



Department of Rehabilitation Services
Physical Therapy

Protocol: Modified Broström-Gould Repair for Chronic Lateral Ankle Instability

ICD 10 Codes:

- M25.37: Other instability, ankle and foot**
- S93.4: Sprain of ankle**
- S93.41: Sprain of calcaneofibular ligament**
- S93.49: Sprain of other ligament of ankle**

The intent of this protocol is to provide the clinician with a guideline of the post-operative rehabilitation course of a patient who has undergone an anatomical surgical procedure. It is by no means intended to 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. If a clinician requires assistance in the progression of a post-operative patient they should consult with the referring surgeon.

The following post-operative rehabilitation protocol was originally authored in 2010, and at that time, was adapted from the protocol used at the Hospital for Special Surgery (HSS), where the modified Brostrom-Gould procedure is the preferred anatomical surgical procedure for the treatment of lateral ankle instability.

Description:

This protocol applies to patients following the Gould modified Boström repair of the Anterior Talo-fibular Ligament (ATFL) and Calcaneal Fibular Ligament (CFL). Rupture of these ligaments is common as a result of diagnoses including but not limited to:

- Inversion ankle sprains¹
- Chronic lateral ankle instability (CAD)²
- Acute severe lateral ankle ligament injuries³

This protocol serves as a guide for clinical decision-making for physical therapy (PT) management of this patient population at Brigham and Women's Hospital (BWH) Department of Rehab Services.

The Broström repair is an anatomic repair of both the ATFL and CFL, while the Gould Modified repair includes advancement of the extensor retinaculum to strengthen the repair.⁴ The goal of the procedure is to achieve anatomical stability of the talocrural and subtalar joints.

Anatomic repair of the ATFL and CFL is achieved by use of a suture anchor repair technique. Anchors are typically placed into the cortical bone of the fibula at the anatomical footprint of each ligament respectively. A third anchor can be used to repair the articular joint capsule. The Protocol: Modified Broström-Gould Repair for Chronic Lateral Ankle Instability

extensor retinaculum is advanced and repaired to the periosteal flap in the Gould modified procedure.

Potential associated lesions can affect progression and healing timelines. These may be noted in an operative report, imaging study or be uncovered during clinical examination and include but are not limited to⁵:

- Osteochondral defects
- Peroneal tendinopathy
- Sinus tarsi
- Subtalar instability
- Impingement
- Chondromalacia

Phase I: Immediate Post-Operative Phase (0-2 weeks)

- Precautions
 - Wound Care
 - Avoid direct contact with water for first 7 days post-operatively or until first follow up for suture removal
 - After first week showering is permitted but submersion in water (i.e. bath, pool, hot tub etc.) should be avoided until full wound closure has been achieved
 - Weight bearing restrictions
 - Likely Non-weight bearing (NWB) with short leg cast or pneumatic walking boot unless otherwise indicated⁶
 - ROM restrictions
 - Avoid AROM/AAROM/PROM into inversion
 - Avoid AROM/AAROM/PROM into plantarflexion
- Goals
 - Edema control/reduction
 - Protect healing tissue (ankle is likely placed into immobilizing device which may include pneumatic walking boot or Short Leg Cast (SLC))
 - Independent transfers and ambulation using appropriate assistive device (especially with weight bearing restrictions)
 - Prevent secondary deconditioning
- Physical Therapy Interventions
 - Proximal lower extremity (LE), upper extremity (UE) and trunk muscle strengthening as indicated
 - Monitor wound healing and consult with referring MD if signs and symptoms of infection are present
 - Modalities for pain/edema control (e.g. Game Ready, elevation, ice, etc.)
 - Aerobic upper body conditioning
 - Transfer and gait training with optimal assistive device (if applicable)
 - Identify patient's goal for return to recreational and/or sport specific activities

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- Criteria for progression to Phase II
 - Decreased pain
 - Decreased edema
 - Independence with home exercise program
 - Independence with transfers and ambulation with appropriate weight bearing precaution

Phase II: Early Rehabilitation (2-6 weeks)

- Precautions
 - Activity Restrictions
 - Limit prolonged standing/walking
 - Avoid driving until:
 - Right leg is no longer in pneumatic walking boot (if right leg is operative side)
 - Able to use right leg effectively to brake in an emergency
 - Patient is no longer using narcotic pain medication
 - Patient feels comfortable and confident in driving ability
 - MD and/or PT have no further concerns with driving ability
 - Weight bearing restrictions:
 - Likely touch-down weight bearing (TDWB) in pneumatic walking boot or SLC unless otherwise indicated⁷
 - ROM restrictions
 - Limit AROM/AAROM/PROM into eversion to 10° in safe controlled manner⁶
 - No inversion AROM/AAROM/PROM
 - Gentle and controlled AROM/AAROM/PROM into plantarflexion⁶
- Goals
 - Edema control/reduction
 - Protect healing tissue
 - Progress weight bearing using appropriate assistive device as indicated (take into account operative technique and associated pathologies)
 - Prevent secondary deconditioning
- Physical Therapy Interventions
 - Proximal LE, UE and trunk muscle strengthening as indicated
 - Aquatic therapies/Upper body aerobic conditioning
 - Transfer and gait training with optimal assistive device
 - Modalities for pain/edema control (e.g. Game Ready, elevation, ice, etc.)
 - Begin gentle and controlled ROM exercises within post-operative precautions
 - Note: ROM is not equivalent to stretching
 - Stretching should be avoided until phase II
 - Submaximal ankle isometrics in all directions excluding inversion
- Criteria for progression to phase II
 - Decreased pain
 - Decreased edema
 - Independence with home exercise program (HEP)
 - Independence with transfers/ambulation using assistive device (if applicable)

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Phase II: Late Rehabilitation (Approximately 6-10 weeks)

- Precautions
 - Weight bearing restrictions
 - Weight bearing as tolerated (WBAT)
 - ROM restrictions
 - Avoid inversion AROM/AAROM/PROM until week 9
- Goals
 - Progressive protected normalization of gait: After the initial 6 week immobilization in pneumatic walking boot patient will begin transition to protected ankle weight bearing in a commercially available semi-rigid stirrup orthotic or independent ambulation without bracing
 - Edema control and patient education regarding skin checks with use of bracing
 - Pain reduction
 - Improve conditioning
 - Prevention of scar adhesion and myofascial restriction
 - Restore AROM
 - Begin controlled strengthening exercises
 - Improve balance
- Physical therapy interventions:
 - Progressive weight bearing as tolerated
 - Gait training including use of appropriate assistive device and/or ankle orthotic as indicated
 - AROM/AAROM/PROM exercises as indicated
 - Joint mobilizations as identified by surgeon, adhering to identified precautions and avoiding the tensioning of the CFL and ATFL
 - Protected ankle strengthening exercises
 - Gastrocnemius and soleus stretches as indicated
 - Soft tissue mobilization as indicated
 - Continued proximal muscle strengthening activities within precautions
 - Proprioception activities within surgical precautions
 - Supplemental strengthening including leg press, bicycle and knee extensions
 - Aquatic therapies/Upper body aerobic conditioning
- Guidelines for progression to Phase III⁶
 - Restoration of symmetrical gait pattern without use of assistive device
 - Strength within 90% of unaffected side (using isokinetic or isometric strength measures i.e. Biodex, hand held dynamometry, manual muscle testing, etc.)

Phase III: Return to Function (Approximately 10-14 weeks)

- Precautions
 - Activity restrictions
- Return to plyometric activities (including jogging, jumping, hopping etc.) should not occur until 11 weeks post-operative and patient can perform 25 unilateral heel raises without pain or difficulty⁶

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- Goals
 - Restore full AROM no later than week 12
 - Reduction of post-activity edema
 - Normalize gait pattern on stable/unstable surfaces
 - Return to step through pattern for stair ascent/descent (if applicable)
 - Strengthening of ankle muscle groups
 - Restore functional strength
- Physical Therapy Interventions
 - AROM/AAROM/PROM exercises as indicated
 - Modalities as indicated for edema/pain control
 - Unilateral weight bearing ankle strength exercises
 - Bilateral and unilateral weight bearing and proprioceptive and balance exercises
 - Functional lower kinetic chain strength exercises
- Guidelines for progression to Phase IV⁶
 - Return of 90% function of the ankle compared with unaffected side measured with assessments that include but are not limited to
 - Single leg hop for distance⁸
 - Triple hop for distance⁹
 - Star excursion balance test¹⁰
 - Y-Balance Test¹¹

Phase IV: Return to Sport/Recreation (Approximately 12 weeks to 4 months)

- Precautions
 - Running can be initiated when patient is able to perform straight plane jogging without pain¹²
 - See “Running Injury Prevention Tips & Return to Running Program” located in T-Drive for more guidance
 - Post activity soreness can be used as guideline for return to sport or recreational activity
- Goals
 - Prepare for return to recreation/sporting activities and/or high level work tasks
 - Guide return to competitive play
- Physical Therapy Interventions
 - Continued functional strengthening as needed
 - Continued plyometric exercises as needed
 - Jogging/Running
 - Aerobic conditioning
 - Agility exercises
 - Sport specific drills/work related training

Revised: Kevin McEnroy, PT (8/2017)

**Reviewers: Sara Tenenholtz, PT
Philip Kidd, PT**

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