



Orthopedic Surgery, Sports Medicine & Arthroscopy Specialists

Jonathan Watson, MD

REHABILITATION PROTOCOL- Fasciotomy for Exertional Compartment Syndrome

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	<ul style="list-style-type: none"> • Control inflammation and pain • Minimize post-operative swelling • Restore normal knee and ankle range of motion • Able to move leg(s) in all directions in standing without pain or compensation • Restore ability to control leg(s) in open and closed kinetic chain during gait • Non-antalgic gait
PRECAUTIONS	<ul style="list-style-type: none"> • WBAT with crutches • Can wean off crutches once pain/swelling controlled • Ice 3-5 times per day for 20 minutes and ice after every therapy session • Avoid positions with limb in a dependent position for a prolonged time • Compression stockings- Use continuously on operative leg(s), can remove for sleeping and bathing. Discontinuing too soon will lead to increased swelling/bruising/pain
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> • Active and passive ankle, knee and hip range of motion • Seated- quadruped toe down stretch, add inversion/eversion as tolerated

	<ul style="list-style-type: none"> •
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> • Quad sets • Straight leg raises- progress to 4 way hip if no extensor lag • Supine double & single leg hip bridges • Active muscle pumping for swelling control • Can do upper body exercises without restriction • Seated heel slides • 4 way light ankle resistance • Weight shifting, gait training
CARDIOVASCULAR EXERCISE	<ul style="list-style-type: none"> • Upper body circuit training or UBE
PROGRESSION CRITERIA	<ul style="list-style-type: none"> • Wound healing without sign of infection, minimal swelling • Able to independently ambulate at least 75% wt bearing with crutches without pain

PHASE 2- Weeks 3-4 postop

REHAB GOALS	<ul style="list-style-type: none"> • Minimize post-operative swelling • Minimize muscle atrophy and flexibility deficits • Full flexibility/mobility of gastrocnemius/ankle • Lower extremity control and alignment with no pain during functional double leg squats • Non-antalgic gait
PRECAUTIONS	<ol style="list-style-type: none"> 1. WBAT, crutches should be discontinued by this phase 2. Compression stockings PRN for swelling/bruising/pain
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> • Continue exercises from Phase 1 to progress to/maintain full active and passive range of motion • Soft tissue/scar mobilization as needed when wounds healed
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> • Continue phase 1 activities • Side stepping, walking lunges • Progress open kinetic chain ankle strengthening as tolerated • Balance and proprioception exercises • Gait drills: start with sagittal plane and progress to frontal and transverse
CARDIOVASCULAR EXERCISE	<ul style="list-style-type: none"> • If wounds are healed: <ol style="list-style-type: none"> 1. Stationary bike & elliptical – begin with low resistance, short periods

	<ol style="list-style-type: none"> 2. Treadmill or track walking progression if no pain or swelling with bike & elliptical- see below 3. Pool/aqua activities
PROGRESSION CRITERIA	<ul style="list-style-type: none"> • Wound healed without sign of infection, minimal/no swelling • Able to independently ambulate at least ¼ mile with normal gait and no/minimal pain

PHASE 3- 5-6 weeks postop

REHAB GOALS	<ul style="list-style-type: none"> • Minimal residual swelling following physical activities • Tolerate 15-30 minutes of continuous aerobic activity without the onset of symptoms/pain • Normal ankle strength and pain free • Lower extremity control and alignment and no pain with single leg functional movements including squats and lunges
PRECAUTIONS	<ol style="list-style-type: none"> 1. WBAT 2. Discontinue stockings 3. Stop activities if preoperative pain/symptoms return.
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> • Continue phase 2 activities • Lower extremity stretching and scar mobilizations • Lower extremity myofascial stretching/foam rolling • Progression of lower extremity closed chain functional strengthening including lunges, step-backs, and single leg squats • Progress heel rise to single leg • Initiate plyometric exercises at 6 weeks – progression: <ul style="list-style-type: none"> ○ 2 feet to 2 feet (jumping) ○ 1 foot to other (leaping) ○ 1 foot to same foot (hopping) • Progress to sport specific training at 6 weeks
CARDIOVASCULAR EXERCISE	<ul style="list-style-type: none"> • Continue phase 2 activities • When able to progress to 20 min continual walking without symptoms begin walk/run progression
PROGRESSION CRITERIA	<ul style="list-style-type: none"> • Walk 12 minutes at moderate/fast pace with minimal/no pain

PHASE 4- 7+ weeks postop

REHAB GOALS	<ul style="list-style-type: none"> • Pain free return to normal activities • Resolution of prior symptoms • Return to sport/work
--------------------	---

PRECAUTIONS	<ul style="list-style-type: none"> • Discontinue activity if preoperative symptoms recur
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> • Continue phase 3 activities, progress as tolerated • LE strengthening- progress to baseline • Plyometrics- add difficulty, single leg, etc • Sport specific- return to baseline
CARDIOVASCULAR EXERCISE	<ul style="list-style-type: none"> • Continue phase 3 activities • Gradual return to running, begin with running every other day
PROGRESSION CRITERIA- RETURN TO SPORT	<ul style="list-style-type: none"> • Full, pain free range of motion • Return to running/sport at least 3-4 days a week without pain or preoperative symptoms • Full LE strength and neuromuscular/balance dynamics

Exertional compartment syndrome walk/run progression

Step 1: Walk on treadmill, progressing up to 20 minutes at a comfortable pace

Step 2: Walk for 5 minutes

Then jog for 1 minute, walk for 4 minutes × three cycles (total of 15 minutes)

Walk for 5 minutes at a comfortable pace.

Step 3: Walk for 5 minutes

Then jog for 2 minutes, walk for 3 minutes × three cycles (total of 15 minutes)

Walk for 5 minutes at a comfortable pace.

Step 4: Walk for 5 minutes

Then jog for 3 minutes, walk for 2 minutes × three cycles (total of 15 minutes)

Walk for 5 minutes at a comfortable pace.

Step 5: Walk for 5 minutes

Then jog for 4 minutes, walk for 1 minute × three cycles (total of 15 minutes)

Walk for 5 minutes at a comfortable pace.

Step 6: Walk for 5 minutes

Jog for 15 minutes

Walk for 5 minutes

Step 7: Walk for 5 minutes

Jog for 20 minutes

Walk for 5 minutes

Step 8: Warm up

Progress your running distance and intensity as tolerated

Cool down