

Learning the Muscles

1. This two headed, bilateral pair of muscles flexes the neck (bilateral contraction), or rotates the neck (unilateral contraction). It derives its name from the points of origin (sternal head: anterior surface of the upper sternum; clavicular head: medial third of the clavicle) and insertion (mastoid process). You can easily palpate this muscle by turning your head to look over one shoulder and then run your fingers down from the opposite side of your head, just behind your ear (the location of the mastoid process). Note that the muscle splits at about the level of the angle of the mandible with the anterior division attaching to the sternal head and the posterior division attaching to the clavicular head.

2. This bilateral pair of dorsal muscles derives its name from the shape of the pair of muscles - Greek for "little table". Its origin is the occipital bone, spinous process of C7, and all thoracic vertebrae (T1-T12). Its insertion is the lateral third of the clavicle, acromion process, and spine of the scapula. It is capable of elevating, adducting, and depressing the scapula.

3. This two headed, bilateral pair of muscles derives its name from Latin for its location (chest) and size (large). Along with another, smaller muscle with a similar name, it forms the anterior wall of the axilla. Its origin is - clavicular head: anterior aspect of the clavicle; sternocostal portion: sternum and adjacent upper six costal cartilages. Its insertion is the upper shaft of the humerus.

4. This bilateral pair of muscles derives its name from its shape - an upside down triangle that looks like an upside down version of the fourth letter of the Greek alphabet (an upside version of " Δ "). Its origin is the clavicle, acromion process, and spine of the scapula. Its insertion is a similarly named tuberosity about half way down the lateral surface of the humerus. Since it has three parts (anterior, middle, and posterior) it can rotate (both medially and laterally), flex, abduct, and extend the humerus. It is one of the sites for IM injections.

5. This bilateral pair of muscles derives its name for have two heads and its location - the arm. It is easily exercised by doing "curls". Both heads originate at (different locations of) the scapula. The insertion is the radial tuberosity (medial aspect of the upper part of the radius) and connective tissue on the medial aspect of the forearm. In addition to flexing the elbow joint, it supinates the forearm.

6. This bilateral pair of muscles is named for being straight and its location - the belly. It is easily exercised by doing sit-ups and flexes the lumbar spine towards its origin - the pubic crest and symphysis. Its insertion is the xiphoid process and the 5th, 6th, and 7th costal cartilages.

7. This bilateral pair of muscles is named for being superficial to another muscle with a similar name and also for lying diagonally across the belly. It originates at the lower eight ribs and inserts in the anterior half of the iliac crest and via a tendinous band extending downwards from the sternum. It supports the abdominal visera against the action of gravity. Unilateral contraction bends the trunk laterally to the same side and rotates it towards the opposite side. It is exercised by doing twisting sit-ups.

8. This group of muscles in the thigh derives its name from Latin for "four-headed". All muscles in the group cross the knee joint but only the muscle in the center of the group crosses the hip joint. The origin for the center muscle is the anterior aspect of the ilium (anterior inferior iliac spine). The origin for the other muscles is the upper half of the shaft of the femur. All muscles in this group insert into the patella and then via a ligament, into the tibial tuberosity. The group extends the knee joint. Additionally, the center muscle flexes the hip joint.

_____ (muscle furthest from midline)

_____ (muscle in the center of the group)

_____ (muscle closest to midline)

_____ (the muscle group)

9. This muscle of the leg derives its name from its location - in front of the shinbone. Its origin is the lateral, lateral and anterior surface of the shin bone and its insertion is the medial edge of front of the foot. It dorsiflexes and inverts the foot.

10. This two headed muscle of the leg is part of a composite muscle known as the triceps surae which forms the prominent contour of the calf. It derives its name from the Greek words for stomach and leg. The origin of the medial head is the lower posterior surface of the femur above the medial condyle. The origin of the lateral head is the lateral condyle and lower posterior surface of the femur. Its insertion is the posterior surface of the calcaneus via the Achilles tendon. It plantar flexes the foot at the ankle and also assists in flexing the knee. It is a main propelling force in walking and running.

11. The muscle, along with the previous one, is part of the triceps surae (calf). It derives its name from Latin for being shaped like a particular type of fish. Its origin is the superior, posterior surfaces of the tibia and fibula. Along with the previous muscle, its insertion is via the Achilles tendon (aka calcaneal tendon). Incidentally, the calcaneal tendon is the thickest and strongest tendon in the body. Like the previous muscle, it also plantar flexes the ankle joint.

12. This muscle derives its name for having three heads and being located in the arm. Its origins are as follows: Long head - scapula just below the socket of the shoulder joint; Lateral head - upper half of the posterior aspect of the humerus; Medial head - lower half of the posterior aspect of the humerus. Its insertion is the olecranon process of the ulna. Its primary action is to extend the elbow joint.

13. This muscle derives its name from Latin for being the widest muscle of the back. Its origin is a broad sheet of tendon that attaches to the spinous processes of the lower six thoracic vertebrae and all lumbar and sacral vertebrae (T7-S5) as well as the posterior aspect of the iliac crest, the lower three or four ribs, and the inferior angle of the scapula. Its insertion is on the humerus, just below the shoulder joint. It extends the flexed arm. It also adducts and medially rotates the humerus.

14. This muscle is named for the Greek words meaning buttocks and biggest. It is the most coarsely fibered and heaviest muscle in the body and forms the bulk of the buttock. It is also one of the sites for IM injections (superior, lateral aspect). Its origin is the outer surface of the ilium and posterior surface of the sacrum and coccyx. Its insertion is the upper posterior aspect of the femur and, via a long tendon, the lateral condyle of the tibia. It extends the thigh (especially from a flexed position) and assists in lateral rotation of the thigh. It steadies the thigh and assists in rising from a sitting position.

Answer Key

1. Sternocleidomastoid (Greek: sternum=chest; Latin: clavicle=little key; Greek: breast-shaped=mastoid)
2. Trapezius (Greek: little table)
3. Pectoralis major (Latin: pectoralis=chest, major=large). The other muscle mentioned is the Pectoralis minor.
4. Deltoid (Greek: fourth letter of the alphabet=delta). Note: the insertion is the deltoid tuberosity.
5. Biceps brachii (Latin: biceps=two heads, brachii=arm)
6. Rectus abdominis (Latin rectus=straight , abdominis=belly/stomach)
7. External abdominal oblique (Latin: oblique=diagonal/slanted)
8. Vastus lateralis (furthest from midline, lateralis=lateral)
Rectus femoris (in the center)
Vastus medialis (closest to midline, medialis=medial)
Quadriceps (the group, Latin: four heads)
Note: there is actually a fourth muscle in this group that is beyond the scope of our text. It is the vastus intermedius.
9. Tibialis anterior (Latin: tibia=shinbone, anterior=in front of)
10. Gastrocnemius (Greek: gaster=stomach, kneme=leg)
11. Soleus (Latin: sole-shaped)
12. Triceps brachii (Latin: triceps=3 heads, brachii=arm)
13. Latissimus dorsi (Latin: latissimus=widest, dorsi=back)
14. Gluteus maximus (Greek: gloutos=buttocks, maximus=biggest)