Tri-Service Post-Operative Rehabilitation Guidelines

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Achilles Tendon Repair Rehabilitation

These guidelines were created as a framework for the post-operative rehabilitation program. They DO NOT substitute for any specific restrictions or requirements that are determined through the necessary shared decision-making and collaboration between the operating surgeon and treating rehabilitation team.

PHASE 1 (Immediate Post-Operative Phase): Generally 0-6 Weeks Post-Op	
GOALS:	1) Protect the surgical repair 2) Avoid a "stiff" ankle 3) Attain DF ROM to neutral at 6 weeks post-op 4) Minimize pain, swelling, muscle atrophy, and deconditioning 5) Independent gait without assistive device
PRECAUTIONS:	- **ALWAYS** wear ankle CAM boot for ambulation - Limit ankle DF to 0° until 6 weeks post-op
BRACE/CRUTCHES:	- Per Ortho Surgeon* (typically): • Weeks 1-2: 1/2-inch heel lift; toe touch WB @ 0-10% body weight while in post-op splint for 10 days; progress to WBAT • Weeks 3-4: 1/4-inch heel lift; WBAT • Weeks 5-6: 1/8-inch heel lift as needed; WBAT ***NOTE: May progress earlier based on Ortho preference - D/C crutches when gait is normalized; goal is between 4-6 weeks post-op
WOUND:	- Shower after post-op day 2 (cover splint/cast when showering) - **DO NOT SUBMERGE** ankle in tub or pool for 4 weeks - Suture removal @ 10-14 days post-op per Ortho - Begin scar massage after incision site has healed and scar is formed
REHABILITATION:	- Keep LE elevated as much as possible; ice ankle when applicable - Ankle pumps while in splint - Begin exercises listed below
~Weeks 1-2	- Hip and knee AROM exercises - Quad sets and glute sets - Intrinsic foot strengthening/toe posture and short foot exercises (i.e. resisted towel curls and toe yoga) - Knee and hip supine/seated open kinetic chain (OKC) strengthening exercises as tolerated (i.e. SLRs, LAQs, and SAQs) - Ankle isometrics as tolerated - Non-resisted active calf pumps (from neutral to PF as tolerated) once splint is removed (i.e. 50-100 reps, 5-6x per day) - HS stretching

~Weeks 3-4	- UBE for aerobic strength/endurance and seated UE weight lifting - Recumbent bike as tolerable while donning CAM boot - Intrinsic foot strengthening/toe posture and short foot exercises - Gentle, seated Achilles towel stretch (pain-free at tendon) - Ankle ROM exercises (i.e. ankle pumps, alphabets, and CW/CCW circles) - Ankle isometrics as tolerated - Non-resisted active calf pumps (from neutral to PF as tolerated) once splint is removed (i.e. 50-100 reps, 5-6x per day) - Knee and hip supine/seated OKC strengthening exercises as tolerated (i.e. resisted knee extensions, HS curls, and hip strengthening) - LE stretching: HS, glutes, ITB, piriformis, and quads - AAROM self-mobs for PF - OKC proprioceptive exercises - Manual Therapy: ankle/foot mobilizations as needed; limit DF to 0° until 6 weeks post-op
~Weeks 5-6	- Low intensity stationary bike with light resistance (5-10 minutes) - Pain-free ankle isometrics - Active calf pumps (from neutral to PF as tolerated) once splint is removed (i.e. 50-100 reps, 5-6x per day) - AAROM self-mobs for PF - Ankle strengthening with light tubing all directions as tolerated - Seated SL heel raises - Continue hip and knee supine/seated OKC strengthening exercises as tolerable (i.e. resisted knee extensions, HS curls, and hip strengthening) - Manual Therapy: ankle/foot mobilizations as needed; limit DF to 0° until 6 weeks post-op - Beginner-level pool exercises (after incision is healed) • Chest-deep water walking and exercises (within precautions)
FOLLOW-UP:	- Supervised rehab: 1-2x per week - PT re-eval: every 2-4 weeks as needed - Ortho re-eval: 2 weeks post-op and 6 weeks post-op
DOCUMENTATION:	- Precautions, pain level, medications, and modalities - Ankle ROM & gait - Observation • Incision sites healing well? • Signs/symptoms of infection? • Effusion? - Neurovascular status • Distal pulses? • Motor/sensation nerves intact? • Presence of calf pain?

PHASE 2: Generally 7-12 Weeks Post-Op	
GOALS:	1) Full ankle ROM 2) Independent ambulation with level walking and stair negotiation without any observed gait deviation
PRECAUTIONS:	- **NO RUNNING** until after 4 months post-op
BRACE/CRUTCHES:	- Transition from ankle boot to brace during weeks 7-8 as appropriate - D/C crutches when gait is WNL
CRYOTHERAPY:	- Cold with compression/elevation (i.e. ice with compression wrap)
REHABILITATION:	- Continue Phase 1 exercises and scar massage as needed - Progress to the following exercises and increase intensity gradually as tolerated (i.e. minimal to no increase in ankle pain, stiffness, or edema since the previous exercise session) - All strengthening should be done starting with low weights and high reps before progressing resistance
~Weeks 7-8	- Stationary bike for conditioning; resistance as tolerated - Ankle ROM exercises (add mobilizations/manual stretching as needed) - Seated wobble board - Gait training (i.e. cone taps, marching, retro-walking, cariocas, and shuffles) - Ankle strengthening with tubing - DL squats to depth of tolerance (add resistance gradually) - Forward, lateral, and retro step-ups (start with 4" step and progress as tolerated) - Standing DL heel raises - Standing gastroc/soleus stretches - Progressive hip/knee strengthening (i.e. knee extensions, leg press, HS curls, and hip ABD/ADD) - Manual Therapy: ankle mobilizations in all directions until ROM is WNL
~Weeks 9-12	- Elliptical/stationary bike with progressive resistance - Progress DL squats as tolerated; add resistance gradually - Progress forward, lateral, and retro step-ups as tolerated - Standing heel raise progression from DL → SL as able - Progressive hip/knee strengthening (i.e. knee extensions, leg press, HS curls, and hip ABD/ADD) - Standing balance progression from DL → SL as able - Standing gastroc/soleus stretches - Intermediate-level pool exercises
FOLLOW-UP:	- Supervised rehab: 1-3x per week as needed - PT re-eval: every 2-4 weeks as needed - Ortho re-eval: 3 months post-op

DOCUMENTATION:	- Precautions, pain level, medications, and modalities - Ankle ROM, strength, and gait - Observation • Incision sites healing well? • Signs/symptoms of infection? • Effusion?

PHASE 3: Generally 4-6 Months Post-Op	
GOALS:	1) Full ankle ROM 2) Perform 20+ SL heel raises to ≥ 75% height of contralateral limb 3) Hop for distance > 90% of uninvolved side 4) Jog at own pace/distance without pain 5) Meet occupational requirements at 6 months
PRECAUTIONS:	- **NO RUNNING** until after 4 months post-op
BRACE/CRUTCHES:	- Ankle lace-up brace as needed
REHABILITATION:	- Continue Phase 2 exercises as needed - Progress to the following exercises, gradually increasing intensity and duration as tolerated, as long as there is no increased ankle pain or edema
~Weeks 13-16	- Gradually add stairmaster to low-impact conditioning regimen - Progressive LE strengthening (i.e. calf press, leg press, squats, HS curls, and hip ABD/ADD) - Light agility exercises as tolerated (i.e. fitter, slide board, figure 8s, gentle loops, large zig zags, and agility ladder) - Progressive balance training as needed - Progressive pool program as tolerated
~Weeks 17-24	- Progressive jogging program • May begin each session with jogging on treadmill for 5 minutes • Increase time and/or distance no more than 10-20% per week - Progressive agility/functional training • Begin at 25-50% intensity and progress gradually • Jumping, hopping, directional jogging, cariocas, shuffles, etc.
FOLLOW-UP:	- Supervised rehab: 1-2x per week as needed - PT re-eval: monthly - Ortho re-eval: 6 months post-op
DOCUMENTATION:	- Pain level and medications - Ankle ROM and strength - Hop test for distance - Functional activity tolerance (i.e. stairs, jogging)

DISCHARGE GOALS:	- Hop test and Y-balance limb symmetry ≥ 90% - Isokinetic testing limb symmetry ≥ 85% - Hand held dynamometer ≥ 85% for PF - Injury-Psychological Readiness to Return to Sport Scale (≥ 50% indicates readiness)
MISCELLANEOUS:	- After 6 months post-op, exercises in Phase 3 are continued and gradually increasing in intensity and duration as tolerated - Pass Service fitness test at 6-9 months - Progress activities for return to sport/collision sports or aggressive military training (i.e. airborne school) based on the patient's functional performance and endurance. This time period will be directed by the Ortho Surgeon and the Physical Therapist. This may require between 9-12 months before cleared without restrictions.

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