

Orthopedic Surgery • Sports Medicine
Neil Kumar, MD

Ankle Ligament (Brostrom) Repair Protocol

“As tolerated” should be understood to “perform with safety” for the reconstruction/repair. Pain, limp, swelling, or other undesirable factors are indicators that you are doing too much too soon. If any of these should occur, decrease your activity level, elevate the leg, and ice your knee.

Ice should be applied to the ankle for 15 to 20 minutes following each exercise, therapy, or training session. While your ankle remains swollen, icing should also be done separate from exercise sessions at least three times per day.

All times and exercises are to serve as guidelines only. Progression through the protocol should be based upon criteria as opposed to dates listed and will vary depending on each individual patient. Progress should be agreed upon by the patient and his/her team of providers.

Pre-Operative

- Brace – As directed by your doctor
- Weight Bearing – Full, use crutches as necessary
- ROM (range of motion) – Full, no restrictions
- Therapeutic Exercise - Learn exercises for post op regimen
 - Quad sets
 - Glute sets
 - Four-way straight leg raises (SLR)
- Modalities - Cryotherapy (Ice) six to eight times per for 15 to 20 minutes each time

- **Goals for Surgery**
 - Minimal to no swelling
 - Full ROM

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Post-Operative Phase I: Weeks 0 to 2

- Brace – Splint
- Weight Bearing – Non-weight bearing with bilateral (2) crutches
- ROM - None
- Therapeutic Exercise - *All exercises without weight*
 - ‘Preoperative’ exercises
 - Core, hip, and knee exercises without ankle involvement
- Modalities
 - NMES (neuromuscular electrical stimulation) for quadriceps atrophy
 - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Cardio - UBE (arm bike)

- **Goals for Phase II:**
 - Maintain hip and quad strength
 - Reduce swelling of the ankle and leg
 - Protect the incision and the repair

Post-Operative Phase II: Weeks 2 – 4

- Brace - Controlled ankle motion boot
- Weight Bearing – Non-weight bearing with bilateral (2) crutches
- ROM - Active and active-assisted
- Therapeutic Exercises – Continue Phase I exercises, no resistive exercises
- Modalities
 - Scar and soft tissue massage
 - NMES (neuromuscular electrical stimulation) for quadriceps and calf atrophy
 - HVPC (high volt pulsed current) for effusion (swelling) reduction
 - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Cardio
 - UBE
 - Stationary bike – non-surgical leg without resistance

- **Goals for Phase III:**
 - Dorsiflexion to neutral
 - Minimal to no swelling
 - Protect incision and repair

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Post-Operative Phase III: Weeks 4 – 6

- Brace - Controlled ankle motion boot
- Weight Bearing – 50% partial weight bearing with bilateral (2) crutches
- ROM - Active and active-assisted
- Therapeutic Exercises – Continue Phase II exercises, no resistive exercises
- Modalities
 - Proprioception – weight-shifting
 - Scar and soft tissue massage
 - NMES (neuromuscular electrical stimulation) for quadriceps and calf atrophy
 - HVPC (high volt pulsed current) for effusion (swelling) reduction
 - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Cardio
 - UBE
 - Stationary bike – non-surgical leg without resistance
- **Goals for Phase IV:**
 - Minimal to no swelling
 - Protect incision and repair
 - Prepare for full weight bearing

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Post-Operative Phase IV: Weeks 6 – 8

******Include single-leg exercises on non-involved side******

- Brace - Controlled ankle motion boot
- Weight Bearing - weight bear as tolerated
- ROM – Full active and active-assisted
- Therapeutic Exercises – Continue Phase III exercises
 - Light Thera-Band resistance
 - OKC and CKC activities within pain-free ROM
 - Gait training
- Modalities
 - Scar and soft tissue massage, patella mobilizations
 - NMES (neuromuscular electrical stimulation) for quadriceps atrophy
 - HVPC (high volt pulsed current) for effusion (swelling) reduction
 - Cryotherapy six to eight times per day for 15 to 20 minutes each
- Proprioception
 - Seated BAPS board
 - Standing weight shifts
- Cardio
 - UBE
 - Stationary bike – two-leg without resistance
 - Pool walking
- **Goals for Phase V:**
 - Full ROM
 - No swelling, no pain
 - Prepare for normal gait

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Post-Operative Phase V: Weeks 8 – 12

- Brace – Transition to sneaker
- Weight Bearing - weight bear as tolerated
- ROM
 - Full active and active-assisted
- Therapeutic Exercises – Progress Phase IV activities
 - Initiate eccentric exercises
- Proprioception
 - Perturbation training (balance against resistance)
 - Unstable surfaces
 - Joint repositioning
- Plyometric – Initiate at Week 12
- Cardio
 - UBE
 - Stationary bike with increasing resistance
 - Pool running
 - Swimming
 - Week 10 – Initiate treadmill walking

- **Goals for Phase VI:**
 - Normal gait
 - No swelling, no pain
 - Full ROM

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Post-Operative Phase VI: Weeks 12 – 16

Transitional Therapy for return to sport activities during this phase with progression based upon patient progress through earlier protocol.

- Field and community running at 3 months
- Cutting/pivoting/jump training at 4 months

In addition to ongoing strength, balance, agility, and cardio conditioning, initiate sport specific plyometric activities as tolerated such as:

Soccer/Football: Two foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, and cycled split squat jump

Basketball/Volleyball: Two foot ankle hop, double-leg hop, squat jump, double-leg vertical jump, single-leg hop, single-leg vertical jump, power skip, backwards skip, double-arm alternate-leg bound, alternate leg push off box drill, and side-to-side push off box drill

Baseball/Softball/Overhead throwing sports: Two foot ankle hops, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, cycled split squat jump, and return to throwing program

Return to Sports

Clearance for return to full sports activities will be determined with input from the entire health team (physician, physician assistant, athletic trainer, therapist). When cleared by the provider, patients should return to their sports with a *4-week progression plan* as determined by the health team and coaches. This allows the athlete to acclimate to the mental and physical demands of sports and athletics in safe manner.