



Trail Guide to the Body, 4th edition - Action, Origin, Insertion & Innervation Changes

As with the 2nd and 3rd editions, we have changed some of the AOIN information in the 4th edition of *Trail Guide to the Body*. Changing the **action**, **origin** and **insertion** information is always a balancing act. On the one hand, we want to ensure that *Trail Guide* reflects the ever-evolving consensus of the leading texts and anatomists. (No small order since they rarely agree!) On the other hand, we want to present the information in a manner that does not overwhelm the reader. Hopefully, we have created an accurate, yet accessible breakdown of the muscles.

As for the **innervation** information, we have expanded this for *all* of the muscles. See the bottom of this document for those changes.

The following is the list of the **new actions, origins and insertions**. If a particular muscle, A, O or I is **not** listed here, no changes have been made. Page numbers listed refer to the 4th edition.

Shoulder & Arm

Latissimus Dorsi (p. 71)

O

Inferior angle of scapula, spinous processes of last six thoracic vertebrae, last three or four ribs, thoracolumbar aponeurosis and posterior iliac crest **(Added: "inferior angle of scapula")**

I

Intertubercular groove of the humerus **(3rd ed. stated: Crest of the lesser tubercle of the humerus)**

Teres Major (p. 71)

O

Inferior angle and lower one-third of lateral border of the scapula **(Changed: "lower 1/2" to "lower 1/3" of lateral border and cut "lateral side of" the scapula)**

Infraspinatus (p. 74)

A

Laterally rotate the shoulder (glenohumeral joint)

Adduct the shoulder (G/H joint)

Stabilize the head of humerus in glenoid cavity

(Cut two actions: Extend the shoulder and horizontally abduct the shoulder)

Teres Minor (p. 74)

A

Laterally rotate the shoulder (glenohumeral joint)

Adduct the shoulder (G/H joint)

Stabilize the head of humerus in glenoid cavity

(Cut two actions: Extend the shoulder and horizontally abduct the shoulder)

O

Upper two-thirds of lateral border of the scapula **(3rd ed. stated: "Superior half of lateral border")**

Levator scapula (p. 83)

I
Medial border of scapula, between superior angle and superior portion of spine of scapula
(3rd ed. stated: Upper region of medial border and superior angle of scapula)

Serratus Anterior (p. 86)

A
With the origin fixed:
Abduct the scapula (scapulothoracic joint)
Upwardly rotate the scapula (S/T joint) (New action)
Depress the scapula (S/T joint)
Hold the medial border of the scapula against the rib cage
With the scapula fixed:
May act to elevate the thorax during forced inhalation **(3rd ed. stated: May act in forced inhalation)**

O
External surfaces of upper eight or nine ribs **(Added the word: "external")**

Pectoralis Minor (p. 92)

A
Depress the scapula (scapulothoracic joint)
Abduct the scapula (S/T joint)
Downwardly rotate the scapula (S/T joint) **(Changed from "Tilt the scapula anteriorly")**
With the scapula fixed:
Assist to elevate the thorax during forced inhalation **(3rd ed. stated: Assist in forced inhalation)**

I
Medial surface of coracoid process of the scapula **(Added: "Medial surface of...")**

Subclavius (p. 94)

A
Depress the clavicle and draw it anteriorly (3rd ed stated: Draw clavicle inferiorly and anteriorly)
Elevate the first rib (to assist during inhalation)
Stabilize the sternoclavicular joint

I
Inferior surface of middle one-third of clavicle **(3rd ed stated: Inferior, lateral aspect of the clavicle")**

Forearm & Hand

Brachioradialis (p. 133)

O
Proximal two-thirds of the lateral supracondylar ridge of humerus **(3rd ed. stated: Lateral supracondylar ridge of humerus)**

Extensor Carpi Radialis Longus (p. 135)

O
Distal one-third of the lateral supracondylar ridge of humerus **(Added: "Distal 1/3 of...")**

Extensor Carpi Radialis Brevis (p. 135)

O
Common extensor tendon from the lateral epicondyle of humerus **(3rd ed stated: Lateral supracondylar ridge of humerus)**

Extensor Digitorum (p. 135)

I
Bases of middle and distal phalanges of second through fifth fingers **(Added: "Bases of...")**

Anconeus (p. 139)

I

Olecranon process and posterior, proximal surface of ulna (**3rd ed. stated: Olecranon process and lateral edge of ulnar shaft**)

Extensor Indicis (p. 139)

A

Extend the second finger (metacarpophalangeal joint)

Adduct the second finger (**3rd ed. stated: Assist to adduct...**)

May assist to extend the wrist (radiocarpal joint) (**New action**)

Flexor Carpi Radialis (p. 140)

A

Flex the wrist (radiocarpal joint)

Abduct the wrist (radiocarpal joint)

May assist to flex the elbow (humeroulnar joint) (**Added: "May assist to..."**)

Palmaris Longus (p. 140)

A

Tense the palmar fascia

Flex the wrist (radiocarpal joint)

May assist to flex the elbow (humeroulnar joint) (**Added: "May assist to..."**)

Flexor Carpi Ulnaris (p. 140)

O

Humeral head: Common flexor tendon from medial epicondyle of humerus

Ulnar head: Posterior surface of proximal two-thirds of ulna (**3rd ed. stated: Posterior surface of proximal half of ulnar shaft**)

I

Pisiform, hook of the hamate and base of fifth metacarpal (**3rd ed. stated: "Pisiform" only**)

Flexor Digitorum Superficialis (p. 140)

O

Common flexor tendon from medial epicondyle of humerus, ulnar collateral ligament, coronoid process of ulna, interosseous membrane and proximal shaft of radius (**Added "interosseous membrane" and the word "proximal" before shaft of radius**)

I

Sides of middle phalanges of second through fifth fingers (**Cut "By four tendons into..."**)

Flexor Digitorum Profundus (p. 140)

I

Bases of distal phalanges, palmar surface of second through fifth fingers (**Cut "By four tendons into..."**)

Pronator Teres (p. 146)

O

Common flexor tendon from medial epicondyle of humerus and coronoid process of the ulna

(**3rd ed. stated: Medial epicondyle of the humerus, common flexor tendon and coronoid process of the ulna**)

Supinator (p. 147)

O

Lateral epicondyle of humerus, radial collateral ligament, annular ligament and supinator crest of the ulna

(**Added: Lateral epicondyle of humerus**)

I

Anterior, lateral surface of proximal one-third of radial shaft (**3rd ed. stated: Lateral surface of proximal shaft of the radius**)

Abductor Pollicis Longus (p. 151)

A

Abduct the thumb (carpometacarpal joint)
Extend the thumb (carpometacarpal joint)
Abduct the wrist (radiocarpal joint) **(New action)**

Extensor Pollicis Longus (p. 151)

A

Extend the thumb (interphalangeal joint)
Extend the thumb (metacarpophalangeal and carpometacarpal joints) **(3rd ed. stated: Assists to extend...)**
Abduct the wrist (radiocarpal joint) **(New action)**

I

Longus: Base of distal phalanx of thumb **(Added: "Base of...")**

Extensor Pollicis Brevis (p. 151)

A

Extend the thumb (interphalangeal joint)
Extend the thumb (metacarpophalangeal and carpometacarpal joints) **(3rd ed. stated: "Assists to extend...")**
Abduct the wrist (radiocarpal joint) **(New action)**

I

Brevis: Base of proximal phalanx of thumb **(Added: "Base of...")**

Flexor Pollicis Longus (p. 151)

A

Flex the thumb (interphalangeal joint)
Flex the thumb (metacarpophalangeal and carpometacarpal joints) **(3rd ed. stated: "Assists to flex...")**
Assist to flex the wrist (radiocarpal joint) **(Added: "Assist to flex...")**

I

Base of distal phalanx of thumb **(Added: "Base of...")**

Abductor Digiti Minimi (p. 159)

O

Pisiform and tendon of flexor carpi ulnaris **(3rd ed. stated: Pisiform and flexor retinaculum)**

Opponens Digiti Minimi (p. 159)

I

Shaft of fifth metacarpal, ulnar surface **(3rd ed. stated: "Shaft of fifth metacarpal" only)**

Spine & Thorax

Semispinalis Capitis (p. 200)

O

Transverse processes of C-4 to T-5 **(3rd ed. stated: TVPs of thoracic vertebrae, articular processes of lower cervicals)**

I

Between the superior and inferior nuchal lines of the occiput
(3rd ed. stated: Spinous processes of upper thoracic and cervicals (except C-1), and superior nuchal line of occiput)

Splenius Capitis (p. 203)

O

Inferior one-half of ligamentum nuchae and spinous processes of C-7 to T-4
(3rd ed. stated: Ligamentum nuchae, spinous processes of C-7 to T-3)

Splenius Cervicis (p. 203)

I

Transverse processes of C-1 to C-3 (**3rd ed. stated: Transverse processes of the upper cervical vertebrae**)

Suboccipitals (p. 205)

A

Oblique Capitis Superior

Rock and tilt the head back into extension

Laterally flex the head to the same side (**New action**)

Rectus Abdominis (p. 209)

A

Flex the vertebral column

Tilt pelvis posteriorly (**New action**)

External Oblique (p. 209)

O

External surfaces of fifth to twelfth ribs (**3rd ed. stated: Lower eight ribs**)

Intercostals (p. 215)

A

External Intercostals: Draw the ribs superiorly (increasing the space of the thoracic cavity) to assist with inhalation

Internal Intercostals: Draw the ribs inferiorly (decreasing the space of the thoracic cavity) to assist with exhalation

(**Both are similar to 3rd edition, just using different language**)

Head, Neck & Face

Sternocleidomastoid (p. 244)

A

Unilaterally:

Laterally flex the head and neck to the same side

Rotate the head and neck to the opposite side

Bilaterally:

Flex the neck

Assist to elevate the ribcage during inhalation (**3rd ed. stated: Assist in inhalation - elevation of the rib cage**)

Posterior Scalene (p. 246)

O

Transverse processes of sixth and seventh cervical vertebrae (posterior tubercles) (**3rd ed. stated: TVPs of fifth and sixth cervical vertebrae - posterior tubercles**)

Masseter (p. 250)

A

Elevate the mandible (temporomandibular joint)

May assist to protract the mandible (TM joint) (**New action**)

Temporalis (p. 251)

I

Coronoid process and anterior edge of ramus of the mandible (**Added: "Anterior edge of ramus of the mandible"**)

Platysma (p. 257)

A

Assist to depress the mandible (temporomandibular joint)

Tighten the fascia of the neck

Draw down corner of the mouth (**New action**)

Pelvis & Thigh

Quadriceps Femoris Group (p. 306)

O

Vastus Lateralis: Lateral lip of linea aspera, gluteal tuberosity and greater trochanter (**Added: "greater trochanter"**)

I

All: Tibial tuberosity (via the patella and patellar ligament) (**Added: "via the patella and patellar ligament"**)

Biceps Femoris (p. 311)

A

Flex the knee (tibiofemoral joint)

Laterally rotate the flexed knee (T/F joint)

Long head: Extend the hip (coxal joint)

Long head: Assist to laterally rotate the hip (coxal joint) (**Added "Assist to..."**)

Tilt the pelvis posteriorly

Semitendinosus (p. 311)

A

Flex the knee (tibiofemoral joint)

Medially rotate the flexed knee (T/F joint)

Extend the hip (coxal joint)

Assist to medially rotate the hip (coxal joint) (**Added "Assist to..."**)

Tilt the pelvis posteriorly

Semimembranosus (p. 311)

A

Flex the knee (tibiofemoral joint)

Medially rotate the flexed knee (T/F joint)

Extend the hip (coxal joint)

Assist to medially rotate the hip (coxal joint) (**Added "Assist to..."**)

Tilt the pelvis posteriorly

Gluteus Maximus (p. 315)

I

Iliotibial tract (upper fibers) and gluteal tuberosity (lower fibers) (**3rd ed. stated the opposite**)

Gluteus Medius (p. 315)

O

Gluteal surface of ilium, between posterior and anterior gluteal lines, just below the iliac crest (**3rd ed. stated: Gluteal surface of the ilium between the iliac crest and the posterior and anterior gluteal lines**)

I

Lateral aspect of greater trochanter (**Added: "Lateral aspect of..."**)

Gluteus Minimus (p. 315)

I

Anterior aspect of greater trochanter (**3rd ed. stated: Anterior border of greater trochanter**)

Gracilis (p. 319)

O

Inferior ramus of pubis (**Removed "Ramus of ischium"**)

Piriformis (p. 328)

I

Superior aspect of greater trochanter (**Added: "Superior aspect of..."**)

Obturator Externus (p. 328)

O

Rami of pubis and ischium, obturator membrane (**3rd ed. stated: Superior and inferior rami of pubis**)

Gemellus Superior (p. 328)

I

Medial surface of greater trochanter (**3rd ed. stated: Upper border of greater trochanter**)

Gemellus Inferior (p. 328)

I

Medial surface of greater trochanter (**3rd ed. stated: Upper border of greater trochanter**)

Psoas Major (p. 332)

A

With the origin fixed:

Flex the hip (coxal joint)

May laterally rotate the hip (coxal joint)

With the insertion fixed:

Flex the trunk toward the thigh

Tilt pelvis anteriorly

Unilaterally:

Assist to laterally flex the lumbar spine

(3rd ed. stated:

Flex the hip

Laterally rotate the hip

Adduct the hip)

Iliacus (p. 332)

A

With the origin fixed:

Flex the hip (coxal joint)

May laterally rotate the hip (coxal joint)

With the insertion fixed:

Flex the trunk toward the thigh

Tilt pelvis anteriorly

(3rd ed. stated:

Flex the hip

Laterally rotate the hip

Adduct the hip)

Leg & Foot

Soleus (p. 371)

O

Soleal line; proximal, posterior surface of tibia; posterior aspect of head of fibula and proximal, posterior surface of tibia
(3rd ed. stated: Soleal line, posterior surface of tibia and proximal, posterior surface of fibula)

Plantaris (p. 374)

O

Lateral supracondylar line of femur (**3rd ed. stated: Lateral condyle of the femur**)

Popliteus (p. 375)

O

Lateral condyle of the femur (**3rd ed. stated: Lateral epicondyle of the femur**)

Peroneus Longus (p. 376)

O

Head of fibula and proximal two-thirds of lateral fibula (**Added: "Head of fibula..."**)

Tibialis Anterior (p. 378)

O

Lateral condyle of tibia; proximal, lateral surface of tibia and interosseous membrane (**Added: "Lateral condyle of tibia..."**)

Extensor Digitorum Longus (p. 378)

O

Lateral condyle of tibia; proximal, anterior shaft of fibula and interosseous membrane (**Added: "Lateral condyle of tibia"**)

Tibialis Posterior (p. 381)

O

Proximal, posterior shafts of tibia and fibula; and interosseous membrane

(3rd ed. stated: Proximal, posterior shaft of tibia, proximal fibula and interosseous membrane)

I

All five tarsal bones and bases of second through fourth metatarsals

(3rd ed. stated: Navicular, cuneiforms, cuboid and bases of second through fourth metatarsals)

Extensor Digitorum Brevis (p. 387)

O

Dorsal surface of calcaneus (**3rd ed. stated: Calcaneus - dorsal surface**)

Flexor Digitorum Brevis (p. 388)

O

Medial process of calcaneus and plantar aponeurosis (**3rd ed. stated: Calcaneus - plantar surface**)

Abductor Hallucis (p. 388)

O

Medial process of calcaneus and plantar aponeurosis (**3rd ed. stated: Calcaneus - plantar surface**)

Abductor Digiti Minimi (p. 388)

O

Lateral process of calcaneus and plantar aponeurosis (**3rd ed. stated: Calcaneus - plantar surface**)

Extensor Hallucis Brevis (p. 390)

O

Dorsal surface of calcaneus (**3rd ed. stated: Calcaneus - dorsal surface**)

Adductor Hallucis (p. 390)

A

Adduct the first toe

Assist to maintain transverse arch of foot

Assist to flex the first toe (**New action**)

I

Lateral surface of base of proximal phalanx of first toe (**Removed " ...and lateral sesamoid bone"**)

Quadratus Plantae (p. 391)

O

Medial and lateral sides of plantar surface of calcaneus (**Added: "Medial and lateral surfaces of..."**)

Plantar Interossei (p. 391)

○
Medial surfaces of 3rd-5th metatarsals (**3rd ed. stated: Bases of third through fifth metatarsals**)

Dorsal Interossei (p. 391)

○
Adjacent surfaces of all metatarsals (**3rd ed. stated: Shafts of first through fifth metatarsals**)



Trail Guide to the Body, 4th edition - Innervation Changes

Shoulder & Arm

Deltoid - Axillary, **C5, 6**

Trapezius - Spinal portion of cranial nerve XI (accessory) & ventral ramus, **C2, 3, 4**

Latissimus Dorsi – Thoracodorsal, **C6, 7, 8**

Teres Major – Lower subscapular, **C5, 6, 7**

Supraspinatus – Suprascapular **C4, 5, 6**

Infraspinatus – Suprascapular, **C(4), 5, 6**

Teres Minor – Axillary, **C5, 6**

Subscapularis – Upper and lower subscapular, **C5, 6, 7**

Rhomboid Major and Minor – Dorsal scapular, **C4, 5**

Serratus Anterior – Long thoracic, **C5, 6, 7, 8**

Levator Scapula – Cervical, **3, 4**, and Dorsal scapular, **C4, 5**

Pectoralis Major –

Upper Fibers – Lateral pectoral, **C5, 6, 7**

Lower fibers – Lateral and medial pectoral, **C6, 7, 8, T1**

Pectoralis Minor – Medial pectoral, w/fibers from a communicating branch of the lateral pectoral; **C(6), 7, 8, T1**

Subclavius – Subclavian **C5, 6**

Biceps Brachii – Musculocutaneous **C5, 6**

Triceps Brachii – Radial, **C6, 7, 8, T1**

Coracobrachialis – Musculocutaneous, **C6, 7**

Forearm & Hand

Brachialis – Musculocutaneous, small branch from radial, **C5, 6**

Brachioradialis – Radial, **C5, 6**

Extensor Carpi Radialis Longus – Radial, **C5, 6, 7, 8**

Extensor Carpi Radialis Brevis - Radial, **C6, 7, 8**

Extensor Carpi Ulnaris – Radial **C6, 7, 8**

Extensor Digitorum – Radial **C6, 7, 8**

Anconeus – Radial, **C7, 8**

Extensor Indicis – Radial, **C6, 7, 8**

Flexor Carpi Radialis – Median, **C6, 7, 8**

Palmaris Longus – Median, **C(6), 7, 8, T1**

Flexor Carpi Ulnaris – Ulnar, **C7, 8, T1**

Flexor Digitorum Superficialis – Median, **C7, 8, T1**

Flexor Digitorum Profundus –

First and second: Median, **C7, 8, T1**

Third and Fourth: Ulnar, **C7, 8, T1**

Pronator Teres – median, **C6, 7**

Pronator Quadratus – Median, **C7, 8, T1**

Supinator – Radial, **C5, 6, (7)**

Opponens Pollicis – Median, **C6, 7, 8, T1**

Adductor Pollicis – Ulnar **C8, T1**

Abductor Pollicis Brevis - Median, **C6, 7, 8, T1**

Flexor Pollicis Brevis –

Superficial Head: Median, **C6, 7, 8, T1**

Deep Head: Ulnar, **C8, T1**

Abductor Pollicis Longus – Radial, C6, **7, 8**
 Extensor Pollicis Longus – Radial, C6, **7, 8**
 Extensor Pollicis Brevis – Radial, C6, **7, 8**
 Flexor Pollicis Longus – Median, C(6), 7, **8, T1**
 Lumbricals –
 First and Second: Median, C(6), 7, **8, T1**
 Third and fourth: Ulnar C(7), **8, T1**
 Palmer Interossei – Ulnar, **C8, T1**
 Dorsal Interossei – Ulnar, **C8, T1**
 Abductor Digiti Minimi – Ulnar, C(7), **8, T1**
 Flexor Digiti Minimi Brevis – Ulnar, C(7), **8, T1** (
 Opponens Digiti Minimi - Ulnar, C(7), **8, T1**

Spine & Thorax

Spinalis – Spinal
 Longissimus – Spinal
 Iliocostalis – Spinal
 Multifidi – Spinal
 Rotatores – Spinal
 Semispinalis Capitis – Cervical
 Splenius Capitis – Cervical
 Splenius Cervicis – Cervical
 Rectus Capitis Posterior Major – Suboccipital
 Rectus Capitis Posterior Minor – Suboccipital
 Oblique Capitis Superior – Suboccipital
 Oblique Capitis Inferior – Suboccipital
 Quadratus Lumborum – Lumbar plexus, T12, **L1, 2, 3**
 Rectus Abdominis – T5, 6, **T7-11**, T12, ventral rami
 External Oblique – (T5, 6), **T7-11**, T12
 Internal Oblique – T7, 8, **T9-12**, **L1**, iliohypogastric and ilioinguinal, ventral rami
 Transverse Abdominis – **T7-12**, **L1** iliohypogastric and ilioinguinal, ventral divisions
 Diaphragm – Phrenic, C3, **4, 5**
 Intercostals – Thoracic
 Serratus Posterior Superior – T1, 2, 3, 4
 Interspinalis – Spinal
 Intertransversarii – Spinal
 Serratus Posterior Inferior – T9, 10, 11, (12)

Head, Neck & Face

Sternocleidomastoid – C(1), **2, 3**
 Scalenes (All) – C(3), **4-8**
 Masseter – Trigeminal (V), (mandibular division)
 Temporalis – Trigeminal (V), (mandibular division)
 Suprahyoids –
 Geniohyoid – C1, 2
 Mylohyoid – Trigeminal (V)
 Stylohyoid – Facial (VII)
 Digastric –
 Anterior Belly - Trigeminal (V), (mandibular division)
 Posterior Belly – Facial (VII)
 Infrahyoids –
 Thyrohyoid – C1, 2
 Sternohyoid – C1, 2, 3
 Sternothyroid - C1, 2, 3
 Omohyoid - C1, 2, 3
 Platysma – Facial VII

Occipitofrontalis – Facial (VII)
Pterygoids
 Medial – Trigeminal (V)
 Lateral – Trigeminal (V)
Longus Capitis – C1, 2, 3, (4)
Longus Colli – C2-6, (7)
Muscles of Facial Expression – Facial (VII)

Pelvis & Thigh

Rectus Femoris – Femoral, L2, 3, 4
Vastus Medialis - Femoral, L2, 3, 4
Vastus Lateralis - Femoral, L2, 3, 4
Vastus Intermedius – Femoral, L2, 3, 4
Biceps Femoris –
 Long Head - Sciatic (tibial branch), L5, S1, 2, 3
 Short Head - Sciatic (peroneal branch), L5, S1, 2
Semitendinosus – Sciatic (tibial branch), L4, 5, S1, 2
Semimembranosus – Sciatic (tibial branch), L4, 5, S1, 2
Gluteus Maximus – Inferior gluteal, L5, S1, 2
Gluteus Medius – Superior gluteal, L4, 5, S1
Gluteus Minimus – Superior gluteal, L4, 5, S1
Adductor Magnus – Obturator, L2, 3, 4 and sciatic, L4, 5, S1
Adductor Longus – Obturator, L2, 3, 4
Adductor Brevis – Obturator, L2, 3, 4
Pectineus – Femoral and obturator, L2, 3, 4
Gracilis – Obturator, L2, 3, 4
Tensor Fasciae Latae - Superior gluteal, L4, 5, S1
Sartorius - Femoral, L2, 3, (4)
Piriformis – Sacral plexus, L(5), S1, 2
Quadratus Femoris – Sacral plexus, L4, 5, S1, (2)
Obturator Internus – Sacral plexus, L5, S1, 2
Obturator Externus – Obturator, L3, 4
Gemellus Superior – Sacral plexus, L5, S1, 2
Gemellus Inferior – Sacral plexus, L4, 5, S1, (2)
Psoas Major – Lumbar plexus, L1, 2, 3, 4
Iliacus – Femoral, L(1), 2, 3, 4
Psoas Minor – Lumbar plexus, L1, 2

Leg & Foot

Gastrocnemius - Tibial, S1, 2
Soleus - Tibial, L5, S1, 2
Plantaris – Tibial, L4, 5, S1, (2)
Popliteus – Tibial, L4, 5, S1
Peroneus Longus – Superficial peroneal, L4, 5, S1
Peroneus Brevis – Superficial peroneal, L4, 5, S1
Tibialis Anterior – Deep peroneal, L4, 5, S1
Extensor Digitorum Longus – Peroneal, L4, 5, S1
Extensor Hallucis Longus – Deep peroneal, L4, 5, S1
Tibialis Posterior – Tibial, L(4), 5, S1
Flexor Digitorum Longus – Tibial, L5, S1, (2)
Flexor Hallucis Longus – Tibial, L5, S1, 2
Extensor Digitorum Brevis – Deep peroneal, L4, 5, S1
Flexor Digitorum Brevis – Tibial, L4, 5, S1
Abductor Hallucis – Tibial, L4, 5, S1

Abductor Digiti Minimi – Tibial, **S1, 2**
Extensor Hallucis Brevis – Deep peroneal, L4, **5, S1**
Flexor Hallucis Brevis – Tibial, L4, **5, S1**
Adductor Hallucis – Tibial, **S1, 2**
Flexor Digiti Minimi – Tibial, **S1, 2**
Quadratus Plantae – Tibial, **S1, 2**
Plantar Interossei – Tibial, **S1, 2**
Dorsal Interossei – Tibial, **S1, 2**
Lumbricals of the Foot –
 Lumbricals 1 – Tibial, L4, **5, S1**
 Lumbricals 2-4 – Tibial, L(4), (5), **S1, 2**