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## GROSS ANATOMY OF THE MUSCULAR SYSTEM

Know for lab

MUSCLE NAME		ORIGIN	INSERTION	ACTION	NERVE SUPPLY/ NOTES
<i>Muscles of the Head and Neck:</i>					
<b>Occipito-frontalis</b>	<b>Frontalis</b>	Galea aponeurotica	Skin of eyebrows	raises eyebrows; wrinkles skin of forehead	Facial
	<b>Occipitalis</b>	Occipital & temporal	galea aponeurotica	fixes aponeurosis and pulls scalp posteriorly	Facial
<b>Orbicularis oculi</b>		Frontal & maxillary bones	Eyelids	Closes eye; blinking, squinting; draws eyebrows inferiorly	Facial
<b>Orbicularis oris</b>		Maxilla & mandible	Muscle and skin of mouth	Closes lips; purses and protrudes lips (as in kissing)	Facial
<b>Buccinator</b>		Maxilla and mandible	Orbicularis oris	Draws corner of mouth laterally; compresses cheek (whistling, sucking); holds food between teeth	Facial
<b>Masseter</b>		Zygomatic arch and maxilla	Body and ramus of mandible	Prime mover of mandible elevation	Trigeminal (Mandibular Branch)
<b>Temporalis</b>		Temporal fossa	Coronoid process of mandible	Elevates, retracts and moves mandible side-to-side	Trigeminal (Mandibular Branch)
<b>Sternocleidomastoid</b>		Sternum & clavicle	Mastoid process	Each turns head toward opposite side or tilts head laterally; together, flex head on chest	Accessory, Cervical Spinal Nerves (2-4)
<b>Platysma</b>		Fascia of chest	Lower margin of mandible and skin of mouth	Depresses mandible (agonist); pulls lip down and back; tenses skin of neck	Facial

MUSCLE NAME		ORIGIN	INSERTION	ACTION	NERVE SUPPLY/ NOTES
<i>Muscles of the Thorax, Shoulder, and Abdominal Wall:</i>					
<b>Rotator Cuff</b>	<b>Supraspinatus (rotator cuff)</b>	Scapula (supraspinous fossa)	Greater tubercle of humerus	Stabilizes shoulder (helps prevent downward dislocation); assists in abduction	Suprascapular
	<b>Infraspinatus (rotator cuff)</b>	Scapula (infraspinous foss)	Greater tubercle	Holds head of humerus in glenoid cavity; stabilizes shoulder; rotates humerus laterally	Suprascapular
	<b>Subscapularis (rotator cuff)</b>	Subscapular fossa	Lesser tubercle	Medially rotates humerus; helps hold humerus in glenoid cavity	Subscapular nerve
	<b>Teres minor (rotator cuff)</b>	Lateral dorsal scapula	Greater tubercle	Holds head of humerus in glenoid cavity; stabilizes shoulder; rotates humerus laterally; adducts arm at shoulder	Axillary
<b>Teres major</b>		Posterior inferior scapula	Intertubercular groove	Extends, medially rotates, adducts humerus (synergist of latissimus dorsi)	Lower subscapular
<b>Pectoralis major</b>		Medial clavicle; sternum; costal cartilages 1-6	Intertubercular groove	Prime mover of arm flexion at shoulder; rotates arm medially; adducts arm against resistance; pulls ribs upward	Pectoral muscles
<b>Pectoralis minor</b>		Ribs 3-5 (or 2-4)	Coracoid process of scapula	Draws scapula forward and down (with ribs fixed); draws ribs up (with scapula fixed)	Pectoral nerves
<b>Serratus anterior</b>		Ribs 1-8 (or 9)	Vertebral border of scapula	Protracts and holds scapula against ribs; rotates scapula laterally and upward; raises point of shoulder; boxer's muscle	Long thoracic nerve

MUSCLE NAME	ORIGIN	INSERTION	ACTION	NERVE SUPPLY/ NOTES
<i>Muscles of the Thorax, Shoulder and Abdominal Wall (continued):</i>				
<b>Deltoid</b>	Clavicle; acromion & spine	Deltoid tuberosity	Abduction, flexion and extension of arm at shoulder; medial rotation (anterior); lateral rotation (posterior)	Axillary
<b>Trapezius</b>	Occipital bone; cervical vertebrae	Acromion and spine of scapula; clavicle	Stabilizes, retracts, raises, rotates scapula; extends with scapula fixed	Accessory and cervical spinal nerves
<b>Latissimus dorsi</b>	Spines of lower thoracic & lumbar vertebrae	Intertubercular groove	Arm adduction, medial rotation and extension at shoulder; depresses scapula; brings arm down in power stroke	Thoracodorsal nerve
<b>Internal intercostal muscles</b>	Superior border of rib below	Inferior border of rib above	Pull down on rib for forced expiration	Intercostal nerves
<b>External intercostal muscles</b>	Inferior border of rib above	Superior border of rib below	Pull up on rib for inspiration	Intercostal nerves
<b>Diaphragm</b>	Ribs, sternum, costal cartilages	Central tendon	Increase size of thoracic cavity for inspiration	Phrenic
<b>External oblique</b>	Lower 8 ribs	Linea alba (some to pubic crest and iliac crest)	Individually, flex vertebral column laterally or rotate trunk; together, aid flexion of vertebral column; increase intra-abdominal pressure	Intercostal nerves
<b>Internal oblique</b>	Lumbar fascia, iliac crest	Linea alba (to pubic crest and iliac crest)	Individually, flex vertebral column laterally or rotate trunk; together, aid flexion of vertebral column; increase intra-abdominal pressure	Intercostal nerves

MUSCLE NAME	ORIGIN	INSERTION	ACTION	NERVE SUPPLY/ NOTES
<b><i>Muscles of the Thorax, Shoulder and Abdominal Wall (continued):</i></b>				
<b>Transversus abdominis</b>	Inguinal ligament; last 6 costal	Linea alba; pubic crest	increase intra-abdominal pressure	Intercostal nerves
<b>Rectus abdominis</b>	Pubic crest and symphysis	Sternum & 5-7 costal cartilages	Flex and rotate lumbar vertebral column; stabilize pelvis during walking; increase intra-abdominal pressure	Intercostal nerves
Levator scapulae	Transverse processes C1-C4	Medial border & spine of scapula	Elevates & adducts scapula; flexes neck to same side	Cervical spinal nerves & dorsal scapular nerve
<b>Rhomboids</b>	Spinous processes of C7 -T5	Medial border of scapula	Retracts scapula; rotates scapula downward (when arm is lowered against resistance; paddling muscle); stabilizes	Dorsal scapular nerve
<b><i>Muscles of the Upper Appendage (Arm) that act on the Forearm:</i></b>				
<b>Biceps brachii</b>	Coracoid process; tubercle over glenoid cavity	Radial tuberosity	Flexes and supinates arm at elbow; weak flexor at shoulder	Musculocutaneous
<b>Brachialis</b>	Front of distal humerus	Coronoid process	Flexes arm at elbow	Musculocutaneous
<b>Brachioradialis</b>	Supracondylar ridge humerus	Styloid process of radius	Synergist of arm flexion at elbow; stabilizes elbow (rapid movements)	Radial nerve
<b>Triceps brachii</b>	Scapula; humerus	Olecranon process	Extends arm at elbow; assists arm adduction	Radial

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<i>Muscles of the Upper Appendage (Arm) that act on the Forearm (continued):</i>				
<b>Supinator</b>	Lateral epicondyle	Proximal radius	Supinates forearm	Radial (Posterior interosseous)
<b>Pronator teres</b>	Medial epicondyle; coronoid process	Lateral radius (midshaft)	Pronates forearm; weak elbow flexor	Median
<b>Anconeus</b>	Lateral epicondyle	Olecranon process	Abducts ulna during pronation; aids elbow extension	Radial
<b>Coracobrachialis</b>	Coracoid process	Medial humerus	Flexion and abduction of humerus	Musculocutaneous
<i>Muscles of the Upper Appendage (Forearm) that act on the Wrist, Hand, and Fingers:</i>				
<b>Flexor carpi ulnaris</b>	Medial epicondyle; olecranon process	Carpals; 5 <sup>th</sup> metacarpals	Flexes wrist; adducts hand (with extensor carpi ulnaris); stabilizes wrist for finger extension	<b>Ulnar</b>
<b>Palmaris longus</b>	Medial epicondyle	Palmar aponeurosis	Weak wrist flexor; weak synergist of elbow flexion; not present in all people	Median
<b>Flexor carpi radialis</b>	Medial epicondyle	Base of 2 <sup>nd</sup> & 3 <sup>rd</sup> metacarpals	Flexes wrist; abducts wrist; weak synergist of elbow flexion	Median

<b><i>Muscles of the Upper Appendage (Forearm) that act on the Wrist, Hand, and Fingers (continued):</i></b>				
<b>Flexor digitorum superficialis</b>	Medial epicondyle; coronoid	Middle phalanges 2-5	Flexes wrist and middle phalanges of digits 2-5 (fast acting)	Median
<b>Extensor carpi ulnaris</b>	Lateral epicondyle	Base of 5 <sup>th</sup> metacarpal	Extends wrist; adducts wrist	Radial (Posterior interosseous)
<b>Extensor digitorum</b>	Lateral epicondyle	Distal phalanges 2-5	Extends digits, weak wrist extensor; abducts (flares) fingers	Radial (posterior interosseous)
Flexor pollicis longus	Radius; interosseous membrane	Distal thumb phalanx	Flexes distal phalanx of thumb	Median
Flexor digitorum profundus	Coronoid process anterior ulna	Distal phalanges of 2-5	Flexes digits (slow); weak synergist of wrist flexion	Ulnar (medial half); median (lateral half)
Pronator quadratus	Distal ulna	Distal anterior radius	Prime mover of forearm pronation	Median
<b>Extensor carpi radialis longus</b>	Lateral supracondylar ridge	Base of 2 <sup>nd</sup> metacarpal	Extends wrist; abducts wrist (with flexor radialis)	Radial
<b>Extensor carpi radialis brevis</b>	Lateral epicondyle	Base of 3 <sup>rd</sup> metacarpal	Extends wrist; abducts wrist; steadies wrist during finger extension	Radial

<b><i>Muscles of the Hand That Move the Thumb</i></b>					
Extensor pollicis longus	Dorsal radius and ulna	Base of distal thumb phalanx	Extends thumb	Radial (posterior interosseous)	
Extensor pollicis brevis	Dorsal radius and ulna	Base of proximal thumb phalanx	Extends thumb	Radial (posterior interosseous)	
Abductor pollicis longus	Posterior radius & ulna	Base of metacarpal 1	Abducts and extends thumb; abducts wrist	Radial (posterior interosseous)	
<b><i>Muscles of the Pelvis and Lower Appendage That Act on the Thigh and Upper Leg</i></b>					
<b><i>Iliopsoas</i></b>	<b>Iliacus</b>	iliac fossa and crest; sacrum	femur below lesser trochanter	prime mover of thigh flexion at hip	Femoral
	<b>Psoas major</b>	lumbar vertebrae	lesser trochanter	prime mover of thigh flexion at hip; lateral flexion of vertebral column; posture	Femoral
<b>Gluteus maximus</b>		Dorsal ilium; sacrum; coccyx	Gluteal tuberosity; iliotibial tract	Major thigh extensor, especially when thigh is flexed (as in climbing); laterally rotates & abducts thigh	Inferior gluteal
<b>Gluteus medius</b>		Lateral ilium	Greater trochanter	Thigh abduction; medial thigh rotation; stabilizes hip when walking	Superior gluteal

<b>Muscles of the Lower Appendage (Thigh) that act on the Knee:</b>					
<b>Hamstrings</b>	<b>Biceps femoris</b>	Ischial tuberosity / linea alba	Lateral condyle of tibia; fibula	Extends thigh, flexes knee; laterally rotates leg	(branch) Tibial
	<b>Semimembranosus</b>	Ischial tuberosity	Medial proximal tibia	Extends thigh, flexes knee; medially rotates leg	(branch) Tibial
	<b>Semitendinosus</b>	Ischial tuberosity	Medial proximal tibia	Extends thigh, flexes knee; medially rotates leg	(branch) Tibial
<b>Quadriceps femoris</b>	<b>Rectus femoris</b>	Anterior inferior iliac spine	Tibial tuberosity via patellar ligament	Extends knee; flexes thigh on hip	Femoral
	<b>Vastus lateralis</b>	Greater trochanter; linea aspera	Tibial tuberosity via patellar ligament	Extends knee; stabilizes knee	Femoral
	<b>Vastus intermedius</b>	linea aspera	Tibial tuberosity via patellar ligament	Extends knee; stabilizes knee	Femoral
	<b>Vastus medialis</b>	Anterolateral proximal femur	Tibial tuberosity via patellar ligament	Extends knee; stabilizes knee	Femoral



<b>Muscles of the Lower Appendage (Thigh) that act on the Knee (continued):</b>					
	<b>Sartorius</b>	Anterior superior iliac spine	Medial proximal tibia	Flexes abducts, laterally rotates knee; tailor's muscle	Femoral
<b>Adductors</b>	<b>Adductor magnus</b>	Ischial tuberosity; pubis	Linea aspera; adductor tubercle	<b>Anterior:</b> adducts, medially rotates thigh; flexes thigh <b>Posterior:</b> extends thigh	Obturator
	<b>Adductor longus</b>	Pubis	Linea aspera	Adducts, flexes thigh, medially rotates thigh	Obturator
	<b>Gracilis</b>	Pubis, ischium	Medial tibia	Adducts, flexes and medially rotates thigh; flexes knee	Obturator
<b>Muscles of the Lower Appendage (Leg) that act on the Knee:</b>					
<b>Triceps surae</b>	<b>Gastrocnemius</b>	Medial & lateral femoral condyles	Calcaneus	Plantar flexes foot when knee is extended; flexes knee when foot is dorsiflexed	(branch) Tibial
	<b>Soleus</b>	Tibia, fibula	Calcaneus	Plantar flexes	(branch) Tibial
	<b>Tibialis anterior</b>	Tibia, interosseous membrane	Medial cuneiform; 1 <sup>st</sup> metatarsal	Dorsiflexes and inverts foot	(branch) Common Fibular

<b><i>Muscles of the Lower Appendage (Leg) that act on the Foot</i></b>				
<b>Tibialis posterior</b>	Tibia & fibula	Tarsals & metatarsals 2-4	Foot inversion; plantar flexion	(branch) Tibial
<b>Fibularis (peroneus) longus</b>	Fibula	1 <sup>st</sup> metatarsal; medial cuneiform	Plantar flexes & everts foot	(branch) Common Fibular
Fibularis (peroneus) tertius	Distal anterior fibula	5 <sup>th</sup> metatarsal	Dorsiflexes & everts foot	(branch) Common Fibular
Fibularis (peroneus) brevis	Fibula	5 <sup>th</sup> metatarsal	Plantar flexes & everts foot	(branch) Common Fibular
<b>Flexor digitorum longus</b>	Tibia	Distal phalanges 2-5	Plantar flexes & inverts foot; flexes toes	(branch) Tibial
<b>Extensor digitorum longus</b>	Tibia; fibula	Middle & distal phalanges 2-5	Toe extension; dorsiflexes foot	(branch) Common Fibular