

Table 16.2 Manual Muscle Testing for the Leg, Ankle, and Foot Musculature

Motion	Athlete position	Stabilizing hand placement	Resistance hand placement	Instruction to athlete	Primary muscles tested
Ankle dorsiflexion	Seated, leg extended off table	Distal posterior tibia	Dorsomedial surface of foot	Dorsiflex and invert the foot by bringing the big toe toward the shin.	Tibialis anterior
Ankle plantar flexion (grade < 5)	Seated, foot and leg extended off table	Distal anterior tibia	Plantar surface of foot	With knee extended (gastrocnemius) and flexed >45° (soleus), point foot against resistance.	Gastrocnemius, soleus
Ankle plantar flexion (grade 5)	Standing on one leg using hand on table to balance	None	None—uses body weight	Raise heel 20 times, or until unable to complete full motion.	Gastrocnemius, soleus
Inversion	Side-lying on side to be tested, foot slightly plantar flexed	Distal medial tibia	Medial aspect of foot	Raise medial border of foot toward ceiling.	Tibialis posterior
Eversion	Side-lying on side not to be tested, foot slightly plantar flexed	Distal lateral tibia	Lateral aspect of foot	Raise lateral border of foot toward ceiling.	Peroneal longus and brevis
2nd-5th MTP and IP toe flexion	Supine, foot resting on table	MTP: metatarsal PIP: proximal phalanx DIP: middle phalanx	MTP: proximal phalanx PIP: middle phalanx DIP: distal phalanx	Flex or curl toes.	MTP: lubricales PIP: flexor digitorum brevis DIP: flexor digitorum longus
2nd-5th MTP and IP toe extension	Supine, foot resting on table	Metatarsals	Distal phalanx	Extend toes.	Extensor digitorum longus and brevis
Great toe flexion	Supine, foot resting on table	MTP: 1st metatarsal IP: MTP joint	MTP: proximal phalanx IP: distal phalanx	Flex great toe.	MTP: flexor hallucis brevis IP: flexor hallucis longus
Great toe extension	Supine, foot resting on table	1st metatarsal	Proximal and distal phalanx	Extend great toe.	Extensor hallucis brevis (PIP) and longus (DIP)
Great toe abduction	Supine, foot resting on table	1st metatarsal	Medial aspect of proximal phalanx	Abduct toe against resistance. (Or place athlete in abduction and say, "Don't let me move you.")	Abductor hallucis

MTP = metatarsophalangeal joint; PIP = proximal interphalangeal joint; DIP = distal interphalangeal joint; IP = interphalangeal joint.

From S. Shultz, P. Houglum, and D. Perrin, 2016. *Examination of musculoskeletal injuries*, 4th ed. (Champaign, IL: Human Kinetics).