

**FEMORAL ACETABULAR  
IMPINGEMENT  
NON-OPERATIVE PROTOCOL**

	Guidelines	Goals
Initial Evaluation	<p><b>EVALUATION</b></p> <ul style="list-style-type: none"> <li>• Screen past medical history and current symptoms.</li> <li>• Assess Functional movement including lumbar and thoracic mobility</li> <li>• Evaluate both bilateral and unilateral squatting barefoot. Assess dynamic internal femoral rotation, valgus knee, pronation at the foot, and hip flexion angle. Medial cascade can contribute to and predispose the patient to FAI. Lacking hip flexion in weight bearing can be informative.</li> </ul> <p><b>MUSCLE BALANCE RESTORATION</b></p> <ul style="list-style-type: none"> <li>• Assess muscle activation: patients ability to selectively turn on glute max and glute med</li> <li>• Patients will typically have significant weakness in the hip abductors and extensors demonstrated both with open/closed chain testing.</li> <li>• Assess hip flexor myofascial quality and length with Thomas Test.</li> <li>• Assess adductor muscle group: muscle quality and strength. This muscle group often compensates for weakness/muscle imbalance elsewhere</li> <li>• It is important to mobilize restricted soft tissue; strong attention must be given to the glut med/max, iliopsoas, rectus femoris and piriformis. The hip adductors, VL and 1TB, posterior tibialis and 1TB will typically need work as well.</li> </ul> <p><b>ASSESSMENT</b></p> <p>Determine primary impairments for your patient, and which phase of treatment is most appropriate. Note: If hip joint is significantly flared up it may take weeks of <u>activity modification</u> to see real change in patients' symptoms. You should see steady objective progress in ROM, muscle function, movement before patient may note change in pain, function.</p>	<ul style="list-style-type: none"> <li>• Identify and eliminate aggravating factors: <ul style="list-style-type: none"> <li>• Running</li> <li>• Sports Activities</li> <li>• Prolonged sitting: discuss modifications to work chair, car seat and ergonomics</li> <li>• Yoga or aggressive hip stretching</li> <li>• Sleeping: prone frog leg position may aggravate symptoms</li> </ul> </li> <li>• Activity is only modified if it aggravates the patient symptoms</li> </ul>
PHASE I	<p><b>EXERCISE PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Pelvic tilts</li> <li>• Glute Isometrics</li> <li>• Double leg bridge</li> <li>• Prone assisted hip extension (PAHE)</li> <li>• Hip extension off physioball</li> <li>• Quad series as tolerated</li> <li>• Self soft tissue techniques using foam roller or massage stick</li> <li>• Cardio: walking, biking, or elliptical only if pain-free</li> <li>• Quad, Hamstring stretching usually well tolerated in this phase</li> </ul> <p><b>MANUAL INTERVENTION</b></p> <ul style="list-style-type: none"> <li>• Soft Tissue and dry needling: iliopsoas , TFL, rectus femoris, adductors, glutes, hamstrings , pelvic floor</li> <li>• Hip ROM and joint mobilization to address restrictions</li> </ul>	<p><u>Criteria for Progression to Phase 2:</u></p> <ul style="list-style-type: none"> <li>• Improving Pain-free ROM</li> <li>• Good Glute Activation</li> <li>• No pain with AOL's</li> </ul>

<p>PHASE II</p>	<p><b>EXERCISE PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Pelvic tilt progression: avoiding active hip flexion if irritating.</li> <li>• Double leg bridge</li> <li>• Single leg bridge</li> <li>• Standing abduction/cord kick series avoiding hip flexion if not tolerated</li> <li>• Side lying adduction</li> <li>• Quad hip extension with leg straight</li> <li>• Clams</li> <li>• Foam Roller Bridging Series</li> <li>• Wall Squats</li> <li>• TRX Squats with more open hip angle as tolerated</li> <li>• Bilateral calf raises with emphasis on proper push</li> </ul>	<p><u>Criteria for Progression to Phase 3:</u></p> <ul style="list-style-type: none"> <li>• Hip abduction strength 4/5</li> <li>• Flexion, ER and IR ROM within normal limits</li> <li>• 50% FABER ROM compared to contralateral side</li> <li>• Normal Gait</li> <li>• No Trendelenberg with Single Leg &amp; Stance/descending stairs</li> </ul> <p>Pain-free bilateral squat without compensation</p>
<p>PHASE III</p>	<p><b>EXERCISE PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Continue with phase 2 progression</li> <li>• May add more abdominal work with dead bug progression</li> <li>• Add unilateral squat, dip, or reverse lunge progression</li> <li>• Unilateral calf raises with emphasis on proper push off mechanics</li> <li>• Hip extension off physioball</li> <li>• Instruct on squat; Emphasize proper technique.</li> <li>• Leg Press</li> <li>• Introduce multi-directional movement: Understand that these patients struggle with lateral movement and multi-directional stability.</li> <li>• May be more aggressive with hip ER and hip flexor passive stretching</li> <li>• For impact athletes begin basic ladder series</li> <li>• If basic ladder series tolerated well, may introduce light jogging for short periods no significant distance in this phase.</li> <li>• Self manual maintenance work with foam roller and massage stick</li> </ul>	<p><u>Criteria for Progression to Phase 4:</u></p> <ul style="list-style-type: none"> <li>• Hip abduction and extension 5/5</li> <li>• Single Leg Squat symmetrical with opposite side</li> <li>• No Impingement pain with ROM</li> </ul>
<p>PHASE IV</p>	<p><b>MANUAL INTERVENTION</b></p> <ul style="list-style-type: none"> <li>• Continue soft tissue mobilization and dry needling.</li> <li>• Goal to reduce need/frequency of dry needling in this phase.</li> <li>• Continue joint mobilization as needed.</li> <li>• May begin more aggressive flexibility work in this phase as needed.</li> <li>• Self manual soft tissue maintenance work with foam roller/massage stick</li> </ul> <p><b>EXERCISE PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Continue with phase 3 progression</li> <li>• Return to distance running protocol can begin in this phase per protocol</li> <li>• Advance Lunge progression</li> <li>• Advance ladder series to include jumping</li> </ul>	<p><u>Return to full activity</u></p>

**Clinical Pearls:**

1. Your assessment of what phase your patient is in is very important. If you are not having success, you may have chosen therapeutic exercises that are too advanced. You should see objective progress by 2 weeks, and functional progress by 3 weeks. If your patient is not progressing, return to earlier phase!
2. Activity modification is HUGE with this patient population. You must get buy-in from patient (and parents) to decrease irritation in the joint.
3. Soft Tissue assessment is also very important. Continually assess and re-assess after STM or FON to determine effect of intervention on ROM.
4. Progress SLOWLY. Be sure that your patient has adequate muscle activation and functional stability before progressing. It is better to go slowly than to have a 2-3 week set back that frustrates both you and your patient.

\*Dr. Trasolini would like to thank the University of Colorado for this protocol.