



Indiana University Health

IU Health Physicians Orthopedics & Sports Medicine

EXERTIONAL COMPARTMENT SYNDROME RELEASE (FASCIOTOMY)

PHYSICAL THERAPY PROTOCOL

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Patient Name: _____ **Date of Surgery:** _____

___ **Evaluate and Treat** ___ **Provide patient with home program**

Frequency: _____ x/week x _____ weeks



Weightbearing Guidelines	<ul style="list-style-type: none">• WBAT immediately following surgery• Crutches during the first few postoperative days if needed (usually 3-5 days)
ROM Guidelines	<ul style="list-style-type: none">• Progress ROM as tolerated starting within the first few postoperative days
Criteria to Discharge Assistive Device	<ul style="list-style-type: none">• Pain-free ambulation with normalized gait pattern
Criteria to Initiate Running/Jumping	<ul style="list-style-type: none">• Ability to tolerate 15-30 minutes of continuous aerobic activity without onset of symptoms/pain• 5/5 pain-free ankle strength of involved compartment• Ability to complete single leg functional movements (i.e. squats and lunges) with proper mechanics and no pain• No increase in swelling 12-24 hours following physical activity• No pain 1-2 hours following physical activity
Criteria to Return to Sport	<ul style="list-style-type: none">• Meet criteria to initiate running/jumping• Proper neuromuscular control of eccentric and concentric multi-planar activities with absence of pain, instability and swelling• At least 90% plantarflexion strength of uninvolved side assessed with unilateral heel raises on leg press or maximum heel raise repetitions with equal heel height
Outcome Tools	<ul style="list-style-type: none">• FAAM (ADL and Sports subscales)• LEFS



Weeks 0-3: Protection and Mobility

Weightbearing	<ul style="list-style-type: none">• WBAT with progression to full, pain-free weight bearing with ambulation• Axillary crutches (or other AD) if needed in the first few postoperative days<ul style="list-style-type: none">• Discontinue crutches when gait is normalized
Precautions	<ul style="list-style-type: none">• Avoid activities that increase swelling (i.e. extended sitting, tight clothing proximal to site of surgery, and excessive heat such as a hot pack or bath)• Avoid friction over new scar formation at incision site• Avoid high impact activity such as running, jumping, and hopping
Edema Control	<ul style="list-style-type: none">• Gentle distal to proximal massage of lower leg to assist with venous return and reduce swelling• Ankle pumps (can perform with lower extremity elevated to assist with swelling reduction)
ROM	<ul style="list-style-type: none">• NWB ankle PROM and AROM<ul style="list-style-type: none">• PF, DF, inversion, eversion• Alphabet exercise• Seated BAPS• Knee PROM and AROM as needed
Strengthening	<ul style="list-style-type: none">• Sub-maximal isometric strengthening<ul style="list-style-type: none">• Ankle PF, DF, inversion, eversion• Quad sets<ul style="list-style-type: none">• Progress to SAQ, LAQ and SLR• 4-way hip<ul style="list-style-type: none">• Progress from non-weight bearing to standing
Goals to Progress to Next Phase	<ul style="list-style-type: none">• Lower leg circumference within 2 cm of uninvolved side• Knee and ankle AROM equal to uninvolved side• Normalized gait mechanics including full pain-free weight bearing on level surface, and equal step length bilaterally



Weeks 4-6: Light Strengthening

Precautions	<ul style="list-style-type: none"> • Limit swelling by minimizing prolonged weight bearing activity • Continue to avoid friction over new scar formation at site of incision • Avoid excessive weight bearing eccentric loading • Avoid high impact activity such as running, jumping and hopping
ROM	<ul style="list-style-type: none"> • Initiate scar massage/mobility and desensitization when incision is fully healed • Gentle ankle stretching <ul style="list-style-type: none"> • 30-60 second holds • Nerve mobilizations in supine <ul style="list-style-type: none"> • Focus on involved compartment (i.e. ankle PF and inversion to focus on common peroneal nerve) • Progress repetitions and range of motion as tolerated • BAPS progression (seated → standing)
Strengthening	<ul style="list-style-type: none"> • Start open kinetic chain ankle strengthening <ul style="list-style-type: none"> • 4 way ankle with theraband resistance • Balance and proprioception exercises <ul style="list-style-type: none"> • Bilateral → unilateral • Level, firm surface → soft/unstable surface (foam or BOSU) → balance board • Eyes open → head turns → eyes closed • Double leg squats: mini-squats → full squats • Gait drills <ul style="list-style-type: none"> • Sagittal plane → frontal and transverse planes • Forward and retro marching (sagittal plane), side-stepping (frontal plane), and carioca/grapevine walking (transverse plane)
Cardiovascular	<p>Only initiate the following when incision is fully healed:</p> <ul style="list-style-type: none"> • Stationary bicycle starting with 5-10 minutes at a low resistance and speed • Treadmill walking starting with 5-10 minutes at 2-3 mph and progress time and speed as able • If desired, may begin aquatic activities/swimming starting with 10-15 minutes and progressing time/amount as able
Goals to Progress to Next Phase	<ul style="list-style-type: none"> • Lower extremity circumference within 1 cm of uninvolved side • Ability to maintain single leg stance with eyes open on unstable surface for 30-60 seconds • Ankle DF ROM equivalent to uninvolved side measured in weight bearing lunge position • Proper lower extremity mechanics with no pain during functional double leg squats



Weeks 6-8: Progression of Strengthening/Return to Jogging

Precautions	<ul style="list-style-type: none"> • Continue to limit activities which increase swelling • Limit friction over scar tissue • No strenuous or painful activities
ROM	<ul style="list-style-type: none"> • Continue stretching and nerve mobilizations as needed • Lower extremity soft tissue mobilization to improve flexibility and soft tissue mobility of the lower leg <ul style="list-style-type: none"> • Instrument assisted, foam roller, massage stick roller
Strengthening	<ul style="list-style-type: none"> • Progression of closed chain functional strengthening <ul style="list-style-type: none"> • Lunges, step-ups, single leg squats • Double leg heel raise → single leg heel raise <ul style="list-style-type: none"> • Can combine with gait drills such as marching, or heel/toe walking • Initiate plyometric exercises at 6 weeks <ul style="list-style-type: none"> • Plyometric shuttle (DL→SL jumping) • DL jumping → SL jump to contralateral foot (leaping) → SL jump to same foot (hopping) <ul style="list-style-type: none"> • Progress repetitions, and height/distance as able
Cardiovascular	<ul style="list-style-type: none"> • Initiate or progress aquatic activities/swimming if wounds are fully healed • Progressive treadmill walking time and speed • Light jogging can be initiated on level surface <ul style="list-style-type: none"> • 6-8 weeks for 1-2 compartment release • 8-10 weeks for 4 compartment release • Progressive walk-jog interval training
Goals to Progress to Next Phase	<ul style="list-style-type: none"> • Complete 15-30 minutes of continuous aerobic activity without symptoms or pain • 5/5 pain-free ankle strength of muscles in involved compartment • Ability to complete SL functional movements (such as SL squats and lunges) without pain, and with proper mechanics • No residual swelling 12-24 hours following physical activity • No pain 1-2 hours after physical activity

Weeks 8-12+: Return to Sport/Impact Training

Precautions	<ul style="list-style-type: none"> • Continue to avoid pain and increased swelling during and following activity
ROM	<ul style="list-style-type: none"> • Continue knee and ankle stretching and ROM exercises as appropriate
Strengthening	<ul style="list-style-type: none"> • Progress strengthening exercises to promote stability and neuromuscular control with increased loads and speeds <ul style="list-style-type: none"> • Low velocity, single plane activities → higher velocity, multi-plane activities • Forward and backward → side-to-side and transverse plane movements • Sport-specific training beginning at a low-intensity <ul style="list-style-type: none"> • Instruct patient on gradual return to sport/activity progression • Biomechanical assessment of specific sport activity with video analysis as needed <ul style="list-style-type: none"> • Running gait: Forefoot strike running pattern reduces intracompartmental pressure
Goals to Progress to Return to Sport/Work	<ul style="list-style-type: none"> • Meet criteria to initiate running/jumping • Proper neuromuscular control of eccentric and concentric multi-planar activities with absence of pain, instability, and swelling • At least 90% plantarflexion strength of uninvolved side assessed with unilateral heel raises on leg press or maximum heel raise repetitions with equal heel height

Reference: <https://wexnermedical.osu.edu>



By signing this referral, I certify that I have examined this patient and physical therapy is medically necessary. This patient ___ would ___ would not benefit from social services.

Date: _____

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