

Appendix: Layers of the Plantar and Dorsal Intrinsic Foot Muscles. The muscles are numbered in reference to the labeled muscles in figure 6.

Muscle	Origin	Insertion	Action
Plantar Intrinsic Foot Muscle Layer 1			
1. Abductor Hallucis	Medial process of calcaneal tuberosity, plantar aponeurosis, Flexor retinaculum	Medial base of 1 st proximal phalanx.	Abduction and flexion of 1 st metatarsophalangeal joint.
2. Flexor Digitorum Brevis	Medial process of calcaneal tuberosity, plantar aponeurosis, intermuscular septum	Medial and lateral aspects of the middle phalangees of toes 2-5.	Flexion of the metatarsophalangeal and proximal interphalangeal joints of toes 2-5.
3. Abductor Digiti Minimi	Lateral process of calcaneal tuberosity, plantar aponeurosis, intermuscular septum	Lateral base of the 5 th proximal phalanx.	Abduction and flexion of 5 th metatarsophalangeal joint.
Plantar Intrinsic Foot Muscle Layer 2			
4. Quadratus Plantae	Medial to lateral plantar surface of calcaneus	Tendon of the FDL	Modifies pull of FDLT and assists with flexion of 2-5 toes.
5. Lumbricals	FDL tendons	Medial aspect of proximal phalanx and dorsal expansion of extensor digitorum longus tendons 2-5.	Flex metatarsophalangeal joints and extend digits of toes 2-5.
Plantar Intrinsic Foot Muscle Layer 3			
6. Flexor Digiti Minimi Brevis	Base of the 5 th metatarsal	Base of the 5 th proximal phalanx	Flexion of the 5 th metatarsophalangeal joint
7a. Adductor Hallucis Oblique Head	Base of metatarsals 2-4	Lateral base of the great toe proximal phalanx	Adduct 1 st digit and support transverse arch
7b. Adductor Hallucis Transverse Head	Plantar ligaments of the metatarsophalangeal joints 3-5.		
8. Flexor Hallucis Brevis	Plantar surface of cuboid and lateral cuneiforms	Medial and lateral aspects of the great toe proximal phalanx	Flexion of the great toe metatarsophalangeal joint
Plantar Intrinsic Foot Muscle Layer 4			
9. Plantar Interossei	Medial aspect of the base of metatarsals 3-5	Medial aspect of the base of the proximal phalanges 3-5	Adduction of toes and flexion of metatarsophalangeal joints
Dorsal Intrinsic Foot Muscles			
10. Dorsal Interossei	Adjacent sides of metatarsals 1-5	Medial aspect of 2 nd proximal phalanx and lateral aspect of proximal phalanges 2-4	Abduction of toes and flexion of metatarsophalangeal joints
11. Extensor Digitorum Brevis	Distal aspect of the superior and lateral calcaneus	Extensor Hallucis and Digitorum Longus Tendons for Toes 1-4	Extend the metatarsophalangeal joints of toes 1-4