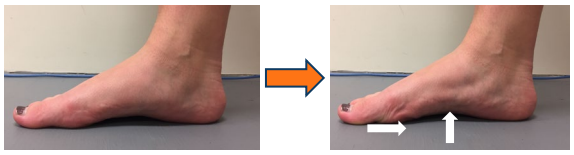
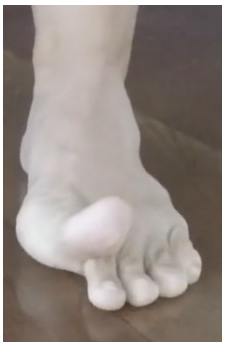
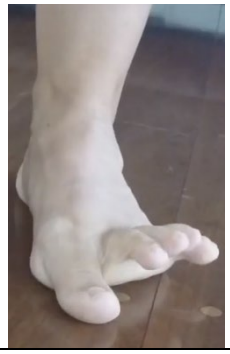
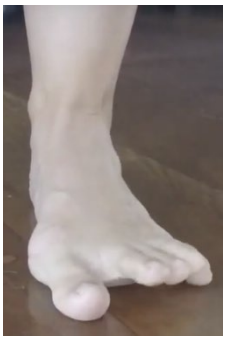
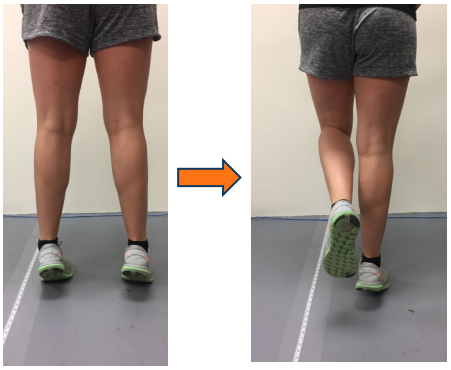
Appendix/Supplemental Material

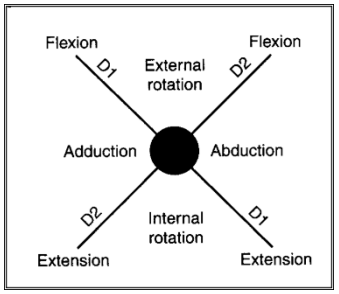
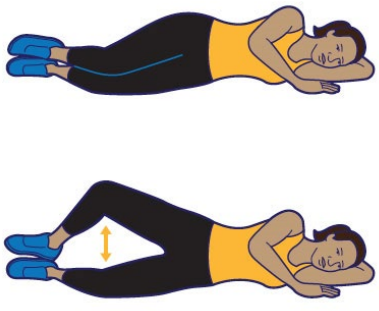
Rehab Guide

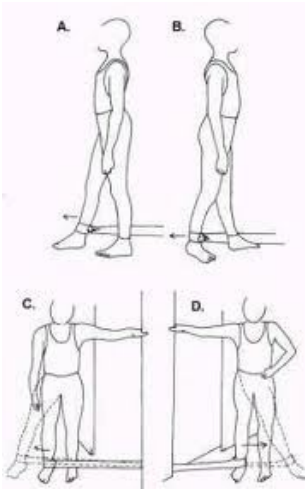
Name	Description	Photo
Intrinsic Foot Muscle Exercises		
Short Foot Exercise	Patient starts in seated or standing position with foot flat on the ground. They are asked to raise their arch up without curling their toes (bring first metatarsal head backward toward calcaneus). Progression: seated, bipedal standing, single limb stance Goal is 50 repetitions	
1st Toe Extension	Patient starts in seated or standing position with foot flat on the ground. They are asked to extend their 1st toe while keeping toes 2-5 on the ground. Progression: seated, bipedal standing, single limb stance Goal is 50 repetitions	
Toes 2-5 Extension	Patient starts in seated or standing position with foot flat on the ground. They are asked to extend their toes 2-5 while keeping 1st toe on the ground. Progression: seated, bipedal standing, single limb stance Goal is 50 repetitions	

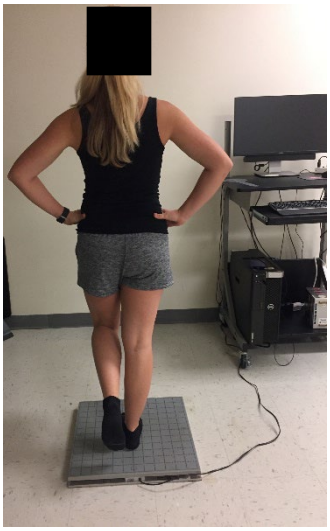
Toe Extension & Splay	Patient starts in seated or standing position with foot flat on the ground. They are asked to extend all toes, then abduct ("splay"), and then slowly lower toes starting with 1 & 5, then 2-4. Progression: seated, bipedal standing, single limb stance Goal is 50 repetitions	
Stretches		
Standing straight knee dorsiflexion	Patient stands, places hands on wall, stretches back leg with knee straight. Goal is 3x30 seconds	
Standing bent knee dorsiflexion	Patient stands, places hands on wall, stretches back leg with knee bent. Goal is 3x30 seconds	

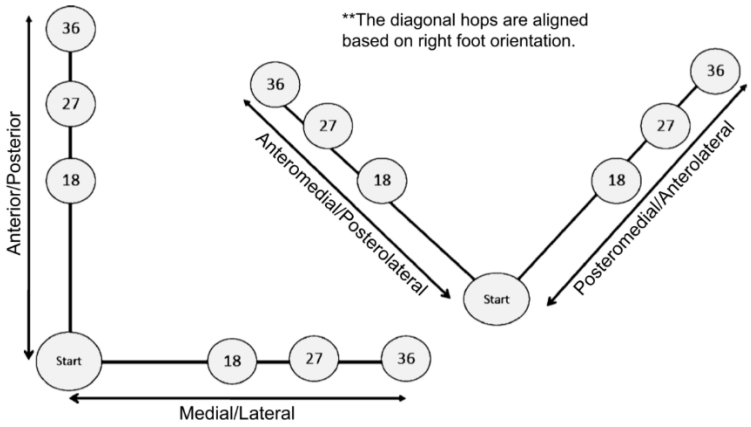
Seated towel stretches	Patient sits with one leg bent and other leg straight, use towel to pull foot into dorsiflexion. Repeat with stretching leg in bent position. Goal is 3x30 seconds	

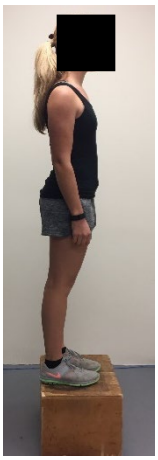
Ankle Exercises		
Double legged/Single legged heel raise	Patient stands on ground with one or both feet and is asked to raise up onto their toes bringing their heel off of the ground. Goal is 3x10. Then progress.	
Double legged/Single legged forefoot raise	Patient stands on ground with one or both feet and is asked to raise up their toes keeping their heel on the ground. Goal is 3x10. Then progress.	
4-way manual resistance	Patient sits with leg straight on the table. Clinician resists them through the full range of motion in the following directions: dorsiflexion, inversion, eversion, plantar flexion	

	Progression: concentric contraction to eccentric contractions Increase resistance if exercise is not challenging enough.	
D1/D2 PNF	Patients will move ankle in diagonal D1 and D2 patterns against manual resistance. Increase resistance if exercise is not challenging enough.	
3-way walks	Patient walks with their feet in 4 positions: on their toes, on their heels, on the "inside" of their foot for 10m lap. Increase reps as needed.	
Hip Exercises		
Quadraped: arm extension/leg extension	Patient starts in position on hands and knees. The patient then simultaneously will extend one arm and the opposite leg. Then they will repeat on the opposite side. Progression: arm/leg only, both arm and leg Proper form is more important than high reps. Goal is 3x10.	
Clamshells with theraband	Patient starts in side-lying position with knees and hips flexed. Ask patient to rotate leg upward then return to start position. Progression: Place the theraband around their mid-thigh, increase resistance (color) Progress when they can complete 3x10.	

4-way hip with theraband	Patient stands on their “healthy” limb and uses ankle sprain limb to perform hip motions. Place appropriate theraband around lower leg. Patient completes the following motions at the hip: flexion, abduction, extension, and adduction. Progression: increase theraband resistance color, have patient stand further from anchor Progress when they can complete 3x10.	
Internal/External rotation on BOSU with theraband	Patient sits on BOSU ball with erect posture. Place the appropriate theraband around the lower leg. Have patient internally and externally rotate the hip. Progression: increase theraband resistance color, have patient sit further from anchor Progress when they can complete 3x10.	

Balance		
Single leg balance	Patient position: stand with 1 on ground, arms crossed in front of their chest, lift the uninvolved limb to about 30º of hip flexion and 45º of knee flexion, and stand as still as possible. Progression eyes: open to closed Progression surface: firm, foam, DynaDisc	

	Progress if patient can complete 3x30 seconds error free.	
Reach tasks (Star Excursion Balance Test)	Patient stands with hands on hips, on the test limb at the edge of the tape measure. The patient reaches as far as they can in the designated direction. Patient is instructed to reach in specific directions. They must control their motion, tap as far as they can, and return to the start position. Pick 3 different directions for each visit. Progression surface: firm, foam, DynaDisc Progress when they can complete 2x10.	
Hop to stabilization	Patients will perform 10 hops in each of 4 directions: medial to lateral, anterior to posterior, anteromedial to posterolateral, and anterolateral to posteromedial. Targets will be placed at a set distance away. Progression: 18 inch, 27 inch, 36 inch. Progression surface: firm, foam, DynaDisc Add reach in opposite direction of hop for increased difficulty. Progress after 10 error-free hops.	

Functional Exercises		
Lunges	Patient will lunge forward and will progress by surface type. Hands will remain on their hips. Errors include taking hands off of hips, lost balance during descent or ascent, unable to reach 90º/90º position, or excessively alter the trunk lean during any phase of the lunge. Progression surface: firm, foam, DynaDisc Progress after 10 error-free lunges.	
Forward step-ups and step-downs (30 cm box)	Step up: patient will stand behind box and step up in forward direction with the involved limb Step down: patient will stand on top of box and step down in forward direction with the involved limb Progression surface: firm, foam, DynaDisc Increase difficulty as needed. Goal is 3x10	  
Lateral step-ups and step-downs (30 cm box)	Step up: patient will stand next to box and step up to the side with the involved limb Step down: patient will stand on top of box and step down to the side with the involved limb Progression surface: firm, foam, DynaDisc Increase difficulty as needed. Goal is 3x10.	

Dot jumping drill	Dots (targets) will be placed apart by 24 inches. Participants will jump from dot to dot as fast as possible while remaining comfortable. Hop directions include: medial to lateral, anterior to posterior, figure of 8 randomized jumps. (Change direction of figure 8 as necessary) Phase 1: double legged jumps Phase 2: single legged jumps Phase 3: progress duration of single legged jumps by 15 seconds after completing 3 successful trials at previous duration Goal is 3x30 seconds comfortably	

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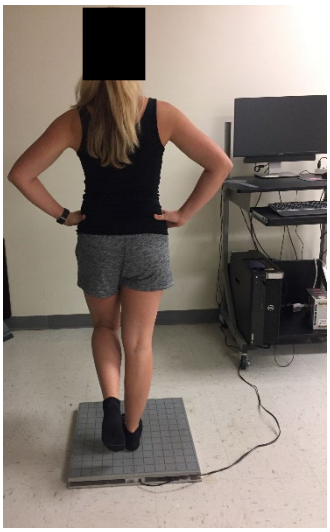
Single leg balance	Patient position: stand with 1 on ground, arms crossed in front of their chest, lift the uninvolved limb to about 30º of hip flexion and 45º of knee flexion, and stand as still as possible. Progression eyes: open to closed Progression surface: firm, foam, DynaDisc Progress if patient can complete 3x30 seconds error free.	
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