Ultrasound-guided Tenotomy/PRP Protocol: Achilles Mid-Portion Tendinopathy

Time	Goals	Precautions/Restrictions	Treatment
Week 0 – 1	• Protect affected site • Reduce pain and swelling • Safe use of crutches	• No use of NSAIDs or ice for 4 weeks • NWB with crutches in CAM boot	• Rest • Begin gentle active ankle ROM • Gait training with crutches • Initial visit: Complete Research App • BFR-0-2 weeks
Weeks 1 – 2	• Reduce pain and swelling • Restore active ankle ROM • Minimize muscle atrophy • Progress weight bearing	• No use of NSAIDs or ice for 4 weeks • PWB with crutches in CAM boot (pain limited)	• Rest • Continue gentle active ankle ROM • Begin core strengthening • Initiate lower limb strengthening in NWB • Gait training for PWB with crutches • Upper Body Aerobic and Strength Exercises
Weeks 2 – 4	• No pain or swelling • Full, active ankle ROM • Continue weight bearing progression • Restore normal joint mechanics • Increase tendon tolerance to daily activities	• No use of NSAIDs or ice for 4 weeks • Week 2: WBAT, CAM boot for community ambulation • Avoid Painful exercises with pain >4/10	• Continue active ankle ROM as needed • Joint mobilizations as needed • Initiate gentle ankle dorsiflexion stretching • Begin isometric ankle strengthening • Core strengthening • Lower limb strengthening PWB à WBAT • Gait training for WBAT in CAM boot without crutches • Begin non-impact aerobic exercise (stationary bike, UBE, • Anti-gravity treadmill for walking gait/Pool

Weeks 4 – 6	• Full, active ankle ROM
	• Normalize, independent walking gait
	• Progress ankle strengthening exercises
	• Initiate balance/proprioception
	• Begin functional activities
		• Avoid abrupt increases in tendon stress with exercise, lifting, or impact activity
		• Avoid high impact/intensity exercise such as running, jumping, and heavy weight lifting
			• Progressive ankle strengthening with resistance bands
			• Gait training progressing to independent
			• Global lower limb strengthening
			  ○ Functional strengthening exercises (bridge, mini-squat, step up)
			• Double and single limb balance/proprioception
			• Core strengthening
			• Aerobic training:
			  ○ Walking program when walking with normal gait mechanics
			  ○ Stationary bike
			• Week 4: Complete Research App

Weeks 6 – 8	• No pain with ADLs • Increase intensity of ankle strengthening exercises • Pain-free 5/5 ankle DF and PF strength with MMT • Focus on return to sport activities	• Avoid painful activities/exercises of pain >4/10	• Increase loading capacity for lower limb strengthening exercises/Core exercises • Continue balance/proprioceptive training • Begin double and single limb strengthening on leg press ○ Multi- to single joint (press à heel raise) • Plyometric, agility, and work/sport-specific training • Gradual return to work/sport progression

Single Leg Heel Raise Test

- May perform prior to initiation of running program to determine strength of ankle plantarflexors

Table 4
Estimates of the normative median (50th), lower (2.5th) and upper (97.5th) percentile values (upper, lower) of the median number of heel-rise repetitions completed during the heel-rise test, presented by sex for each decade of life (i.e. 20 to 80 years).

Age (years)	Male		Female	
	Left side	Right side	Left side	Right side
20	37.4 (15.8, 51.1)	37.5 (16.7, 55.3)	29.6 (13.2, 47.2)	30.7 (13.6, 49.4)
30	32.7 (12.7, 47.5)	33.0 (13.7, 50.4)	26.8 (10.6, 44.2)	28.0 (11.1, 46.0)
40	28.1 (9.6, 43.9)	28.5 (10.6, 45.6)	24.0 (8.0, 41.2)	25.3 (8.6, 42.5)
50	23.5 (6.5, 40.4)	24.0 (7.6, 40.7)	21.3 (5.5, 38.3)	22.6 (6.4, 39.1)
60	18.8 (3.4, 36.8)	19.5 (4.5, 35.9)	18.5 (2.9, 35.3)	19.9 (3.5, 35.7)
70	14.2 (0.3, 33.2)	14.9 (1.5, 31.0)	15.7 (0.3, 32.3)	17.2 (1.0, 32.2)
80	9.6 (0.0, 26.6)	10.4 (0.0, 26.2)	12.9 (0.0, 29.4)	14.5 (0.0, 28.8)

Estimates are for individuals with a body mass index of 24.2 kg/m^2 and a physical activity level of 4.