaces of proximal 2/3's of ulna	Distal phalanges of digits 2-5	C8, T1	Upper/Middle/Lower - Digits 2-3; Middle/Lower - Digits 4-5	Anterior	Lateral/Medial	Median - digits 2-3; Ulnar - digits 4-5	Flexion of distal phalanx of digits 2-5
Flexor digitorum superficialis	Forearm - flexor - intermediate	Medial epicondyle of humerus (common flexor tendon); medial aspect of coronoid process of	Middle phalanx of digits 2-5	C8	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Flexion of middle phalanges of digits 2-4

Flexor pollicis brevis	Hand	Superficial head - flexor retinaculum (and possibly trapezium); Deep head -	Base of proximal phalanx of thumb	C8, T1	Upper/Middle/Lower - Superficial head; Middle/Lower - Deep head	Anterior	Lateral/Medial	Median - Superficial head; Ulnar - Deep head	Flexion of thumb; aids in opposition and adduction
Flexor pollicis longus	Forearm - flexor - deep	Anterior surface of middle half of radius	Distal phalanx of thumb	C8	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Flexion of distal phalanx of thumb
Infraspinatus	Shoulder	Infraspinatus fossa of scapula	Greater tubercle of humerus below supraspinatus	C5, C6	Upper			Suprascapular	External rotation of humerus
Latisimus dorsi	Shoulder	Spinous processes of lower six thoracic and all lumbar and sacral vertebrae; posterior part	Medial lip (crest of lesser tubercle) and floor of intertubercular groove of	C6, C7, C8	Lower	Anterior	Medial	Thoracodorsal	Extension, adduction and internal rotation of humerus
Levator scapulae	Shoulder	Transverse processes of upper four cervical vertebrae	Superior angle and upper part of medial border of scapula	C3, C4				Nerve to levator scapulae	Elevation of scapulae
Lumbricals	Hand	Tendons of flexor digitorum profundus	Extensor aponeurosis of digits 2-5	C8, T1	Upper/Middle/Lower - Digits 2-3; Middle/Lower - Digits 4-5	Anterior	Lateral/Medial	Median - digits 2-3; Ulnar - digits 4-5	Extension of interphalangeal joints of digits 2-5; flexion of MCP joints
Opponens digiti minimi	Hand	Flexor retinaculum; hook of hamate	5th metacarpal	C8, T1	Lower	Anterior	Medial	Ulnar	Opposition of digit 5 to thumb
Opponens pollicis	Hand	Flexor retinaculum; trapezium	First metacarpal	C8, T1	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Opposition of thumb
Palmar interossei	Hand	Shaft of metacarpal - one to each digit 2, 4-5	Extensor aponeurosis of finger of origin	C8, T1	Lower	Anterior	Medial	Ulnar	Adduction of the respective digit; 2, 4-5; flexion of MCP joints; extension of IP joints
Palmaris brevis	Hand	Palmar aponeurosis, medial border	Skin on ulnar side of hand	C8, T1	Lower	Anterior	Medial	Ulnar	Stabilization of skin of palm for gripping
Palmaris longus	Forearm - flexor - superficial	Medial epicondyle of humerus (common flexor tendon)	Palmar aponeurosis	C7, C8	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Flexion of hand
Pectoralis major	Shoulder	Medial 2/3's of clavicle; sternum; costal cartilages 1-6	Lateral lip of intertubercular groove (crest of greater tubercle) of humerus	C5, C6, C7 Upper pectoral; C8, T1 Lower pectoral	Upper (upper pec); Lower (lower pec)	Anterior (upper/lower pec)	Lateral (upper pec); Medial (lower pec)	Lateral pectoral (upper pec); Medial pectoral (lower pec)	Adduction and medial rotation of arm; flexion (clavicular fibers) and extension (sternocostal)
Pectoralis minor	Shoulder	Ribs 3-5	Coracoid process of scapula	C8, T1	Lower	Anterior	Medial	Medial pectoral	Depression of shoulder; downward rotation of scapula
Pronator quadratus	Forearm - flexor - deep	Distal fourth of ulna	Distal part of radius	C8	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Pronation of forearm (and hand)
Pronator teres	Forearm - flexor - superficial	Medial epicondyle of humerus; coronoid process of ulna	Lateral surface of shaft of radius	C6, C7	Upper/Middle/Lower	Anterior	Lateral/Medial	Median	Pronation of forearm (and hand)
Rhomboides major	Shoulder	Spinous processes of 2nd to 5th thoracic vertebrae	Medial border of scapula below rhomboides minor	C5 nerve root				Dorsal scapular	Elevation and retraction of scapula; downward rotation of glenoid cavity
Rhomboides minor	Shoulder	Lower part of ligamentum nuchae; spinous processes of 7th cervical and 1st thoracic	Medial border of scapula at base of spine	C5 nerve root				Dorsal scapular	Elevation and retraction of scapula; downward rotation of glenoid cavity
Serratus anterior	Shoulder	Ribs 1-8 on anterolateral thoracic wall	Medial border of scapula; heaviest insertion to inferior angle	C5, C6, C7 nerve roots				Long thoracic	Protraction of scapula; upward rotation of glenoid cavity; holds medial border against thoracic
Sternocleidomastoid	Shoulder	Tendinous head from sternum; muscular head from medial third of clavicle	Mastoid process of skull	C1, C2, C3				CNXI - Spinal accessory	One muscle - flexion of neck toward same side (turns face to opposite side and brings ear of
Subclavius	Shoulder	Rib 1 - arises and passes laterally	Undersurface of clavicle	C5, C6				nerve to subclavius	Possible depresses clavicle; maintains sternoclavicular joint
Subscapularis	Shoulder	Subscapula fossa of scapula	Lesser tubercle and crest of humerus	C5, C6	Middle	Posterior	Posterior	Upper and lower subscapular	
Supinator	Forearm - extensor - deep	Posterolateral surface of ulna below radial notch; lateral epicondyle; radial collateral and	Proximal shaft of radius	C5, C6	Middle	Posterior	Posterior	Radial	Supination of forearm (and hand)
Supraspinatus	Shoulder	Supraspinatus fossa of scapula	Greater tubercle of humerus	C5, C6	Upper			Suprascapular	Abduction of humerus
Teres major	Shoulder	Inferior angle of scapula	Medial lip of intertubercular groove of humerus	C5, C6	Middle	Posterior	Posterior	Lower subscapular	Adduction, internal rotation and extension of arm
Teres minor	Shoulder	Upper 2/3's of lateral border of scapula	Greater tubercle of humerus below infraspinatus	C5, C6	Middle	Posterior	Posterior	Axillary	External rotation of scapula
Trapezius	Shoulder	External occipital protuberance; ligamentum nuchae; spinous processes of 7th cervical and all	Spine of scapula; acromion; lateral third of clavicle	C1, C2, C3				CNXI - Spinal accessory	Elevation of scapula (upper fibers); retraction of scapula (middle fibers); depression of
Triceps brachii	Arm	Long head - infraglenoid tubercle of scapula; lateral head posterior surface of humerus	Proximal end of olecranon of ulna	C7	Middle	Posterior	Posterior	Radial	Extension of forearm; extension of arm (long head)

Lower Extremity

Muscle	Location	Origin	Insertion	Nerve Root	Division	Branch	Action
Abductor digiti minimi	Foot - superficial	Lateral tubular process of calcaneus; medial process (small area); intervening surface	Proximal phalanx of little toe (lateral side)	S1, S2		Lateral plantar	Flexion and abduction of little toe
Abductor hallucis	Foot - superficial	Medial tubular process of calcaneus; flexorretinaculum; medial intermuscular septum	Proximal phalanx of big toe (tibial side of flexor surface)	S1, S2		Lateral plantar	Flexion of big toe at metatarsophalangeal joint
Adductor brevis	Thigh - medial	Body and inferior ramus of pubis	Pectineal line and proximal part of linea aspera of femur.	L2, L3, L4		Obturator nerve.	Adducts femur, some flexion.
Adductor hallucis	Foot - 3rd layer	Oblique head - bases of second to fourth metatarsals; sheath of peroneus longus tendon.	Base of proximal phalanx of big toe	S1, S2		Lateral plantar	Adduction and flexion of big toe
Adductor longus	Thigh - medial	Body of pubis, inferior to pubic crest.	Middle third of linea aspera of femur.	L2, L3, L4		Obturator nerve, anterior branch.	Adducts femur.
Adductor magnus	Thigh - medial	Inferior ramus of pubis, ramus of ischium (adductor part), and ischial tuberosity.	Gluteal tuberosity, linea aspera medial, supracondylar line (adductor)	L2, L3, L4 (Adductor part), L4 (Hamstring part)		Obturator nerve (Adductor part). Tibial portion of sciatic nerve (Hamstring part)	Adducts femur Flexes femur (Adductor part). Extends femur (Hamstring part)
Biceps femoris - long head	Thigh - posterior	Long head - ischial tuberosity.	Head of fibula	L5, S1, S2		Tibial nerve	Extension of thigh; Flexion of leg; external rotation of flexed leg
Biceps femoris - short head	Thigh - posterior	Short head - linea aspera of femur	Head of fibula	L5, S1		Common peroneal	Flexion of leg; external rotation of flexed leg
Dorsal interossei	Foot - deep layer	Adjacent sides of metatarsals	Proximal phalanges - #1 to medial side of second toe - #2,3 and 4 to lateral side of	S1, S2		Lateral plantar	Abduction of toes
Extensor digitorum brevis	Foot - dorsal surface	Calcaneus (dorsal surface)	Extensor digitorum longus tendons to 2nd - 4th toes	L5, S1		Deep peroneal	Extension of 2nd - 4th toes
Extensor digitorum longus	Calf - anterior	Lateral condyle of tibia; proximal three fourths of anterior surface of fibula; interosseous	middle and distal phalanges of lateral four toes	L4, L5, S1		Deep peroneal	Extension of four lateral toes; dorsiflexion and eversion of foot
Extensor hallucis brevis	Foot - dorsal surface	Calcaneus (dorsal surface)	Base of proximal phalanx of big toe	L5, S1		Deep peroneal	Extension of big toe
Extensor hallucis longus	Calf - anterior	Middle third of anterior surface of fibula; adjacent interosseous membrane	Distal phalanx of great toe	L4, L5, S1		Deep peroneal	Extension of great toe, dorsiflexion and inversion of foot
Flexor digiti minimi brevis	Foot - 3rd layer	Base of 5th MT	Base of proximal phalanx of little toe (plantar surface)	S1, S2		Lateral plantar	Flexion of proximal phalanx of little toe
Flexor digitorum brevis	Foot - superficial	Medial tubular process of calcaneus; medial and lateral intermuscular septa	Middle phalanges of lateral four toes	L5, S1		Medial plantar	Flexion of middle phalanges of lateral four toes
Flexor digitorum longus	Calf - deep	Middle third of posterior surface of tibia	Distal phalanges of lateral four toes	L5, S1		Tibial nerve	Flexion of distal phalanges of lateral four toes; weak plantar flexion and inversion
Flexor hallucis longus	Calf - deep	Middle half of posterior of fibula	Distal phalanx of great toe	L5, S1, S2		Tibial nerve	Flexion of big toe; weak planar flexion of foot
Flexor hallucis brevis	Foot - 3rd layer	Cuboid bone; lateral cuneiform bone; tendon of tibialis posterior muscle	Medial and lateral sides of base of proximal phalanx of big toe	L5, S1		Medial plantar	Flexion of proximal phalanx of big toe
Gastrocnemius	Calf - posterior	Posterior surface of femur just proximal to medial and lateral condyles	Calcaneus through tendon-calcaneus	S1, S2		Tibial nerve	Plantar flexion of foot; flexion of leg of free limb
Gluteus maximus	Buttock	Lateral surface of ilium behind posterior gluteal line; dorsal sacrospinous and sacrotuberous	Iliotibial tract; gluteal tuberosity of femur	L5, S1, S2		Inferior gluteal	Extension, external rotation, abduction (upper fibers), and adduction (lower fibers)
Gluteus medius	Buttock	Lateral surface of ilium between anterior and posterior gluteal lines	Greater trochanter of femur	L4, L5, S1, S2		Superior gluteal	Abduction of thigh; probably extension and external rotation of thigh
Gluteus minimus	Buttock	Lateral surface of ilium between anterior and inferior gluteal lines	Greater trochanter of femur	L4, L5, S1, S2		Superior gluteal	Abduction of thigh; probably flexion and internal rotation of thigh
Gracilis	Thigh - medial	Body and inferior ramus of pubis.	Superior part of medial surface of tibia.	L2, L3		Obturator nerve.	Adducts femur; flexes leg and helps rotate leg medially.

Iliacus	Thigh - anterior	Iliac crest, iliac fossa, ala of sacrum, and anterior sacroiliac ligaments	Tendon of psoas major and body of femur, inferior to lesser trochanter	L2, L3		Femoral nerve	Flex femur at hip
Inferior gemellus	Buttock	Iscial tuberosity	Inferior border of obturator internus tendon	L4, L5, S1		Nerve to quadratus femoris	External rotation of thigh; abduction of thigh when thigh is flexed
Lumbricals	Foot - 2nd layer	Flexor digitorum longus tendons	Expansions of extensor tendons of lateral four toes	L5, S1 First lumbrical - S1, S2 lateral three lumbricals		Medial plantar first lumbrical, Lateral plantar lateral three lumbricals	Flexion of metatarsophalangeal joints; possible extension of
Obturator externus	Thigh - medial	Obturator membrane; bone around obturator foramen on external surface of pelvis	Trochanteric fossa of femur	L3, L4		Obturator nerve	External rotation of thigh.
Obturator internus	Buttock	Obturator membrane; bone around obturator foramen on internal surface pelvis	Medial surface of greater trochanter above trochanteric fossa of femur	L5, S1, S2		Nerve to obturator internus	External rotation of thigh; abduction of thigh when thigh is flexed
Pectineus	Thigh - medial	Pecten pubis (pectineal line of pubis)	Pectineal line of femur.	L2, L3		Femoral nerve. May receive a branch from obturator nerve.	Adducts and flexes femur.
Peroneus brevis	Calf - lateral	Distal two thirds of lateral surface of fibula	Dorsal surface of base of 5th metatarsal	L4, L5, S1		Superficial peroneal	Eversion and weak plantar flexion of foot
Peroneus longus	Calf - lateral	Distal two thirds of lateral surface of fibula	Base of first metatarsal; medial cuneiform	L4, L5, S1		Superficial peroneal	Eversion and weak plantar flexion of foot
Peroneus tertius	Calf - anterior	Fibula in common with lower fibers of extensor digitorum longus	Dorsal surface of base of 5th metatarsal	L4, L5, S1		Deep peroneal	Dorsiflexion and eversion of foot
Piriformis	Buttock	Sacrum (pelvic surface)	Greater trochanter of femur	S1, S2		S1 and S2 nerve roots	External rotation of thigh; abduction of thigh when thigh is flexed
Plantar interossei	Foot - deep layer	Medial side of 3rd - 5th metatarsals	Medial side of proximal phalanges of same toes	S1, S2		Lateral plantar	Adduction of toes
Plantaris	Calf - posterior	Lateral epicondyle of femur	Calcaneus (anteromedial to talar calcaneus)	L4, L5, S1		Tibial nerve	Weak plantar flexion of foot; weak flexion of leg
Popliteus	Calf - deep	Lateral condyle of femur	Proximal third of posterior aspect of tibia (proximal to soleal line)	L5, S1		Tibial nerve	Internal rotation of leg on femur; external rotation of femur on leg
Psoas Major	Thigh - anterior	Sides of T12-L5 vertebrae and intervertebral discs	Lesser trochanter of femur	L1-L3 Ventral rami			Flex femur at hip
Quadratus femoris	Buttock	Iscial tuberosity	Posterior surface of femur between greater and lesser trochanters	L4, L5, S1		Nerve to quadratus femoris	External rotation and adduction of thigh
Quadratus plantae	Foot - 2nd layer	Medial and lateral sides of plantar surface of calcaneus	Lateral and posterior margin of tendon of flexor digitorum longus	S1, S2		Lateral plantar	Aids in flexion of lateral four toes by modifying pull by flexor digitorum longus
Rectus femoris	Thigh - anterior	Anterior inferior iliac spine and groove superior to acetabulum	Base of patella and via patellar ligament to tibial tuberosity	L2, L3, L4	Posterior	Femoral nerve	Extend leg at knee joint. Flexes femur at hip.
Sartorius	Thigh - anterior	Anterior superior iliac spine and superior part of notch inferior to it	Superior part of medial surface of tibia.	L2, L3		Femoral nerve	Flexes, abducts, and laterally rotates femur at hip.
Semimembranosus	Thigh - posterior	Iscial tuberosity	Medial condyle of tibia	L5, S1		Sciatic nerve - tibial portion	Extension of thigh; flexion of leg; internal rotation of flexed leg
Semitendinosus	Thigh - posterior	Iscial tuberosity	Medial surface of proximal end of tibia	L5, S1		Sciatic nerve - tibial portion	Extension of thigh; flexion of leg; internal rotation of flexed leg
Soleus	Calf - posterior	Soleal (or popliteal) line and adjacent surface of tibia; proximal third of posterior	Calcaneus through tendon-calcaneus	S1, S2		Tibial nerve	Plantar flexion of foot
Superior gemellus	Buttock	Iscial spine	Superior border of obturator internus tendon	L5, S1, S2		Nerve to obturator internus	External rotation of thigh; abduction of thigh when thigh is flexed
Tensor fasciae latae	Thigh - anterior	Anterior superior iliac spine and anterior part of external lip of iliac crest	Iliotibial tract that attaches to lateral condyle of tibia	L4, L5		Superior gluteal	Abducts, medially rotates, and flexes femur.
Tibialis anterior	Calf - anterior	Lateral condyle of tibia, proximal two thirds of lateral surface of tibia, interosseous membrane.	medial cuneiform; base of first metatarsal	L4, L5, S1		Deep peroneal	Inversion and dorsiflexion of foot
Tibialis posterior	Calf - deep	Proximal two-thirds of posterior surface of tibia; proximal two thirds of fibula; interosseous	Navicular; cuneiforms; cuboid; bases of second to fourth metatarsals	L5, S1		Tibial nerve	Inversion and plantar flexion of foot
Vastus intermedius	Thigh - anterior	Anterior and lateral surfaces of body of femur.	Base of patella and via patellar ligament to tibial tuberosity	L2, L3, L4	Posterior	Femoral nerve	Extend leg at knee joint.
Vastus lateralis	Thigh - anterior	Great trochanter and lateral lip of linea aspera of femur.	Base of patella and via patellar ligament to tibial tuberosity	L2, L3, L4	Posterior	Femoral nerve	Extend leg at knee joint.
Vastus medialis	Thigh - anterior	Intertrochanteric line and medial lip of linea aspera of femur.	Base of patella and via patellar ligament to tibial tuberosity	L2, L3, L4	Posterior	Femoral nerve	Extend leg at knee joint.