SOUTHEAST ORTHOPEDIC SPECIALISTS

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Arthroscopic Hip Surgery
Physical Therapy Protocol

The intent of this protocol is to provide guidelines for your patient's therapy progression. It is not intended to serve as a recipe for treatment. We request that the PT/ PTA/ ATC should use appropriate clinical decision making skills when progressing a patient forward.

Please keep in mind common problems that may arise following hip arthroscopy: hip flexor tendonitis, adductor tendonitis, sciatica/piriformis syndrome, ilial upslips and rotations, LB pain from QL hypertonicity and segmental vertebral rotational lesions. If you encounter any of these problems please evaluate, assess, and treat as you feel appropriate, maintaining Dr. Redmond's precautions and guidelines at all times. Gradual progression is essential to avoid flare-ups. If a flare-up occurs, back off with therapeutic exercises until it subsides.

Please reference the exercise progression sheet for timelines and use the following precautions during your treatments. Thank you for progressing all patients appropriately. **Successful treatment requires a team approach, and the PT/PTA/ATC is a critical part of the team! Please contact Dr. Redmond at any time with your input on how to improve the therapy protocol.**

Please Use Appropriate Clinical Judgment During All Treatment Progressions

Initial Pre-op Assessment

Assess bilateral hips
ROM – flexion, extension, IR, ER, abd, add
Gait – look for Trendelenburg gait
Impingement test – flexion/adduction/IR often reproduces pain
Ober test
Strength – abduction, flexion, extension

****PLEASE SEE LAST PAGE FOR MODIFICATIONS - PATIENT SPECIFIC PROCEDURES****

Begin therapy POD #1 (unless otherwise instructed)

Phase 1- Immediate Rehabilitation (1-3 weeks):

Goals:

Protection of the repaired tissue
Prevent muscular inhibition and gait abnormalities
Diminish pain and inflammation

Precautions:

20 lb. flat-foot weight-bearing post-op for 2-4 weeks, unless noted under specific procedure modifications
Do not push through pain or pinching, gentle stretching will gain more ROM
Gentle PROM only, **no passive stretching**
Avoid Capsular Mobilizations
Avoid any isolated contraction of iliopsoas

Initial Exercises

AAROM: within range limitations, pain free.
ROM Guidelines (pain free)
Flexion: 90°
Ext: 0°
Abd: 25-30°
IR: 90 deg. hip flexion: 0 deg; neutral (prone): within comfort zone
ER: 90 deg. hip flexion: 30 deg; neutral (prone): 20 deg
After 3 weeks, gradually progress ROM as tolerated, **within pain-free zone*

- STM (scar; ant, lat, med and post aspects of hip; lumbar paraspinals, quad/hamstring)
-Stationary bike with no resistance
-Isometric (quad setting, gluteal setting, TA isometrics with diaphragmatic breathing)
-Prone lying (modify if having low back pain) – AVOID in instability patients
-Week 3: Start isometrics and emphasize gait training (follow procedure specific modifications if indicated)

Phase 2 – Transitional Phase of Rehabilitation (4-6 weeks)

Criteria for progression to Phase 2:

Full Weight Bearing Must Be Achieved Prior To Progressing To Phase 2
Non weight bearing exercise progression may be allowed if patient is not progressed by MD to full weight bearing (Please see last page for microfracture modifications)

Goals:

Protection of the repaired tissue
Restore Full Hip ROM – (ROM must come before strengthening)
Restore Normal Gait Pattern
Initiate Strengthening of Hip, Pelvis, and LE's
Emphasize gluteus medius strengthening (non-weight bearing)

Precautions:

No forced (aggressive) stretching of any muscles
No joint/capsular mobilizations – to avoid stress on repaired tissue
Avoid inflammation of hip flexor, adductor, abductor, or piriformis

Intermediate Exercises

Gentle strengthening; ROM must come before strengthening

-Stationary bike no resistance, add resistance at 5-6 weeks
-Start strengthening progression for hip flexion, extension, abduction, and IR/ER (see appendix)
-Pelvic floor strengthening
-Initiate light quad and hamstring strengthening
-1/2 kneel: gentle pelvic tilt for gentle stretch of iliopsoas
-Quadruped rocking (gentle prayer stretch) for flexion ROM
-Gait progression: weight shift side to side then weight shift forward/backward
Step over small obstacle with non-surgical leg (focus on hip extension on surgical leg)
-Balance progression: double leg to single leg balance

Phase 3 – Intermediate Rehabilitation (7-9 weeks)

Criteria for progression to Phase 3:

Full Weight Bearing Must Be Achieved Prior To Progressing To Phase 3

Goals:

Full Hip ROM and Normal Gait Pattern
Progressive Strengthening of Hip, Pelvis, and LE's
Emphasize gluteus medius strengthening in weight bearing

Precautions:

No forced (aggressive) stretching of any muscles
No joint/capsular mobilizations – to avoid stress on repaired tissue
Avoid inflammation of hip flexor, adductor, abductor, or piriformis

Intermediate Exercises

-Continue with progression of exercises from appendix
-Crab / monster walk
-Increase intensity of quadriceps and hamstring strengthening
-Quadruped lumbar / core stabilization progression
(Pelvic tilts to arm lifts to hip extension to opposite arm/leg raise)
-Balance progression: single leg balance to compliant/uneven surface
-Elliptical / stair stepper: 6-8 weeks
-Step and squat progression
-Slide board: hip abduction / adduction, extension, IR/ER. No forced abduction. Stop short of any painful barriers.

Phase 4 – Advanced Rehabilitation (10-12 weeks)

Criteria for progression to Phase 4:

Full ROM
Pain free Normal gait pattern
Hip flexor strength of 4/5
Hip abd, add, ext, and IR/ER strength of 4+/5

Goals:

Full Restoration of muscular strength and endurance

Full Restoration of patient's cardiovascular endurance

Precautions:

No contact activities
No forced (aggressive) stretching
No joint mobilizations – to avoid stress on repaired tissue

Exercises:

-No treadmill walking until 12 weeks
-Continue with progression of exercises from appendix
-Anterior / side plank progression
-Lunges all directions
-Single leg squat

Phase 5 – Sport Specific Training > 12 weeks

Criteria for progression to Sport Specific Training:

Hip flexor strength 4+/5
Hip add, abd, ext, IR/ER 5-/5
Cardiovascular endurance equal to pre-injury level
Demonstrates proper squat form and pelvic stability with initial agility drills.
Stable single-leg squat.
Return to sport activities as tolerated without pain, consistent with MD orders.

Exercises:

-Customize strengthening and flexibility program based on patient's sport and/or work activities
-Z cuts, W cuts, Cariocas
-Agility drills
-Jogging
-Gradual return to sport

MODIFICATIONS for SPECIFIC Procedures

See operative report for specifics and consider the following therapeutic techniques.

-Iliopsoas Release:

Begin gentle stretch beginning with prone lying (Phase 1)
Gentle active release of iliopsoas (Phase 2)

-Piriformis Release:

POD #1 begin stretch piriformis (flexion, adduction, ER) without causing anterior hip pain and sciatic nerve flossing (Phase 1)
Gentle active release of piriformis (Phase 2)

-Microfracture:

20 lbs FFWB with crutches x 8 weeks
Can progress from Phase 1 to non-weight bearing strengthening portions of Phase 2
Begin full weight bearing at 8 weeks

-Capsular Plication for Hip Laxity:

Avoid combined Extension and External Rotation for 6 weeks
Focus rehab on gradual strength progression
No joint mobilizations or over stretching ROM
No Prone ROM for 6 weeks
Gradually progress AAROM under patient's control within comfort

-Gluteus Medius Repair

20 lbs FFWB with crutches x 6 weeks
Can progress from Phase 1 to non-weight bearing strengthening portions of Phase 2
Initiate hip abductor strengthening progression at 6 week mark

Recommended sitting position when having to sit for longer durations.

(Right leg in picture is surgical leg)

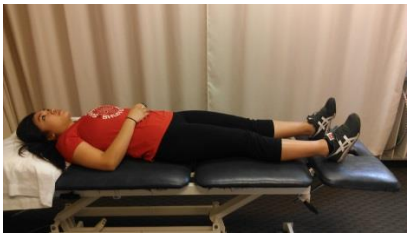
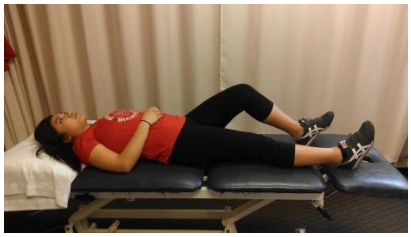
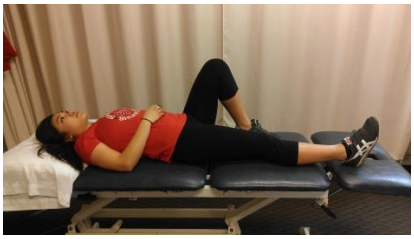
Exercise Addendum:
Below is a list of exercises with ideal progressions. It is recommended to begin with the first exercise listed, least difficult/resistance, and progress down the list towards highest difficulty/increased resistance when appropriate. Be sure to differentiate between pain and muscular soreness. Pain should be avoided during progression of exercises.

1. **Hip flexion:**

A. Seated isometric with manual resistance:

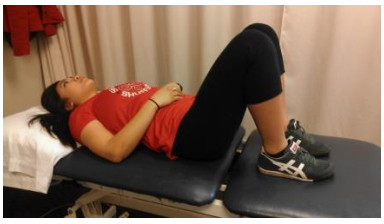
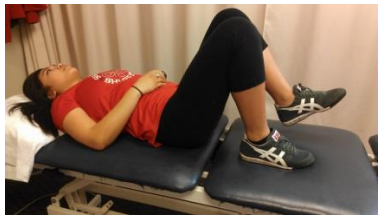
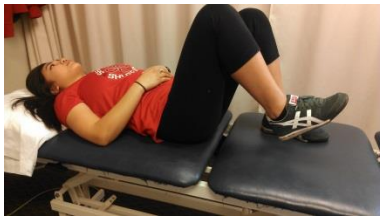
Patient is seated at edge of plinth. Therapist or patient provides manual resistance through thigh, while the patient simultaneously pushes upward into the resistance. This may need to be started with less than 100% intensity. Hold for 5-10 seconds and then relax.

B. Supine heel slide:

Patient lies on back with legs extended. The patient activates core musculature to keep spine in neutral, and slowly slides involved heel towards buttocks. The patient returns to starting position while keeping abdominals contracted and low back flat on the table. This can be made harder by performing with shoe on for some resistance.

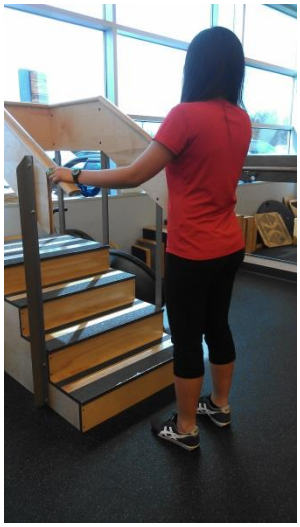
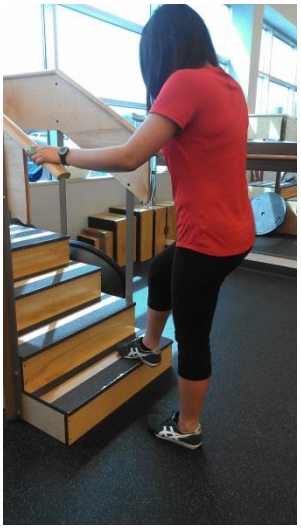
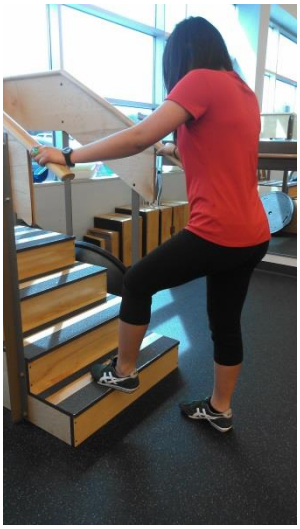
C. Supine march:

Patient lies on back in hook-lying position. The patient activates core musculature to keep spine in neutral. The patient slowly lifts one leg at a time 2-3 inches off table, and then slow returns to starting position keeping back and pelvis still. Then alternate to the other leg as if marching in place.

D. Standing step taps:

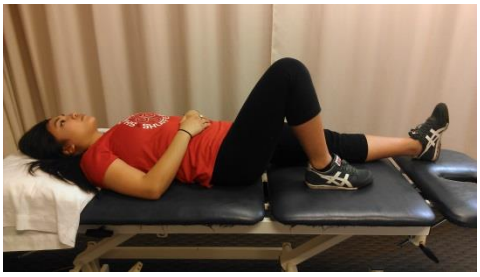
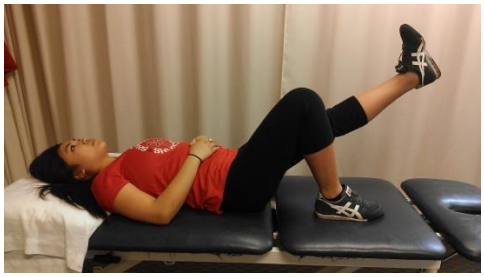
Patient stands facing step and engages core musculature. Then patient lifts involved LE to tap stair. Return LE to starting position. Begin with 2 inch stair and increase height gradually as strength improves. Encourage performance without use of UEs for support, unless needed to prevent LOB.

E. Standing march:


Patient stands with core musculature activated. The patient raises involved hip to 90 degree angle, allowing bend in the knee. Return to starting position. Then alternate to the other leg as if marching in place. Encourage performance without use of UEs for support, unless needed to prevent LOB.

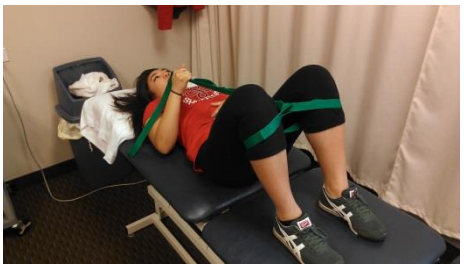
F. Straight leg raise:

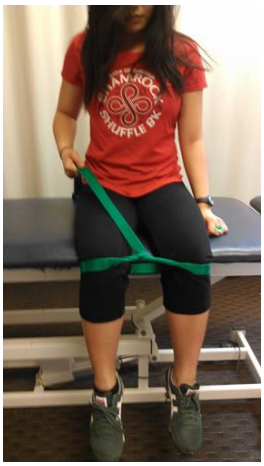



Patient lies on back with uninvolved knee bent in hook-lying position. The involved thigh is tightened, and the leg is raised 8-10 inches off table. Return to starting position, maintaining contraction at thigh. Do not perform if there is a lag in knee extension or pain in the anterior hip.

2. Hip abduction:

A. Supine and seated isometric:



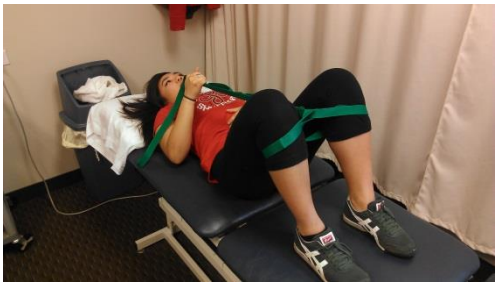
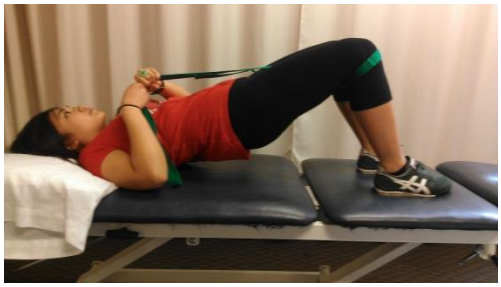


Patient lies on back in hook-lying position or sitting. Position belt around the knees, or may use manual resistance, if available. The patient presses knees outward into belt or therapist's hand. Hold for 5-10 seconds and then relax. Modification – may be performed with involved LE bent against wall with pillow, and pressing knee/lower thigh outward into pillow/wall.

B. Standing hip abduction:


Patient stands with surface in front for UE to prevent loss of balance. Then bring LE out to the side, away from body, keeping the trunk vertical while avoiding leaning. Perform on one side and then switch and perform on the other leg.

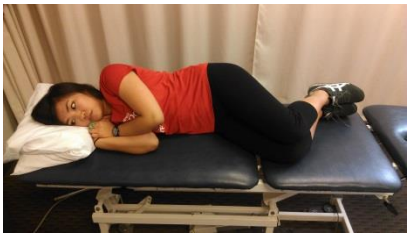
C. Isometric hip abduction with bridging:

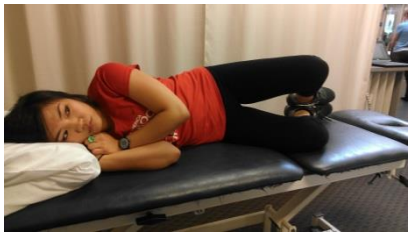



Perform supine isometric as described above, with use of Theraband or Pilates ring as form of resistance. While maintaining this contraction, the patient raises hips up from table and the

return to starting position. Start with slow repetitions and progress to hold for 3-5 seconds. (Pt must perform 3B and 3C without compensation before this can be added.)

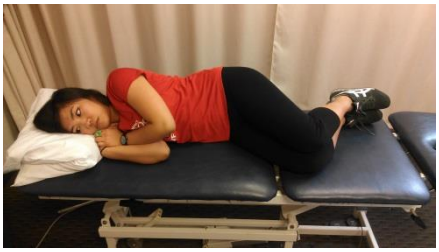
D. Side-lying clam shell:

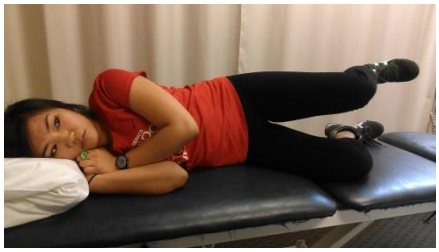




Patient lies on side with knees bent. The patient is instructed to contract core musculature and pull belly button towards spine. Then, keeping ankles together and spine still, the patient raises the top knee. Perform first without resistance and then add Theraband as able.

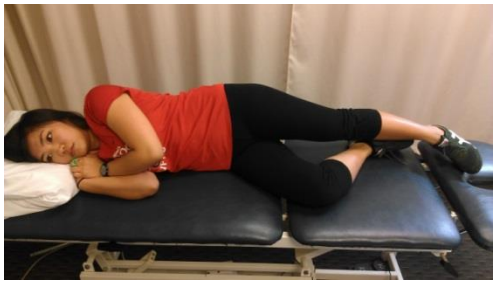
E. Side-lying bent knee hip abduction

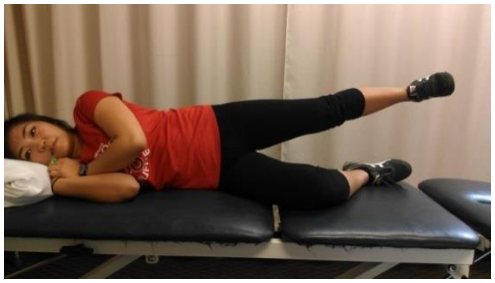




Patient lies on side with knees bent same start position as Side-Lying Clam Shell. Then keeping both knees bent at 90°, tighten the muscles of the core and the top leg. Raise the top leg, and be sure not to rotate at the hip. When lowering the leg, the knee and foot/ankle should make contact with the lower leg at the same time. Perform first without resistance and then add Theraband to increase difficulty.

F. Side lying hip abduction





Patient is instructed to lay on side with bottom knee bent for stabilization. Then tighten the muscles on front of the top thigh keeping it straight. Lift the top leg, being sure not to turn foot

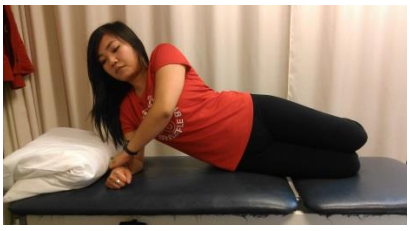
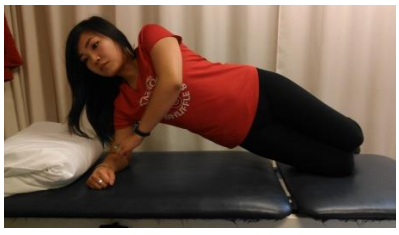
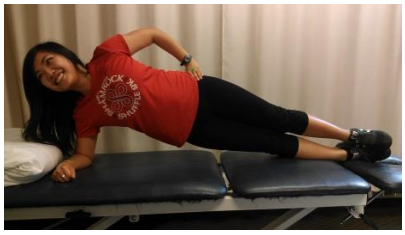
up towards ceiling. Make sure the leg moves in a straight vertical motion and the pelvis does not rotate. Perform first without resistance, then add Theraband or ankle weights to increase difficulty.

G. Crab Walk



Patient stands with knees slightly bent and then is instructed to step to the side while keeping toes pointing forward. The patient will step to the side with one foot first, then together with the other. This is to be done for roughly 30-45 feet and then without turning around return to the other direction. Perform first without resistance, then add Theraband to increase difficulty.

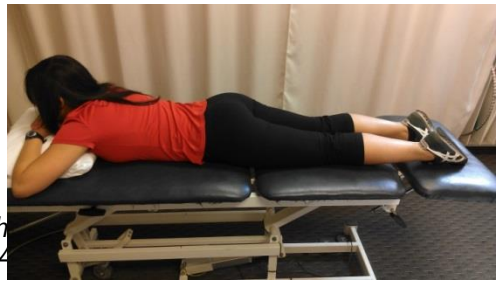
H. Side Plank

Patient begins lying on side with knees bent and arm under your body. Keep your hips in neutral, so that your feet are behind you. Contract core muscles and raise thigh off table with weight on your elbow and knee, so that your body is in a straight line. Hold this for 10 seconds initially and gradually increase to 60 seconds. To increase difficulty, straighten your legs and maintain balance on elbow and the feet.

3. Hip Extension

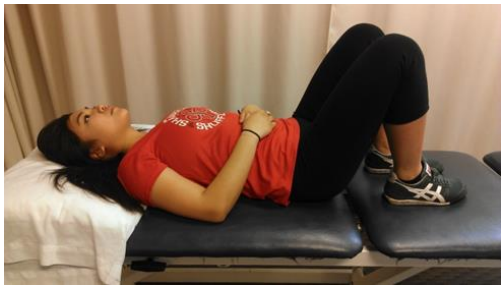
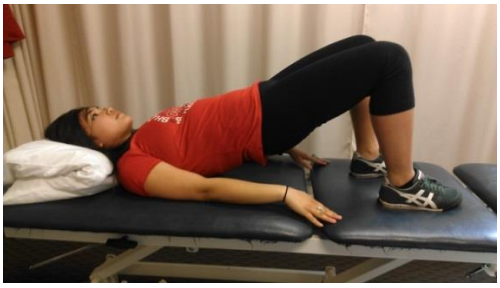
A. Supine/ Prone Glut Set:



The patient either lies on their back or stomach and with knees extended. The patient then tightens and maintains

contraction of gluteal muscles for a 5 second hold; relaxing between each rep.

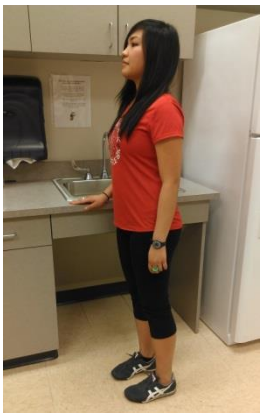
B. Bilateral Bridging:

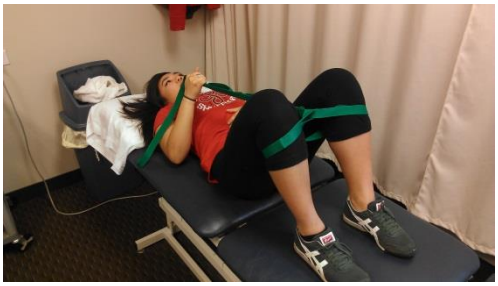
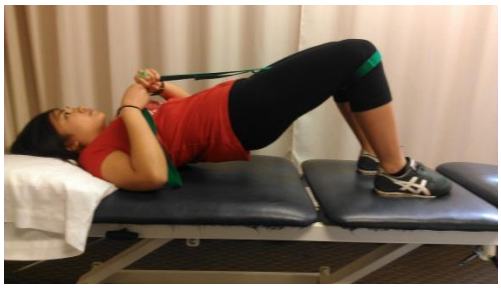
Patient is instructed to lie on back with knees bent, feet planted on floor. Maintain core stability and keep spine straight while contracting the glut muscles. Raise buttock from floor until hips are in line with shoulders and knees. Start with slow repetitions and progress to holds from 2-10 seconds.

C. Standing hip extension:

Patient stands on both feet, then contracting core and glut muscles, kick one leg behind. The patient should maintain an upright stance with no trunk lean, and keep pelvic height even. Perform first without resistance, and then add Theraband to increase difficulty.

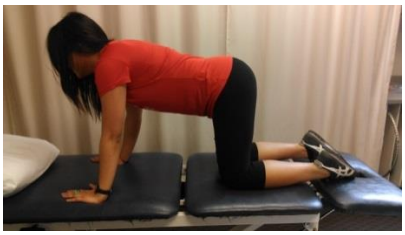



D. Isometric hip abduction with bridging:

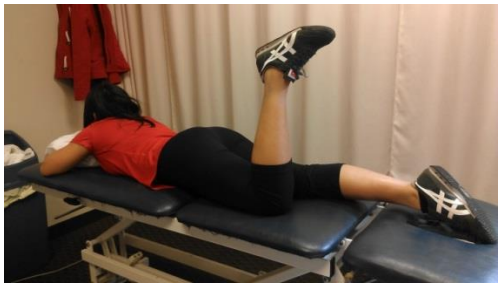
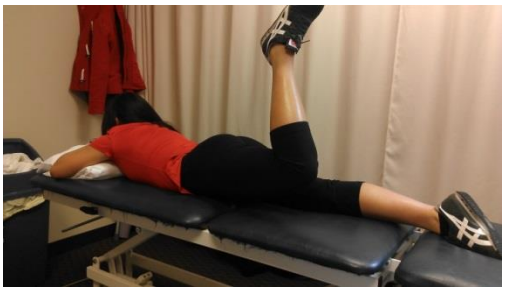
Perform supine isometric as described above, with use of Theraband or Pilates ring as form of resistance. While maintaining this contraction, the patient raises hips up from table and the return to starting position. Start with slow repetitions and progress to hold for 3-5 seconds.

E. Quadruped hip extension:



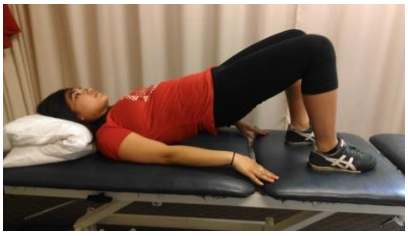
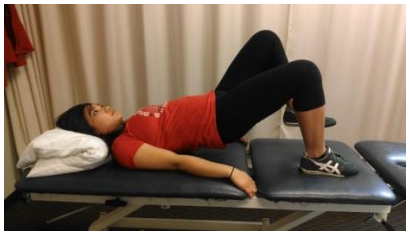
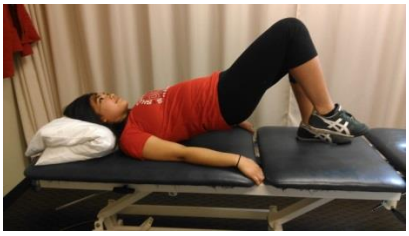
Patient is instructed to begin on all fours with knees under hips and hands under shoulders. Then keeping one knee bent, contract core and glut muscles to extend one leg behind, maintaining even hip height and spinal neutral. To increase difficulty, extend leg straight, eventually adding resistance by adding ankle weights.

F. Prone bent knee hip extension:

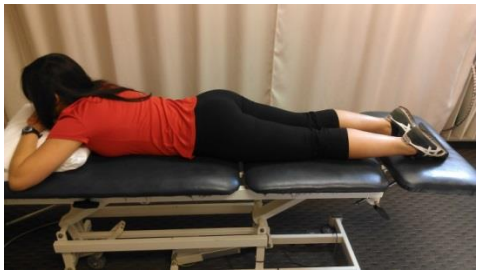
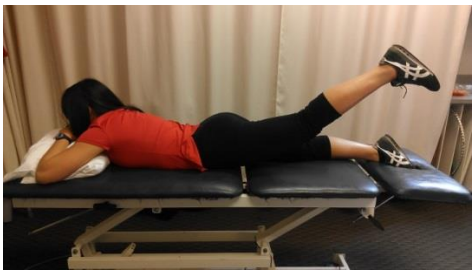
Patient is instructed to lie on stomach with abdomen and head supported. Then with one knee bent, tighten abdomen, and raise leg off floor bringing the foot towards ceiling. Avoid arching low back. Perform first without resistance, and then add Theraband or ankle weights to increase difficulty.

G. Bridge and march:

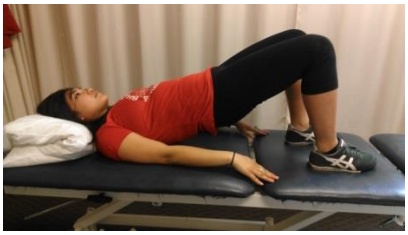
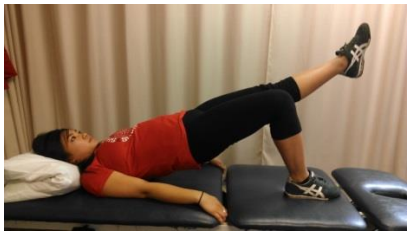
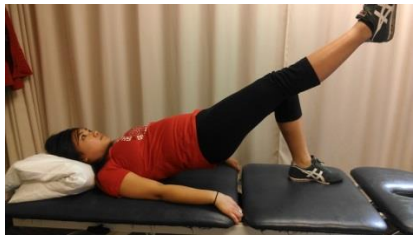
Patient is instructed to lie on back with knees bent, feet planted on floor. Contract glut and core muscles to raise both hips off floor as in bilateral bridging. Maintain muscle contraction to lift one foot 1-2 inches off the floor; do not allow hips to drop. Lower foot to floor keeping the hips lifted, and then raise other foot to same height and repeat. (Patient must perform 1E without compensation before this can be added.)

H. Prone Hip Extension:

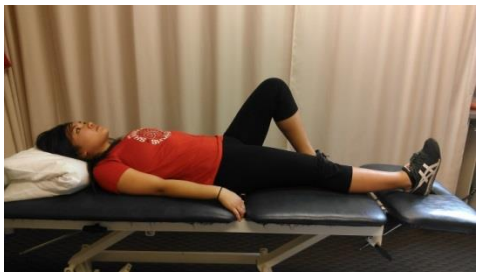
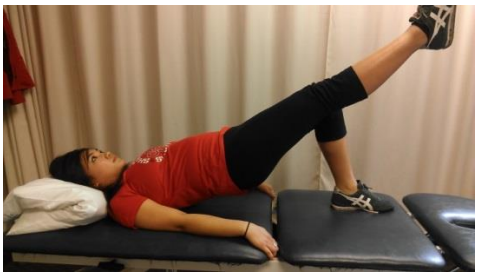
Patient is lying on stomach with both knees extended. Then, tighten muscle on front of thigh to maintain a straight leg. Avoid arching the lower back by contracting the core throughout the exercise. Contract glut muscles to then lift leg from the surface while keeping point of hip in contact with the table. Perform first with no resistance, and then add ankle weights to increase difficulty.

I. Bridge and Kick out:

Patient is instructed to lie on back with knees bent, feet planted on floor. Contract glut and core muscles to raise both hips off floor, as in bilateral bridging. Maintain muscle contraction to lift one foot off the floor, do not allow hips to drop. Straighten your raised leg out, and then bend it back and lower foot to floor keeping the hips lifted. Then raise other foot to same height and repeat. (Patient must perform 1F without compensation before this can be added.)

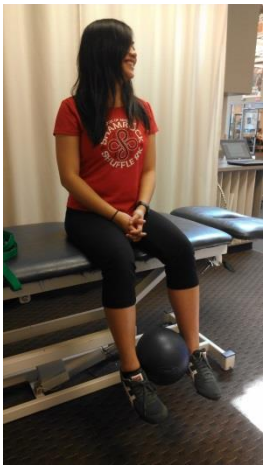
J. Unilateral Bridge:

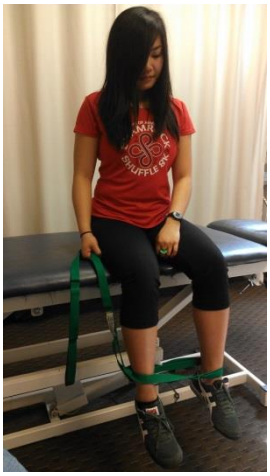
Patient is lying on back with both knees bent, feet planted on floor. Contract the abdominal muscles to raise one foot 1-2 inches off the floor. Then the patient tightens glut muscles and while not allowing pelvis to drop, raises the hips to about knee height. Lower hips to floor and repeat. Then perform with other foot staying in contact with the floor. Progress from repetitions to 2-8 second holds. (Patient may progress to completing with knee extended in air when able to complete 1F without compensation.)

4. **Hip Internal Rotation/ External Rotation**

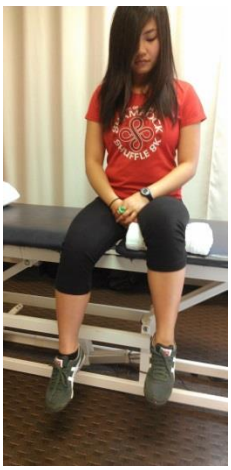
A. Isometric seated:

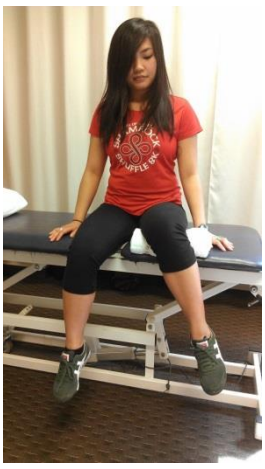


Patient is instructed to sit on edge of table with legs over edge. For internal rotation loop a belt around the ankles, keep knees bent at right angle, and pull ankles out against the belt while keeping knees still. For external rotation, stay in same position and place a pillow or ball between the ankles. Keep knees at right angle, and then squeeze ankles together against pillow while keeping knees still.



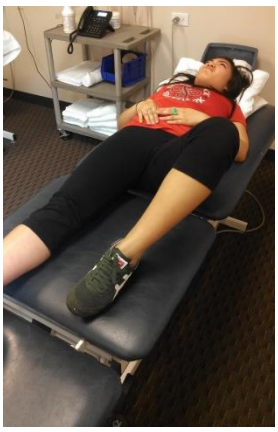
B. Seated AROM:





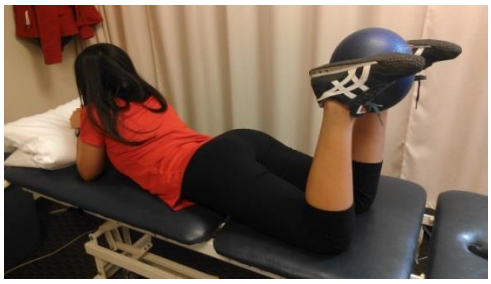
Patient sits on the side of the bed as with isometrics, only without the ball or belt at the ankles. While sitting with good posture to avoid pelvic tilt, slowly rotate the foot in toward the opposite leg and then move it out to the outside. Be sure that your knee does not move in and out as compensation. Perform first with no resistance, and then add ankle weights to increase difficulty.

C. Bent knee fall out/in:

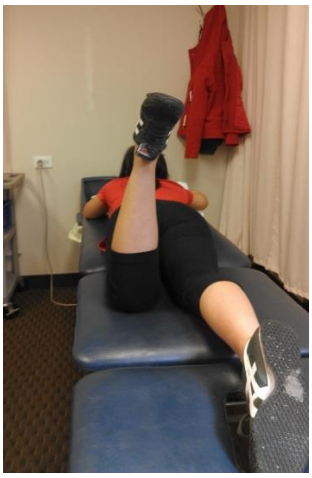

Patient is instructed to lie on back with leg bent and foot planted on floor. Tighten abdominal muscles and allow knee to fall out towards floor. Return to neutral position. Then tighten abdominal muscles and allow knee to fall in towards midline of body. Perform first with no resistance, and then add ankle weights around the knee to increase difficulty.

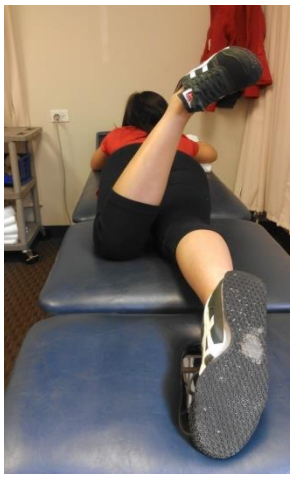
D. Prone Isometric:




Patient is instructed to lie on stomach with knees bent. For internal rotation loop a belt around the ankles, keep pelvis flat, knees bent at right angle, pull ankles out against the belt. For external rotation, stay in same position and place a pillow/ball between the ankles. Keep pelvis flat and knees at right angle, and then squeeze ankles together against pillow or ball.

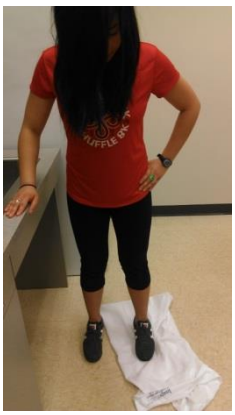
E. Prone AROM:





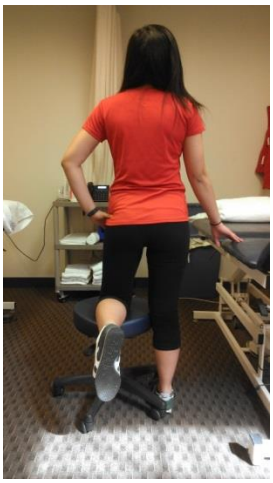
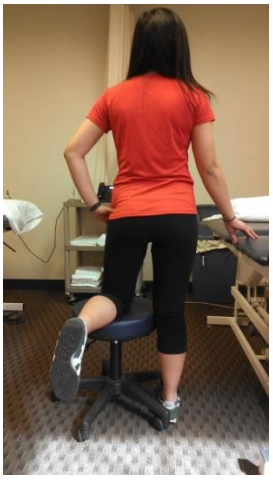
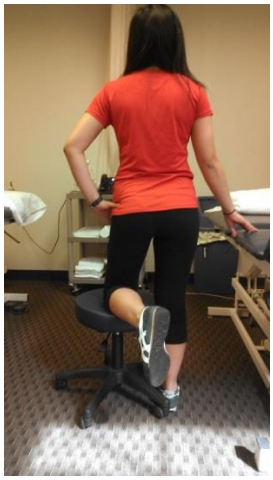
Patient lies on stomach with one leg straight, the other knee bent (foot up towards the ceiling). Slowly lower leg out to side keeping pelvis on the table, keep stomach tight. Return to neutral position and then allow leg to lower in towards other leg. Perform first with no resistance, and then add ankle weights to increase difficulty.

F. CKC rotation:



Patient stands with one foot on slick surface (i.e. tile floor or slide board). A towel may be useful in decreasing friction. Tighten the abdominals and keep the pelvis facing straight ahead. Rotate the leg so that the toe points out and then turn the leg to point the toe in.

G. Kneeling on stool:

Patient places knee of surgical leg on a stool that is appropriate height so that the pelvis/hips stay level. The other foot is planted on the ground for stability. Tighten core muscles and glut muscles so that hips remain at same height. Rotate hip so that ankle comes out to the side and then back in towards other leg. Perform first without resistance, and then add Theraband to increase difficulty.