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Post-Operative Protocol: Achilles Insertional Speedbridge

PRE-OPERATIVE			
PRE-OP (2-4+ WEEKS)	RESTRICTIONS & PRECAUTIONS	PHYSIOTHERAPY INTERVENTIONS	REHABILITATION GOAL
	None	<ul style="list-style-type: none"> - Education RE: what to expect & what is expected of you post-operatively - Education & practice RE: use of gait aid, mobility, transfers, and stairs while maintaining post-op WB status - Education re: benefits of strengthening & cardio pre-operatively - Review immediate post-operative exercises 	<ul style="list-style-type: none"> - Prepare for post-op rehabilitation - Procure equipment for post-op rehabilitation <ul style="list-style-type: none"> - "Even up" shoe - Gait aid - Walking boot with wedges - Safe ambulation, transfers and stairs with gait aid while maintaining post-op WB status
POST-OPERATIVE			
IMMEDIATE POST-OP (0-3 WEEKS)	RESTRICTIONS & PRECAUTIONS	PHYSIOTHERAPY INTERVENTIONS	REHABILITATION GOALS
	<ul style="list-style-type: none"> - NWB - Elevation of affected side in supine "Toes above the Nose" - Do not get foot wet 	MOBILITY <ul style="list-style-type: none"> - AROM of hips and knees STRENGTH <ul style="list-style-type: none"> - Strengthening of hips, knees and core while maintaining NWB status OTHER <ul style="list-style-type: none"> - Education RE: use of gait aid, mobility, transfers, and stairs while maintaining NWB status 	<ul style="list-style-type: none"> - Control pain and swelling - Minimize loss of core strength - Minimize loss of hip and knee ROM and strength - Promote incision healing - Protect repair - Safe ambulation, transfers and stairs with gait aid while maintaining NWB status
Criteria to Progress: <ul style="list-style-type: none"> - Follow-up appointment with surgeon - Staples/sutures and bandage/splint removed - Adequate pain control (< 5/10) 			
INTERMEDIATE POST-OP (4-6 WEEKS)	RESTRICTIONS & PRECAUTIONS	PHYSIOTHERAPY INTERVENTIONS	REHABILITATION GOALS
	<i>*Continue with Physiotherapy Interventions from immediate post-op phase as appropriate</i>		
	<ul style="list-style-type: none"> - Protected weight bearing in boot WITH wedges <i>*Remove 1 wedge per week</i> - Do not DF past neutral - Boot stays on for sleep - Avoid direct manual pressure on healing incision 	MOBILITY <ul style="list-style-type: none"> - 4-way ankle ROM <i>*DF to neutral only</i> <ul style="list-style-type: none"> - Foot, ankle, and big toe mobilizations as appropriate 	<ul style="list-style-type: none"> - Restore 3-way ankle ROM - Restore DF to neutral - Increase scar mobility - Restore foot and ankle strength - Restore proprioception

AROM – Active Range of Motion
LSI – Limb Symmetry Index
WB – Weight Bearing

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INTERMEDIATE POST-OP (4-6 WEEKS)	<ul style="list-style-type: none"> - Gradual increase in WB by 25% each week <ul style="list-style-type: none"> Week 4 = 25% WB Week 5 = 50% WB Week 6 = 75% WB - Seated shower - Avoid post-exercise pain and swelling 	<p>STRENGTH</p> <ul style="list-style-type: none"> - 3-way ankle strengthening against gentle resistance - Seated heel raises once neutral DF achieved - Intrinsic foot strengthening <p>OTHER</p> <ul style="list-style-type: none"> - Proprioception (joint position sense) - Scar mobilization once incision is fully healed - Swimming/pool exercises once incision fully healed - Gait retraining in boot, wedges, + "Even up" shoe - Therapeutic modalities as deemed appropriate by physiotherapist 	<ul style="list-style-type: none"> - Normalize gait as much as possible in boot + wedges, with gait aid and "Even up" shoe - Protect repair - Control pain and swelling - Independence with home exercise program – to be performed daily - Safe ambulation, transfers and stairs with gait aid while maintaining appropriate WB status
<p>Criteria to Progress:</p> <ul style="list-style-type: none"> - Adequate pain control (< 3/10) - Minimal swelling (< 1cm difference in figure 8 measurement) - Full PF, EV, and IV ROM and DF to neutral only - Symmetrical joint position sense (< 5 degree error) 			
LATE POST-OP (7-9 WEEKS)	<p>RESTRICTIONS & PRECAUTIONS</p> <ul style="list-style-type: none"> - Protected WBAT in boot WITHOUT wedges - May remove boot for sleep - No overt stretching of the Achilles - Avoid post-exercise pain and swelling 	<p>PHYSIOTHERAPY INTERVENTIONS</p> <p><i>*Continue with Physiotherapy Interventions from intermediate post-op phase as appropriate</i></p> <p>MOBILITY</p> <ul style="list-style-type: none"> - Seated heel slides for DF ROM as tolerated <p>STRENGTH</p> <ul style="list-style-type: none"> - 4-way ankle strengthening against resistance <p>OTHER</p> <ul style="list-style-type: none"> - Stationary cycling in boot - Gait retraining in boot without wedges 	<p>REHABILITATION GOALS</p> <ul style="list-style-type: none"> - Restore ankle strength - Continue to protect repair - Normalize gait as much as possible in boot and "Even up" shoe, without wedges or gait aid - Restore cardiovascular endurance
<p>Criteria to Progress:</p> <ul style="list-style-type: none"> - Discontinue use of gait aid - Minimal post-exercise pain and swelling 			

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TRANSITIONAL (10-16 WEEKS)	RESTRICTIONS & PRECAUTIONS	PHYSIOTHERAPY INTERVENTIONS	REHABILITATION GOALS
	<i>*Continues with Physiotherapy Interventions from late post-op phase as appropriate</i>		
	<ul style="list-style-type: none"> - No WB restrictions - DF ROM no longer restricted but progress gently <i>*NWB calf stretching only to be used if DF ROM is delayed</i> - Avoid post-exercise pain and swelling 	<p>MOBILITY</p> <ul style="list-style-type: none"> - Loaded DF permitted <p>STRENGTH</p> <ul style="list-style-type: none"> - Begin standing heel raise progression based on tolerance <p>OTHER</p> <ul style="list-style-type: none"> - Bipedal and single leg balance exercises - Stationary cycling - Gait retraining 	<ul style="list-style-type: none"> - Restore full ankle ROM - Progress strengthening - Restore balance - Normalize gait in supportive shoe - Promote proper movement patterns
<p>Criteria to Progress:</p> <ul style="list-style-type: none"> - No post-exercise pain and swelling - Normalized gait pattern in supportive shoe - Symmetrical ROM during bipedal standing heel raises - > 90% LSI Y-balance test 			
ADVANCED POST-OP (17-20 WEEKS)	RESTRICTIONS & PRECAUTIONS	PHYSIOTHERAPY INTERVENTIONS	REHABILITATION GOALS
	<i>*Continue with Physiotherapy Interventions from transitional phase as appropriate</i>		
	<ul style="list-style-type: none"> - Avoid post-exercise pain and swelling 	<p>MOBILITY</p> <ul style="list-style-type: none"> - As per previous phases <p>STRENGTH</p> <ul style="list-style-type: none"> - Progress standing heel raise progression based on tolerance - Wall sit heel raises - Initiate single leg strengthening <p>OTHER</p> <ul style="list-style-type: none"> - Elliptical - Stair climber - Initiate beginner level plyometrics 	<ul style="list-style-type: none"> - Progress strengthening - Restore tolerance for plyometrics/agility (if important to the patient)
<p>Criteria to Progress:</p> <ul style="list-style-type: none"> - No post-exercise pain and swelling - No pain or swelling with 30 minutes of fast paced walking - Good tolerance and performance with beginner level plyometrics - > 90% LSI single hop test for distance and triple hop for distance - > 95% ATRS 			

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RETURN TO SPORT (21+ WEEKS)	RESTRICTIONS & PRECAUTIONS	PHYSIOTHERAPY INTERVENTIONS	REHABILITATION GOALS
	- None	- Interval walk/jog - Return to running program - Agility and plyometrics - Continue strengthening and proprioceptive exercises	- Initiate sport specific training and progress to full return to sport

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Achilles Tendon Rupture Score (ATRS)

Patient's are asked to grade from 0 to 10 according to their level of limitations and/or difficulties

1. Are you limited because of decreased strength in the calf/Achilles tendon/foot?
2. Are you limited because of fatigue in the calf/Achilles tendon/foot?
3. Are you limited due to stiffness in the calf/Achilles tendon/foot?
4. Are you limited because of pain in the calf/Achilles tendon/foot?
5. Are you limited during activities of daily living?
6. Are you limited when walking on uneven surfaces?
7. Are you limited when walking quickly upstairs or uphill?
8. Are you limited during activities that include running?
9. Are you limited during activities that include jumping?
10. Are you limited in performing hard physical labor?

Beginner Level Plyometrics

- 3x15 bipedal heel raises
 - o Move to rebounding bipedal heel raises as tolerated
- 3x15 single leg heel raises
 - o Move to rebounding single leg heel raises as tolerated
- Bipedal hopping in place
- Single leg hopping in place

Single Hop Test

- Jump as far as possible on a single leg, without losing balance and landing firmly
- The distance is measured from the start line to the heel of the landing leg

Standing Heel Raise Progression

- 25 repetitions needed to progress
 - o Bipedal standing heel raises with 25% body weight on affected side
 - o Bipedal standing heel raises with 50% body weight on affected side
 - o Bipedal standing heel raises with 75% body weight on affected side
 - o Bipedal standing heel raises with single leg lowering on affected side
 - o Single leg heel raises

Triple Hop Test

- Jump as far as possible on a single leg three consecutive times, without losing balance and landing firmly

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- The distance is measured from the start line to the great toe of the landing leg

Y-Balance Test

- Patient stands on one leg while reaching out in 3 different directions with the contralateral leg (Directions are anterior, posteromedial, and posterolateral)
- 3 trials in each of the 3 directions for each foot are collected and the maximum reach in each direction is used for analysis