



# Tri-Service Post-Operative Rehabilitation Guidelines

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# Ankle Reconstruction – Modified Broström 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	
<b>GOALS:</b>	1) Protect the surgical repair 2) Avoid a “stiff” ankle 3) Minimize pain, swelling, muscle atrophy, and deconditioning
<b>PRECAUTIONS:</b>	<ul style="list-style-type: none"> <li>- <b>NO</b> INV PROM/AAROM past neutral for the first 4 weeks</li> <li>- <b>ALWAYS</b> wear the CAM boot for ambulation once splint/short leg cast (SLC) is removed until 6 weeks post-op</li> <li>- Exercise prescription is dependent upon the tissue healing process and individual functional readiness in all stages. If there are any concerns/complications that arise regarding the patient’s progress, the Ortho Surgeon should be notified.</li> </ul>
<b>BRACE/CRUTCHES:</b>	<ul style="list-style-type: none"> <li>- Per Ortho Surgeon (typically):               <ul style="list-style-type: none"> <li>• Weeks 0-2: NWB in splint/SLC <u>at all times</u></li> <li>• Weeks 2-4: WBAT with precautions above; <b>NO</b> passive stretching into PF</li> <li>• Weeks 4-6: WBAT w/CAM boot with gradual progression to FWB</li> </ul> </li> <li>- D/C crutches between 3-5 weeks when gait is WNL</li> </ul>
<b>WOUND:</b>	<ul style="list-style-type: none"> <li>- Shower after post-op day #2 (cover splint/SLC when showering)</li> <li>- <b>DO NOT SUBMERGE</b> ankle in tub or pool for 4 weeks</li> <li>- Suture removal @ 10-14 days post-op per Ortho</li> <li>- Begin scar massage after incision site has healed and scar is formed</li> </ul>
<b>CRYOTHERAPY:</b>	<ul style="list-style-type: none"> <li>- Cold with compression/elevation               <ul style="list-style-type: none"> <li>• First 48 hrs: every hour for 15 minutes when awake</li> <li>• After 48 hrs: 3x per day for 15-30 minutes as tolerated</li> </ul> </li> </ul>
<b>REHABILITATION:</b>	<ul style="list-style-type: none"> <li>- Frequent use of cryotherapy with LE elevated</li> <li>- Perform rehabilitation exercises as tolerated</li> </ul>
<i>~Weeks 1-2</i>	<ul style="list-style-type: none"> <li>- Hip and knee AROM exercises</li> <li>- Intrinsic foot strengthening/toe posture and short foot exercises (i.e. resisted towel curls and toe yoga)</li> </ul>

	<ul style="list-style-type: none"> <li>- Knee and hip supine/seated open kinetic chain (OKC) strengthening exercises as tolerated (i.e. SLRs, LAQs, and SAQs)</li> <li>- Ankle isometrics as tolerated</li> <li>- Transfer/gait training within WB precautions</li> </ul>
~Weeks 3-6	<ul style="list-style-type: none"> <li>- UBE for aerobic strength/endurance and seated UE weight lifting</li> <li>- Stationary bike with light resistance while wearing CAM boot</li> <li>- Intrinsic foot strengthening/toe posture and short foot exercises</li> <li>- Eversion isometric strengthening as tolerated</li> <li>- Gentle, seated Achilles towel stretch</li> <li>- Active calf pumps (from neutral to PF as tolerated) for 50-100 reps, 5-6x per day</li> <li>- Ankle ROM exercises (i.e. alphabet, CW/CCW circles, and seated wobble board to tolerance)</li> <li>- Weight shifts/proprioceptive exercises</li> <li>- Pain-free ankle isometrics</li> <li>- DL squats (0-45°)</li> <li>- Begin scar massage and pool exercises once incision is healed (i.e. chest deep water walking and/or deep water jogging)</li> </ul>
<b>FOLLOW-UP:</b>	<ul style="list-style-type: none"> <li>- Supervised rehab: 1-2x per week</li> <li>- PT re-eval: every 2-4 weeks as needed</li> <li>- Ortho re-eval: 2 weeks post-op and 6 weeks post-op</li> </ul>
<b>DOCUMENTATION:</b>	<ul style="list-style-type: none"> <li>- Precautions, pain level, medications, and modalities</li> <li>- Ankle ROM &amp; gait</li> <li>- Observation <ul style="list-style-type: none"> <li>• Incision sites healing well?</li> <li>• Signs/symptoms of infection?</li> </ul> </li> <li>- Neurovascular status <ul style="list-style-type: none"> <li>• Distal pulse?</li> <li>• Motor/sensation nerves intact?</li> <li>• Presence of calf pain?</li> </ul> </li> </ul>

## PHASE 2: Generally 7-12 Weeks Post-Op

<b>GOALS:</b>	<ol style="list-style-type: none"> <li>1) Independent ambulation with level walking and stair negotiation without any observed gait deviation</li> <li>2) Full ankle AROM for EV, PF, DF, and ~90% INV</li> <li>3) Ankle strength 5/5 MMT in all directions and/or hand held dynamometry &gt; 75% of contralateral side</li> <li>4) Symmetrical/full height SL heel raise</li> </ol>
<b>PRECAUTIONS:</b>	<ul style="list-style-type: none"> <li>- Protect healing tissue</li> <li>- <b><u>NO RUNNING</u></b> until after 3 months post-op</li> </ul>

<b>BRACE:</b>	- Ankle brace (lace-up/ASO) as needed
<b>REHABILITATION:</b>	<ul style="list-style-type: none"> <li>- Continue Phase 1 exercises and scar massage as needed</li> <li>- Progress to the following exercises and increase intensity gradually as tolerated (i.e. no increase in ankle pain or effusion since the previous exercise session)</li> <li>- All ankle strengthening should be done starting with low weights and high reps before progressing resistance</li> </ul>
<i>~Weeks 7-10</i>	<ul style="list-style-type: none"> <li>- Elliptical/stationary bike/swimming (may add stairmaster gradually)</li> <li>- Scar massage/mobilization</li> <li>- Standing gastroc/soleus stretches</li> <li>- Progressive hip/knee strengthening (i.e. knee extensions, leg press, HS curls, and hip ABD/ADD)</li> <li>- Ankle strengthening with tubing or theraband</li> <li>- Heel raise progression (progress DL to SL)</li> <li>- Gait training (i.e. cone walking, marching, retrowalking, cariocas, and shuffles)</li> <li>- Forward, lateral, and retro step-downs (start with 4" step and progress as tolerated)</li> <li>- Squats, Total Gym/power tower, and resistive lateral monster walks</li> <li>- Progressive DL to SL standing balance and proprioceptive exercises (i.e. body blade, plyoball, platform training, and BAPS board)</li> </ul>
<i>~Weeks 11-12</i>	<ul style="list-style-type: none"> <li>- Low-impact cardio/swimming</li> <li>- Progressive foot/ankle strengthening and balance exercises</li> <li>- Standing SL heel raises</li> <li>- Continue progressive hip/knee strengthening (i.e. knee extensions, leg press, HS curls, and hip ABD/ADD)</li> <li>- Initiate straight plane plyometrics and bilateral jumps <ul style="list-style-type: none"> <li>• Jumps up to and down from 4", 6", 8", and 12" steps</li> <li>• Vertical jumps in place, then progress in series</li> </ul> </li> </ul>
<b>FOLLOW-UP:</b>	<ul style="list-style-type: none"> <li>- Supervised rehab: 1-3x per week as needed</li> <li>- PT re-eval: every 2-4 weeks as needed</li> <li>- Ortho re-eval: 12 weeks post-op</li> </ul>
<b>TESTING:</b>	- Y-balance testing
<b>DOCUMENTATION:</b>	<ul style="list-style-type: none"> <li>- Precautions, pain level, medications and modalities</li> <li>- Ankle ROM, strength, and gait</li> <li>- Observation <ul style="list-style-type: none"> <li>• Incision sites healing well?</li> <li>• Signs/symptoms of infection?</li> </ul> </li> </ul>

### PHASE 3: Generally 13-26 Weeks Post-Op

<b>GOALS:</b>	<ol style="list-style-type: none"> <li>1) Normal ankle strength</li> <li>2) Hop up/down 1 stair height with good mechanics</li> <li>3) Tolerate return to run</li> <li>4) Meet occupational requirements at 4-6 months</li> </ol>
<b>BRACE:</b>	- Ankle lace-up brace for sports and advanced agility (if needed)
<b>REHABILITATION:</b>	<ul style="list-style-type: none"> <li>- Continue Phase 2 exercises as needed</li> <li>- Progress to the following exercises and increase intensity gradually when patient is ready (i.e. no increase in ankle pain or effusion since the previous exercise session)</li> </ul>
<i>~Weeks 13-16</i>	<ul style="list-style-type: none"> <li>- SL heel raises</li> <li>- Continue progressive hip/knee strengthening (i.e. knee extensions, leg press, HS curls, and hip ABD/ADD)</li> <li>- Progressive functional training: <ul style="list-style-type: none"> <li>• Begin at 25-50% intensity and progress gradually</li> <li>• Jumping progression: lateral jumping, multi-planar jumping, unilateral jumping, hopping, directional jogging, cariocas, shuffles, jump rope, etc.</li> </ul> </li> <li>- Progressive standing DL to SL balance and proprioceptive exercises (i.e. body blade, plyoball, and platform training)</li> <li>- Initiate jogging with return to run progression; increase time and/or distance no more than 10-20% per week</li> </ul>
<i>~Weeks 17-26</i>	<ul style="list-style-type: none"> <li>- Continue running progression</li> <li>- Plyometrics and agility drills</li> <li>- Transition to gym/HEP</li> </ul>
<b>FOLLOW-UP:</b>	<ul style="list-style-type: none"> <li>- Supervised rehab: 1-2x per week as needed</li> <li>- PT re-eval: monthly</li> <li>- Ortho re-eval: 6 months post-op</li> </ul>
<b>DOCUMENTATION:</b>	<ul style="list-style-type: none"> <li>- Pain level and medications</li> <li>- Ankle ROM &amp; strength</li> <li>- Hop for distance</li> <li>- Functional activity tolerance (i.e. stairs, jogging) with no perceived or episodic instability of the ankle</li> </ul>
<b>TESTING:</b>	<ul style="list-style-type: none"> <li>- Multiple hop test</li> <li>- SL hop test for time and distance</li> <li>- Injury-Psychological Readiness to Return to Sport Scale</li> <li>- Foot and Ankle Ability Measure (FAAM)</li> </ul>
<b>DISCHARGE GOALS:</b>	<ul style="list-style-type: none"> <li>- Multiple hop test and Y-balance limb symmetry <math>\geq 90\%</math></li> <li>- Isokinetic testing limb symmetry <math>\geq 85\%</math></li> <li>- Injury-Psychological Readiness to Return to Sport Scale (<math>\geq 50\%</math> indicates readiness)</li> <li>- FAAM sport score of <math>&gt; 95\%</math>; FAAM ADL score of <math>&gt; 88\%</math></li> </ul>

**MISCELLANEOUS:**

- After 6 months post-op, exercises in Phase 3 are continued and gradually increased in intensity and duration as tolerated
- Pass Service fitness test at 6 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 6-9 months before cleared without restrictions.

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