



Orthopedic Surgery, Sports Medicine & Arthroscopy Specialists

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REHABILITATION PROTOCOL- Achilles tendon repair

The rehabilitation guidelines are presented in a criterion based progression program. General time frames are given for reference to the average, but individual patients will progress at different rates depending on their age, associated injuries, pre-injury health status, rehab compliance, tissue quality and injury severity. Specific time frames, restrictions, and precautions may also be given to protect healing tissues and the surgical repair/reconstruction. It should not be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam findings, individual progress, and/or the presence of post-operative complications. The therapist should consult the referring physician with any questions or concerns.

Special attention must be given to impairments that caused the initial problem. For example, if the patient is s/p partial medial meniscectomy and they have a varus alignment, post-operative rehabilitation should include correcting muscle imbalances or postures that create medial compartment stress.

INDIVIDUAL CONSIDERATIONS: S/p

PHASE 1- Surgery to 2 weeks

REHAB GOALS	<ol style="list-style-type: none"> 1. Protection of the post-surgical repair 2. Decrease pain & inflammation 3. Gait training with crutches
PRECAUTIONS	<ol style="list-style-type: none"> 1. Crutches and non-weight bearing with splint until first postoperative visit (7-10 days). Transition to CAM boot, touch down weight bearing with crutches. 2. Do not remove splint. When CAM boot placed can remove for bathing. 3. Cryocuff 3-5 times per day for 20 minutes and ice after every therapy session after splint removed
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> ○ Toe spreads & curls while splint on ○ Passive ankle DF to neutral ○ Hip ROM as tolerated
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ 4 way SLRs ○ Core strengthening ○ Ankle alphabet exercises ○ Ankle DF, inversion/eversion isometrics
CARDIOVASCULAR	Upper body circuit training or UBE.

EXERCISE	
PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ Minimal pain & swelling ○ Good quad set, able to perform SLR without lag ○ Wound healing, no sign of infection

PHASE 2- 3-6weeks

REHAB GOALS	<ol style="list-style-type: none"> 1. Protection of the post-surgical repair 2. Progression to normal gait 3. Achieve neutral DF 4. Minimize pain and swelling
PRECAUTIONS	<ol style="list-style-type: none"> 1. Crutches and partial weight bearing with boot. Progress to full weight bearing by end of week 4. Discontinue crutches when walking with boot and normal gait. 2. CAM boot with 2 heel lifts until week 4, then one heel lift. Remove heel lifts after 6 weeks. 3. No dorsiflexion past neutral 4. Cryocuff 3-5 times per day for 20 minutes and ice after every therapy session
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> ○ Continue phase 1 exercises ○ Soft tissue/scar mobilizations when incision healed ○ Gentle towel calf stretches to neutral DF
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Continue phase 1 exercises ○ Ok to start open chain knee exercises ○ 4 way ankle isometrics ○ Resistance band DF/Inversion/eversion ankle ○ Sitting heel raises at week 5 ○ Body weight squats & wall sits in boot at week 5 ○ Seated BAPS board
CARDIOVASCULAR EXERCISE	Upper body circuit training (seated), core strengthening or UBE
PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ Minimal pain & swelling ○ Able to walk without assistive device

PHASE 3- 7-10 weeks postop

REHAB GOALS	<ul style="list-style-type: none"> ○ Restore normal gait ○ Maintain/restore full ROM
PRECAUTIONS	<ul style="list-style-type: none"> ○ Continue ice after PT

	<ul style="list-style-type: none"> ○ D/c walking boot if able to walk in athletic shoe. ¼ to ½ inch heel lift in shoe until week 9, then wean out of heel lift. ○ Avoid post activity swelling
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> ○ Continue exercises from phase 2. ○ Soft tissue/scar mobilizations as needed ○ Gentle standing calf stretches (avoid overstretch)
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Continue phase 2 exercises ○ LE- leg press, static lunges, step ups, lateral step ups ○ Ankle- add resistance band PF, sitting heel raises progress to standing calf raise at week 8. ○ Gait- in line tandem walking ○ Balance/proprioception- standing BAPS, walking on mini tramp, double leg stance, progress to single leg ○ Agility- week 9- side stepping using agility ladder/cones
CARDIOVASCULAR EXERCISE	<p>Continue phase 2 Stationary bike, swimming, pool walking</p>
PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ Minimal pain & swelling ○ Ambulating without a limp without using a heel lift ○ Full ankle ROM ○ Able to perform bilateral calf raise ○ Symmetrical unilateral stance

PHASE 4- 11-14 weeks postop

REHAB GOALS	<ul style="list-style-type: none"> ○ Restore/maintain full ROM ○ Restore normal gait
PRECAUTIONS	<p>Caution when progressing strengthening in this phase. The graft is at risk of failure and aggressive rehab could be detrimental Post-activity soreness should resolve within 24 hours Avoid post activity swelling Continue ice after PT</p>
RANGE OF MOTION EXERCISES	<p>Continue with flexibility exercises Hip, IT band stretching & sport specific stretches</p>
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Progress phase 3 activities with resistance/weight ○ LE-in line lunges, leg press, progress weight ○ Ankle-progress to single leg calf raises, eccentric Achilles exercises in non wt bearing ○ Balance/proprioception- progress single leg activities to include simultaneous upper body skills

	<ul style="list-style-type: none"> ○ Plyometrics- form walking w/high knees & heel raises
CARDIOVASCULAR EXERCISE	<p>Continue previous phase exercises Elliptical, stairmaster, treadmill walking Week 13- Ok to progress to light jogging if: normal gait walking, able to walk 2 miles on treadmill without pain or gait deviation</p>
PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ No pain/swelling ○ Full ROM ○ Able to perform single leg heel raise ○ No issue with initiation of jogging

PHASE 5- 15-24 weeks

REHAB GOALS	<ul style="list-style-type: none"> ○ No pain/swelling/instability ○ Full ROM ○ Progress in strengthening, agility & jogging
PRECAUTIONS	<p>Post-activity soreness should resolve within 24 hours Avoid post activity swelling Continue ice after activity</p>
RANGE OF MOTION EXERCISES	<p>Continue with flexibility exercises</p>
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Progress strengthening from phase 4 ○ LE- light weight Olympic lifts at week 20. Single leg squats ○ Ankle- single leg calf raises. Eccentric Achilles in bilateral stance, progress to single leg eccentric at week 22. ○ Balance/neuromuscular- continue to progress and advance difficulty, add unstable surface, perturbations, etc ○ Agility training- LE drills in controlled environment (figure 8 jogging, side shuffles, cutting) if jogging tolerated. Start with 50% effort, progress slowly to 100%. When beginner activities tolerated progress to form running, ladders, reactionary drills, start low intensity. ○ Plyometrics- Gravity reduced jumping, skipping, line jumping, tuck jumps, box jump w/ step down (progress to jump up & off at week 22), single leg hop, bounding
CARDIOVASCULAR EXERCISE	<ul style="list-style-type: none"> ○ Continue from phase 4 ○ Ok to do jog/run progression at week 17 if: no gait deviation with jogging, able to jog 2 miles without gait deviation, pain or swelling afterward.
PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ No pain/swelling ○ Full ROM symmetrical ○ Running gait without asymmetry

	○ Hop test limb symmetry at least 85%
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PHASE 6- 6-12 months postop

REHAB GOALS	<ul style="list-style-type: none"> ○ No pain/swelling/instability ○ Full ROM ○ Greater than 90% LE strength compared to contralateral ○ Return to sport/work
PRECAUTIONS	<p>Post-activity soreness should resolve within 24 hours Avoid post activity swelling</p>
RANGE OF MOTION EXERCISES	Continue with flexibility exercises
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Progress from phase 4 ○ Agility training- continue, incorporate sport specific activities and increase speed as tolerated. ○ Plyometrics- jumping & hopping more challenging by changing height/distance, speed, directions, combination of tasks ○ Cutting drills: begin with running S pattern, progress to 45 deg cuts then sharper cuts. Can begin pivoting & cut and spin drills when able to cut at sharp angles include anticipated and unanticipated movements, incorporate sport specific activities ○ Return to sport test: see below
CARDIOVASCULAR EXERCISE	<ul style="list-style-type: none"> ○ Advance to baseline can advance to sprinting when able to run 2 miles without symptoms or gait deviation and strength >90% of contralateral
PROGRESSION CRITERIA- RETURN TO SPORT	<ul style="list-style-type: none"> ○ Full ROM equal to contralateral ○ No pain or swelling ○ LE strength and hop test >90% of contralateral ○ Tolerating all drills without symptoms ○ Passing return to sport test

RETURN TO SPORT TEST

- 10 rep max single leg squat with external weight
- Single broad jump landing on one foot
- Triple broad jump landing on one foot
- Single leg forward hop
- Single leg crossover hop
- Single leg medial and lateral hop
- Single leg medial and lateral rotating hop
- Single leg vertical hop
- Single leg triple hop

- Timed 6 meter hop
- 10 yard lower extremity functional test

10 yard pro agility run