



Dear Therapist,

Thank you for caring for our patient following their recent hip surgery. Our goal is support you in this process and to provide *guidelines* for progression of rehabilitation. This protocol is meant to provide the basic exercises and techniques you will need to guide your patient to their return to normal function. At their 6-8 week follow up and if appropriate, Dr. Ellman will determine whether your patient is ready to progress to an advanced functional training program. This will include return to sport protocol, a maintenance strength program, or to continue to work on “the basics” before progressing further.

- Utilize this protocol and exercise description as a guide for treatment. Please utilize your clinical decision making to adjust treatments if needed within protocol precautions
- Progression through each phase is based on clinical criteria/goal achievement versus time lines. Please allow patient progress and their hip to dictate the rehab, **not solely rehab timelines!**
- Please tailor this program for each individual based on their ability to progress and respond to treatment. Advancement per protocol involves an accurate assessment of joint function, strength, mobility, and progressive overload. Do not hesitate to reach out to our team with any questions!
- Primary goals at **6 weeks post labral repair (non microfracture) and 10 weeks post microfracture** are normalized gait and good gluteal recruitment.
 - We expect ROM restrictions at this time, especially with external rotation, internal rotation, and extension
 - Do not push through pain to achieve greater range, these specific motions will improve naturally with a return to functional activity and not with overly aggressive stretching!
- *We have provided suggested patient handouts for weight bearing progression, partner assisted PROM, and a basic pool program in the appendix section of this protocol.*
- *The appendix section of this protocol also includes pictures of therapeutic exercises and self-mobilizations suggested as progressions within the protocol*

If you have **any questions** regarding your patient or this rehabilitation protocol, please feel free to contact Dr. Ellman or our Physical Therapy team lead as listed below.

Best,

Michael B. Ellman, MD
Hip Arthroscopy & Sports Medicine
Panorama Orthopedics
(P) 303-223-1223

Lara Baum PT, DPT, OCS
Hip Team Lead- Panorama Orthopedics
ltbaum@panoramaortho.com
(P) 720-497-6616



Post-Operative Hip Arthroscopy Rehabilitation Protocol

Labral Repair with or without FAI Component

Phase 1- Protection Phase (Post-Op Weeks 1-4)

Initial Precautions	<ul style="list-style-type: none"> • No stretching of the anterior capsule. This has to heal appropriately! No hip flexor stretching, no prone press ups. Prone lying will be our primary anterior “stretch” in this phase. • Weight Bearing <ul style="list-style-type: none"> ○ Foot flat weight bearing (20 lb) x3 weeks ○ Microfracture/reconstruction patients remain FFWB x6-7 weeks • Range of motion (ROM) restrictions (<i>first 2 weeks</i>) <ul style="list-style-type: none"> ○ Flexion to 90° ○ Extension to 0° ○ No ER at this time! ○ Abduction to 20° ○ After 14 days, ROM may progress as tolerated • Hip brace x3 weeks for 0-90° x3 weeks (6 weeks for reconstruction) <ul style="list-style-type: none"> ○ After 3 weeks patient may discontinue brace (no weaning required) • CPM <ul style="list-style-type: none"> ○ To be used 4-6 hours daily for 3 weeks ○ Microfracture: use 6-8 weeks for 6-8 hours • Avoid hip flexor irritation in early phases of protocol due to interaction with capsule/surgical repair. See Phase II for initial hip flexor progression if patient has no history of hip flexor tendinitis! • Avoid feelings of impingement with flexion
Goals	<ul style="list-style-type: none"> • Educate patient regarding partner assisted ROM, post-op precautions • Reduce pain and swelling (PRICE 5x/day for 20 minute sessions) • Begin passive range of motion partner assisted PROM • Initiate muscle activation and appropriate motor control/proprioception • Begin weight bearing progression when appropriate
Manual Therapy/Range of Motion	<ul style="list-style-type: none"> • STM: light retrograde massage beginning distally • Scar massage x5 minutes (portal incisions begin post op day 2 through week 3) • PROM: 15-20 minutes/session (continue through week 5-6 post op) <ul style="list-style-type: none"> ○ Flexion 0-90° x2 weeks, then progress as tolerated ○ Circumduction at 10° flexion ○ Abduction 0-20° x2 weeks, then progress to 45° ○ IR to 20°, can be bolstered or at 10-20° flexion ○ ER (therapist only) after 2 weeks in 20° arc completed at 90° flexion <ul style="list-style-type: none"> ▪ Beginning at week 4, ER in a 20 arc at 45° flexion. Only with therapist, and only patients with a Beighton scale score of <6! • Prone femoral nerve glides in neutral hip extension only • Thoracolumbar CPAs, UPAs in prone as determined by therapist • <i>Please emphasize partner assisted passive range of motion as an essential part of post-operative rehab for the first 5-6 weeks after surgery; see patient handouts section in appendix or patient videos on the Panorama website.</i>

<p>Strength and Motor Control</p>	<ul style="list-style-type: none"> • See appendix for pictures or email our hip team with questions at PTHipTeam@panoramaortho.com • Weeks 0-2 <ul style="list-style-type: none"> ○ Stationary biking for ROM, no resistance. Beginning at visit 2, 5-15 minutes per session ○ Gluteal, quadriceps, TrA isometrics ○ Prone 10% max voluntary isometric contraction (MVIC) manual isometrics, increasing MVIC with appropriate activation <ul style="list-style-type: none"> ▪ IR/ER isometric in 10° abduction (rhythmic stabilization progression) ▪ Abduction ▪ Hamstring • Weeks 2-4 <ul style="list-style-type: none"> ○ Gluteal progression <ul style="list-style-type: none"> ▪ Hip abduction isometrics in hooklying, prone, or sidelying ▪ Double leg bridges in increasing range of motion <ul style="list-style-type: none"> • Increase to abduction/adduction biased bridges in weeks 3-4 ▪ Prone gluteal progression <ul style="list-style-type: none"> • Gluteal isometric with pillow under hips • Prone isometric with reciprocal knee extension ▪ Quadruped exercise progression <ul style="list-style-type: none"> • Quadruped rocking, cat/camels • Quadruped rhythmic stabilization • Low quadruped donkey kicks on operative side • Alternating donkey kicks • Blood flow restriction training <ul style="list-style-type: none"> ○ BFR may begin on non-operative limb on first visit post-op with trained practitioner. ○ May begin on operative limb per BFR parameters when incisions are fully healed ○ Please contact us with any questions about suggested exercises, or for specific literature regarding the benefits of BFR!
<p>Criteria for progression</p>	<ul style="list-style-type: none"> • Range of motion <ul style="list-style-type: none"> ○ Flexion 120° ○ Extension to neutral <ul style="list-style-type: none"> ▪ Our goal is to avoid hip flexor contractures, if this occurs please remain in phase 1 ○ 50% FABER motion compared to non-operative side ○ 75% FADIR motion compared to non-operative side • Mild deviations in gait may occur with mild discomfort only <ul style="list-style-type: none"> ○ The most common compensation is due to decreased hip extension and a subsequent increase in pelvic rotation/lumbar extension

Phase 2- Initial Strengthening and Advanced Movement Control (Post-Op Weeks 4-10)

Precautions	<ul style="list-style-type: none"> ● Continue to avoid soft tissue irritation and flare ups that could delay progression ● Strength and movement control should increase simultaneously with increases in activity to prevent compensation due to fatigue ● Appropriate self-mobility should also increase with activity level (see Beighton scale) ● Do not push through pain! ● Monitor for signs/symptoms consistent with pelvic floor dysfunction <ul style="list-style-type: none"> ○ Increased urinary frequency (>once/2 hours daily), stress or urge incontinence, buttock/coccygeal/ischial tuberosity pain that does not improve with standard orthopedic physical therapy approach
Goals	<ul style="list-style-type: none"> ● Full, pain free active and passive range of motion ● Normalized gait pattern- the most common compensation is due to decreased hip extension and a subsequent increase in pelvic rotation/lumbar extension
Manual Therapy/Range of Motion	<p><i>One of the main goals of this phase is to achieve appropriate lumbopelvic ROM and joint mobility. It is essential that your patients continue to receive manual therapy!</i></p> <ul style="list-style-type: none"> ● Patients may wean from partner assisted range of motion at weeks 5-6 ● Neurodynamics <ul style="list-style-type: none"> ○ Femoral nerve glides as deemed necessary by treating therapist ● Joint Mobilizations <ul style="list-style-type: none"> ○ Week 3: <ul style="list-style-type: none"> ▪ With hypomobile patients begin grade II-III caudal ▪ Thoracolumbar prone mobilizations at needed ○ Week 4: <ul style="list-style-type: none"> ▪ Begin grade II-III posterior/inferior glides ▪ Include belted mobilizations in supine or side-lying as needed ▪ Side-lying rotational lumbar mobilizations with operative limb up ○ Week 6+: <ul style="list-style-type: none"> ▪ Lumbosacral and thoracolumbar mobilizations as deemed appropriate by the therapist ▪ If necessary, in significantly hypomobile begin posterior to anterior hip mobilizations to improve hip extension ▪ DO NOT begin mobilizations that stress the anterior hip capsule prior to this point ○ Weeks 6-8: <ul style="list-style-type: none"> ▪ Inclusion of mobilizations to increase FABER mobility ▪ This may include medial glides in FABER position in cases of adductor irritation ● Soft tissue mobilization <ul style="list-style-type: none"> ○ As indicated to promote a continued, gradual return to PROM ○ Scar tissue mobilization as indicated ● Dry Needling <ul style="list-style-type: none"> ○ Dry needling may begin at Week 6, as long as your patient is appropriate for it and your state practice act allows this treatment strategy! ○ Dry needling should not be the only manual therapy that your patient receives. It is a good complement to care, please address joint mobility as well!

<p>Strength, Flexibility, and Movement Control Training</p>	<p><i>Please note that this is not an exhaustive list of exercises! Please email our hip team with questions at PTHipTeam@panoramaortho.com</i></p> <ul style="list-style-type: none"> • Weeks 4-6 <ul style="list-style-type: none"> ○ Strength <ul style="list-style-type: none"> ▪ Quadriceps progression: wall ball squats above 60° flexion, step ups forward and lateral ▪ Gluteal progression: <ul style="list-style-type: none"> • Continued bridge variations • Prone edge of table hip extension (appendix) • Hip thrusts edge of bench in small range • Birdog rows (appendix) • Clams, reverse clams • Double leg hip hinge, progressing to kickstand RDL ○ Flexibility <ul style="list-style-type: none"> ▪ Kneeling hip flexor stretch to neutral weeks 3-4, focus on posterior pelvic tilt ▪ Hamstring stretching week 4 ▪ Light standing hip flexor/quad stretching at week 4-5 ▪ Supported BKFO for FABER mobility in patients with a lower Beighton scale score or significant tightness ○ Movement Control <ul style="list-style-type: none"> ▪ Continued rhythmic stabilization in all positions ▪ <i>Week 5-6, begin light hip flexor activation if appropriate!</i> <ul style="list-style-type: none"> • <i>Not appropriate if patient has a history of hip flexor tendinitis pre-surgery, or if they are currently presenting with internal snapping hip/tendinitis</i> • Begin with supine, gravity eliminated hip flexor rollouts • Supine 1" marching • Deadbugs (week 6) • Weeks 6-8 <ul style="list-style-type: none"> ○ Strength <ul style="list-style-type: none"> ▪ Quadriceps progression <ul style="list-style-type: none"> • Leg press: double to single leg progression as tolerated • TRX or supported squatting • Split squats, progressing to reverse lunges when tolerated ▪ Gluteal progression <ul style="list-style-type: none"> • Backwards only monster walks • Continue bridge variations, clams, reverse clams/etc as indicated • SL supported RDL/diver <ul style="list-style-type: none"> ○ Option to perform a kickstand RDL ○ Progress to banded or weighted as tolerated ▪ Hamstring curl variations as indicated/tolerated ○ Flexibility <ul style="list-style-type: none"> ▪ Foam rolling of quadriceps, ITB, gluteals ▪ Supported butterfly slides, BKFO for improved FABER mobility ▪ Prone self IR/ER in a pain free arc ○ Movement Control <ul style="list-style-type: none"> ▪ Continue rhythmic stabilization throughout this time
--------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<ul style="list-style-type: none"> ▪ Week 6: <ul style="list-style-type: none"> • kneeling front planks <ul style="list-style-type: none"> ○ progressing to full as tolerated without anterior hip aggravation/compensation ▪ Week 7: kneeling side planks, progress as above ▪ Week 8: <ul style="list-style-type: none"> • Adductor walkouts if pain-free in patients without a history of osteitis pubis • FABER lift offs (appendix) • Continue dead bugs with increasing range of motion • Begin banded dead bugs as tolerated • Weeks 8-10 <ul style="list-style-type: none"> ○ Strength <ul style="list-style-type: none"> ▪ Step up progression to include lateral and crossover step ups ▪ Lunge progression to include lateral and curtsy lunges ▪ Single knee bend/pistol squats to increasing depth as tolerated ▪ Lateral band walks ▪ Standing fire hydrants ○ Flexibility <ul style="list-style-type: none"> ▪ Continued stretching, self-mobilization as indicated ▪ Adductor foam rolling ▪ Begin banded self-mobilizations as indicated (appendix) ○ Movement Control <ul style="list-style-type: none"> ▪ Continue plank progression ▪ Initiate chops/kicks progression with increasing balance demand ▪ Single leg divers, progressing to airplanes (appendix) ▪ Rotational RDLs ▪ Marching progression: low march and stick, increasing height per patient tolerance
Cardiovascular Training	<ul style="list-style-type: none"> • Weeks 4-6: Biking with light resistance for 20-30 minutes • Weeks 4+ experienced swimmers may return to swimming with LE buoy and no flip turns until week 8 • Week 6: begin elliptical trainer, starting at 10 minutes and progressing 5 min/week • Week 8: begin combination elliptical/stationary bike program
Criteria for progression	<ul style="list-style-type: none"> • Full, multiplanar range of motion without pain, including FABER and FADIR mobility • Able to ascend/descend stairs and walk 1 mile on level surface without pain or compensation • At least 1 minute of DL squats without compensation • Single leg knee bends/pistol squats to 70° hip flexion without compensation

Phase 3- Advanced Strengthening (Week 10+)

Patients who do not participate in higher-level activities may not need to advance to phase 3 if they are able to complete ADLS without compensation or pain. Activities that require advanced strengthening/completion of this phase include but are not limited to: running, cutting, rotational, or bounding sports. This will include skiing, snowboarding, golf, basketball, racquet sports, soccer, football, hockey, dance, and gymnastics. Please contact our team with any specific patient questions or return to sport guidelines.

Precautions	<ul style="list-style-type: none"> • Do not push through pain! • Monitor for signs/symptoms consistent with pelvic floor dysfunction <ul style="list-style-type: none"> ○ Increased urinary frequency (>once/2 hours daily), stress or urge incontinence, buttock/coccygeal/ischial tuberosity pain that does not improve with standard orthopedic physical therapy approach • Monitor for onset of hip flexor or adductor tendinitis and adjust treatment accordingly
Goals	<ul style="list-style-type: none"> • Restore multi-direction strength without compensation • Restore ability to absorb impact, run on operative limb as needed • Prepare to initiate plyometric strength • Pass run readiness and y-balance assessments
Manual Therapy/Range of Motion	Continue as indicated based on patient presentation with the goal of achieving normalized lumbopelvic joint mobility and range of motion.
Strength, Power, and Movement Control Training	<ul style="list-style-type: none"> • Strength <ul style="list-style-type: none"> ○ Continue with lunge and pistol squat progressions, adding progressing resistance and dynamic stability challenges ○ Add rear foot elevated/Bulgarian split squats ○ X-walks • Movement control <ul style="list-style-type: none"> ○ Continued rotational core demands with chops/kicks etc ○ When patient passes testing as listed they may initiate rotational power. This is specifically important in throwing/kicking athletes! • Power <ul style="list-style-type: none"> ○ Begin light, double leg shuttle jumping with minimal resistance in bounding athletes
Cardiovascular Training	Continue as indicated based on patient presentation and goals
Criteria for progression	<ul style="list-style-type: none"> • Pass return to run readiness assessment • Pass y-balance assessment within 85% of non-operative side • Assign return to running progression

Phase 4- Return to Sport Phase

Precautions	<ul style="list-style-type: none"> • Do not push through pain! • Monitor for signs/symptoms consistent with pelvic floor dysfunction <ul style="list-style-type: none"> ○ <i>Increased urinary frequency (>once/2 hours daily), stress or urge incontinence, buttock/coccygeal/ischial tuberosity pain that does not improve with standard orthopedic physical therapy approach</i> • Monitor for onset of hip flexor or adductor tendinitis and adjust treatment accordingly
Goals	<ul style="list-style-type: none"> • Return to running/jogging without pain • Pass the Functional Sports Test (see appendix for instructions) <ul style="list-style-type: none"> ○ To be completed upon completion of strength and agility training • Return to sport after successful completion of the Functional Sports Test
Manual Therapy/Range of Motion	Continue as indicated based on patient presentation with the goal of achieving normalized lumbopelvic joint mobility and range of motion.
Strength, Power, and Movement Control Training	<ul style="list-style-type: none"> • We have provided suggested outlines in of strength, agility, and plyometric training to allow patients to return to their chosen sports. <ul style="list-style-type: none"> ○ These are designed for 8-10 sessions over 4-6 weeks and based on athlete type (ie linear, rotational, or kicking athletes) ○ These are <i>only suggestions</i> and should be tailored to your specific athletes and per your assessment of those athletes. <ul style="list-style-type: none"> ▪ This progression must be pain free and please feel free to return to standard protocol as needed. The same rules apply to all other parts of this protocol! ○ With questions or concerns, please contact our hip team at PTHipTeam@panoramaortho.com and we are happy to provide further guidance as needed!
Cardiovascular Training	Continue as indicated based on patient presentation and goals
Criteria for progression	<ul style="list-style-type: none"> • Pass return to run readiness assessment • Pass y-balance assessment within 85% of non-operative side



Linear Athletes (running/cycling)

Sessions 1-4	<ul style="list-style-type: none"> • Address movement deficits, educate patient on long-term self-mobilizations • Dynamic warm-up, muscle activation • Single leg strength and eccentrics: please include hip flexor strength as needed • Development of mileage and include progression program if applicable
Sessions 4-8	<ul style="list-style-type: none"> • Dynamic drills and agility training; ie triple extension • Introduction to jumping/plyometric power • Progression of single leg strength to address any residual deficits • Continuation of mileage and incline progression • Initiate sprinting progression if applicable
Sessions 8-10+	<ul style="list-style-type: none"> • Continued focus on strength and plyometric power • Finalize long term strength based program to be completed 2x/weekly • Finalize long term mileage and incline programs if applicable

Rotational Athletes (golf, hockey, throwing athletes)

Sessions 1-4	<ul style="list-style-type: none"> • Address movement deficits, educate on long term self-mobilizations • Rotational core and hip strength focused on deceleration and eccentric control • Strength training focused on single leg positions • Initiate agility training, power training
Sessions 4-8	<ul style="list-style-type: none"> • Dynamic balance and drills: ie hip loading, weight shifting, dissociation drills • Progression of agility and power training • If applicable: <ul style="list-style-type: none"> ○ Initiate throwing and batting progression ○ Begin chipping/putting progression ○ Begin skating without hard cutting or stops
Sessions 8-10+	<ul style="list-style-type: none"> • Sport specific plyometric and agility training: including rotational power • Finalize long term strength program and return to sport progression

Kicking Athletes (soccer, dance, gymnastics)

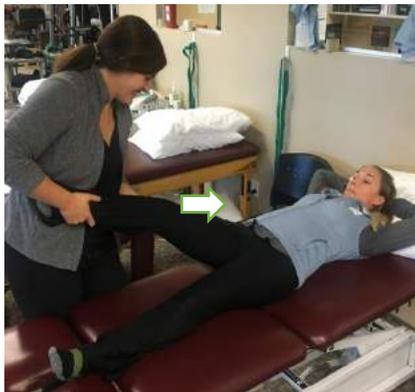
Sessions 1-4	<ul style="list-style-type: none"> • Educate patient on long-term strategies including dynamic warmup, muscle activation • Rotational core training: deceleration and eccentric control • Single leg focused strength training • Introduction of agility training
Sessions 4-8	<ul style="list-style-type: none"> • Drills and dynamic balance: hip loading, weight shifting, dissociation drills • Kicking training: deceleration and eccentric control of hip flexors, anterior core, and adductors • Progression of agility training or sport specific cutting drills (dribbling, passing) • Introduction of sport specific power training including jumping, sprinting, and rotational power
Sessions 8-10+	<ul style="list-style-type: none"> • Kicking progression : concentric and power based kicking • High level, sport specific agility and plyometric training • Finalize return to sport progression: consider that gymnastics and dance will require a higher level of impact and jump training than soccer. All three of these subcategories require repetitive kicking that must be pain free!

Partner Assisted Passive Range of Motion (PROM)

- PROM is an essential part of your post-operative protocol, and we suggest including this in your rehab for the first 5-6 weeks after surgery
 - It is important that your hip continues to move as normally as possible, in order to meet protocol guidelines for advancement
- This includes 4 directions of range of motion as listed below
- **Please complete 2 sessions daily, 5 minutes in each direction**
- In each range of motion, avoid fallout at the knee. Keep the kneecap pointing straight up towards the ceiling!

Flexion

This is best completed on the edge of a table or high surface. Stand beside the patient and make sure they are well supported. While supporting your patient's leg, move until the knee is directly in front of the hip, or a right angle/90°. If the patient notes the onset of anterior pain, do not move quite so high



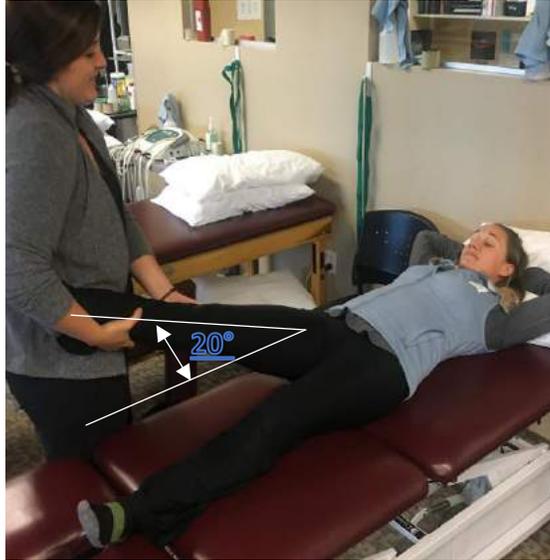
Circumduction

Stand to the side of the patient at the edge of the table, and lift their leg/ankle 10° up off of the table. Make small circles (about the size of large coffee mug) in clockwise and counterclockwise directions.



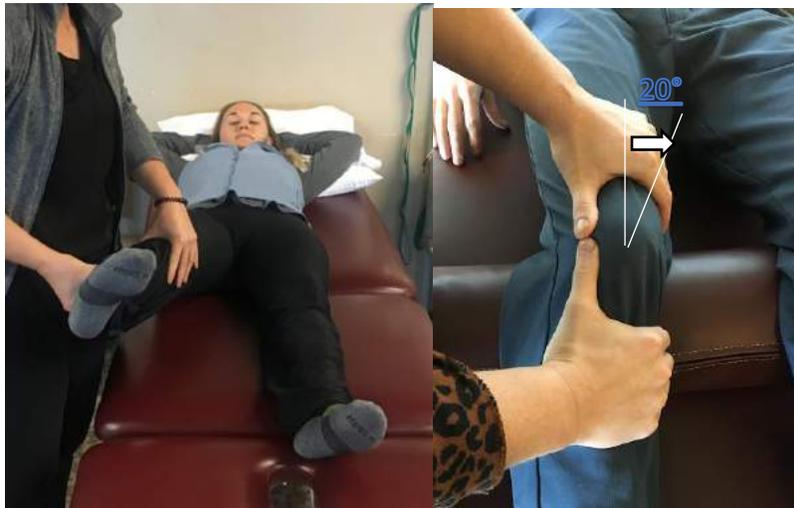
Abduction

Stand to the side of the patient and lift the patient's leg 10° off of the table. With the patient's ankle secure to your side, shift your weight sideways 20°, and then return to the starting position.



Internal Rotation

There are two options for this range of motion. 1) Stand at the edge of the table and move the toes from straight up (12 o'clock) to 20 degrees of internal rotation (almost 1 o'clock). 2) Place a bolster or foam roller behind the patient's knees, and place hands on the side of their kneecap. Move the kneecap in the same range of motion and return to neutral.





PANORAMA
Orthopedics & Spine Center
Hip Labral Repair
Weight Bearing Progression

Initial Weight Bearing Restrictions

- You will be partial weight bearing for 3 weeks using bilateral crutches
- You will use the brace for 3 weeks
- During that time you will be Foot Flat Weight Bearing, meaning that you will place approximately 20 lbs of your weight through your foot during walking!
 - This is very important to prevent hip flexor irritation in early healing phases

Weaning from crutches

- **This make take 1-2 weeks total!** This handout does not mean that you should wean from crutches without therapist guidance, it is meant to better explain the process!
- **If you had a microfracture or labral reconstruction, this process will be delayed until 6 weeks post op!**

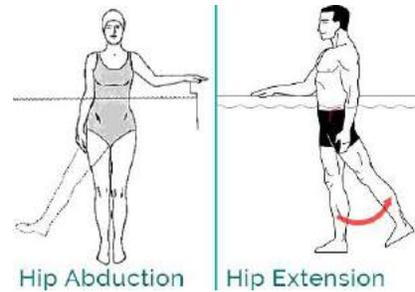
Progression for weaning from crutches

- Option 1: Beginning at 3 weeks post op with labral repair
 - Day 1-4
 - Single crutch at home only
 - Two crutches in public or for longer distances
 - Day 5-8
 - No crutches at home only
 - 1 crutch in public or for longer distances
 - Day 9-10
 - Completely wean from crutches
- Option 2: This progression is to be completed with MD or PT approval!
 - Day 1-4
 - WBAT with crutches, focused on appropriate weight bearing mechanics to be reviewed with your PT
 - Day 5-8
 - No crutches at home
 - WBAT with crutches in public
 - Day 9-10
 - Completely wean from crutches
- If you have any onset of hip pain or significant anterior tightness, return to level below current progression
 - Example: if you have pain on day 5 of your progression, return to single crutch at home, 2 in public and follow up with your physical therapist for instruction

The primary goal of our pool program is to facilitate normalized gait and introduce light strengthening while you are weaning from crutches. You should have no pain during this program, and it can begin as soon as your incisions are closed! Begin this program in chest height water.

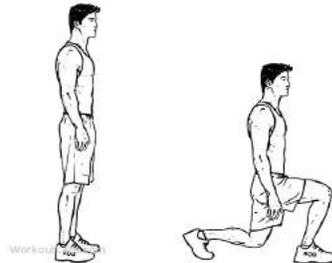
Week 1

1. Forward and backward walking: 5 minutes
2. Side steps: 5 minutes, begin during your second session provided you have no pain
3. Double leg squats; ¼ depth 3x10
4. Hip abduction and extension: 3x10 bilaterally (only moving from the hip, not the back!)
5. Forward and backward walking: 5 minutes



Week 2

1. Forward and backward walking: 5 minutes
2. Side steps: 5 minutes
3. Double leg squats; 1/2 depth 3x10
4. Forward lunges 2x10 bilaterally
5. Forward and backward walking: 5 minutes



Week 3

1. Forward and backward walking: 5 minutes
2. Side steps: 5 minutes
3. Double leg squats: normal depth 3x10
4. Forward lunges 2x10 bilaterally
5. Standing hip external and internal rotation (as cleared by your PT)
6. Forward and backward walking: 5 minutes

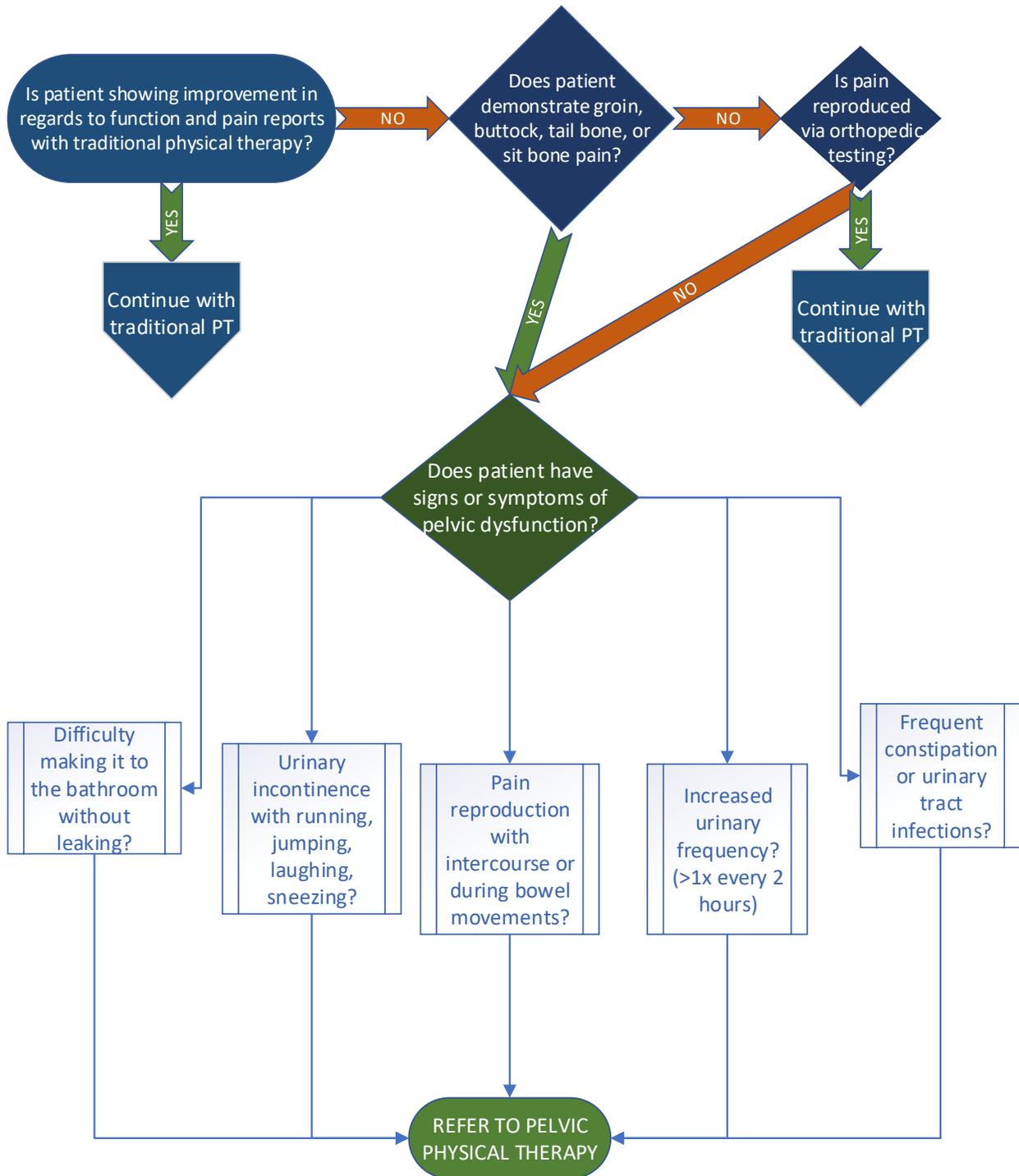
For additional questions and progressions please contact your physical therapist!

Beighton's Scale

Joint	Finding	Points
left little (fifth) finger	passive dorsiflexion beyond 90°	1
	passive dorsiflexion ≤ 90°	0
right little (fifth) finger	passive dorsiflexion beyond 90°	1
	passive dorsiflexion ≤ 90°	0
left thumb	passive dorsiflexion to the flexor aspect of the forearm	1
	cannot passively dorsiflex thumb to flexor aspect of the forearm	0
right thumb	passive dorsiflexion to the flexor aspect of the forearm	1
	cannot passively dorsiflex thumb to flexor aspect of the forearm	0
left elbow	hyperextends beyonds 10°	1
	extends ≤ 10	0
right elbow	hyperextends beyonds 10°	1
	extends ≤ 10	0
left knee	hyperextends beyonds 10°	1
	extends ≤ 10	0
right knee	hyperextends beyonds 10°	1
	extends ≤ 10	0
forward flexion of trunk with knees full extended	palms and hands can rest flat on the floor	1
	palms and hands cannot rest flat on the floor	0

- A Beighton score of 5/9 or greater is considered significant. ⁶
- **A patient with a Beighton Scale score that is considered significant will not be appropriate for aggressive joint mobilizations. They will do better with consistent strength and motor control training**

Trouble-shooting: When to refer to Pelvic Physical Therapy




PANORAMA
Orthopedics & Spine Center
Exercise Appendix

Please note that this is NOT a comprehensive list of all suggested exercises within our rehab protocol. We have included exercise progressions and ideas that may be unique to this protocol to make sure we are all on the same page! We assume that all practitioners are award of the standard exercises and form such as bridges, clams, etc. Again, if you have questions about cuing please reach out to us!

Rhythmic Stabilization Progression

Prone Rhythmic Stabilization (beginning manually vs CLX in week 2, both into IR and ER)



Quadruped Rhythmic Stab Progression, (Wk 2-3, Both into IR and ER, progressing to hip ext bias)



Tall Kneeling Rhythmic Stabilization (Wk 4, bias into IR/ER, no anterior/groin pain)



Glute progression exercises

Prone glut isometric, transition to glut iso + TKE for gait (Wk 2-4)



Edge of table hip extension for reciprocal inhibition (wk 4-6): begin with pillow under hips to bias hip flexion vs true extension, squeeze glut and lift knee from table to neutral extension. No back activation!



Bird-dog row (unilateral hip extension, alt donkey kicks/fire hydrants not pictured)



Standing hip hinge with support



Hip thrusters edge of table (standard bridge not pictured)



Reverse clams (Standard clam not pictured)



Prone FABER (Wk 8+)



Kickstand RDL (Wk 8+), progressing to full or rotational RDL as motor control allows



Standing Fire Hydrants (Wk 9-10)



X-walks (Week 9-10)



Quad Strength Progression

Not pictured: early step up and lunge progressions. We have only chosen slider progressions here for now. **Slider Reverse lunge Wk 10, Lateral/Curtsy lunges wks 11+**





Motor Control and Core Progression

Side Plank variations (Wk 7-8+, not pictured: front plank progressions)

Standard side plank



Side plank with a hip tap



Rotational Side plank (Wk 10+)



Hip Flexor rollouts (Week 5-6 in patients without evidence of internal snapping hip, tendinitis ONLY).
Progress to supine march, then standing marching for functional progression



Banded Dead Bugs (Week 8)



Hip Flexor Walkouts (Wk 9-10, NOT appropriate if patient has a history of tendinitis)



Adductor Walkouts (Wk 9)



Single leg RDL/divers, progressing to single leg airplanes (Wks 8-10)



Single leg airplanes: rotational control of the SL RDL position prior to loading, sports based power



Rotational RDL (Wks 11-12+)



Chop and Kick Progression (Wks 10+)



We have chosen not to include foam rolling, although this is an important part of the rehab process. We focus instead on other important self-mobilizations for your patients.

Please keep in mind that superbands self-mobilizations may not be appropriate for all patients, especially those with high scores on the Beighton Scale (see appendix). These are for your tighter patients!

FABER butterfly slides (Wk 6); leg supported on wall or foam roller, relax groin and slide up and down for stretch



Banded self-mob: lateral glide with child's pose (Wk 6)



Banded self-mob: caudal glides (Wk 6, 2 variations based on patient comfort)



Hip tap self-mob (posterior glide biased self-mob in NEUTRAL hip flexor stretch, Wk 8)



Hip tap self-mob 2 (anterior biased self-mob in NEUTRAL hip flexor stretch, add glut iso to deepen stretch, Wk 9-10 in appropriate patients only)



Squatting with lateral or medial bias (Wk 10-12+ in appropriate patients)



Pigeon self-mob with lateral bias (Wk 10-12 in appropriate patients)





PANORAMA
Orthopedics & Spine Center
Run Readiness Testing

-1 minute of each test (30 sec per side if unilateral), 30 sec rest between
-Repetitions at 160 bpm

- 1) Wall jump
-Fail: Not able to stay with metronome, flat feet (vs jumping off toes), dynamic knee valgus, asymmetry
- 2) Forearm Plank- Assess core isometric
-Fail: Unable to maintain neutral hip position, weight shifting
- 3) Step-ups, 6"- Assess concentric propulsion
-Fail: vaulting, dynamic knee valgus > 5 deg
- 4) Single Leg Squat- Assesses eccentric loading
-Fail: Dynamic knee valgus > 5 deg, contralateral pelvic drop > 5 deg, loss of balance
- 5) Wall-sit w/ Swiss Ball- Assess quad isometric
-Fail: forward leaning, non-parallel legs, weight shifting

Test	Pass/Fail
Wall Jump	
Forearm Plank	
Step-ups	
Single Leg Squat	
Wall-sit Against Swiss Ball	

Functional Hip Sports Test

Functional hip sport test		
Exercise	Goal	Points
Single knee bends	3 min	1 point for each 30 s completed
Lateral agility	100s	1 point earned for each 20 s completed
Diagonal agility	100s	1 point earned for each 20 s completed
Forward lunge on box	2 min	1 point earned for each 30 s completed

Wahoff, M, Ryan M. Rehabilitation After Hip Femoroacetabular Impingement Arthroscopy. J Orthop Sports Physical Therapy. 2006 36;503-515.

- **Single Knee Bend**
 - Performed for 3 minutes at a pace of 1 second down and 1 second up without pelvic obliquity or knee valgus
 - One point for every 30 seconds successfully performed
 - Total of 6 points
- **Lateral side-to-side**
 - Performed with resistance cord attached to waist on involved side
 - Push off involved side against the resistance of the cord and return onto involved leg with good absorption
 - 30° of knee flexion progressing to 70° in a controlled manner
 - One point for every 20 seconds without compensation for 100 total seconds
 - Total of 5 points if performed correctly without pain
- **Diagonal agility**
 - Similar to Lateral test but performed at 45° angle forward and backward from frontal plane
 - One point for every 20 seconds without compensation for 100 total seconds
 - Total of 5 points if performed correctly without pain
- **Forward box lunge (onto a box set at height of the patient's knee)**
 - It is performed for 2 minutes with cord resistance
 - 1 point for every 30 seconds performed without pain or compensation
 - Potential of 4 points

Scoring:

- >17 is passing
- High-level athletes are expected to score 20/20

Single Knee Bend

Purpose: To test single leg endurance strength and evaluate patellar tracking.

Supplies: Sport Cord (Topper Sports Medicine, black cord)
Goniometer
Stopwatch

Description: The Athlete will perform single knee bends with cord resistance to 60° at a cadence of 1 second up and 1 second down for a goal of 3 minutes. The movement is between 30°-60° of flexion with the knee never fully straightening past 30° throughout the 3 minutes. To cue the athlete the depth of 60° the buttocks can lightly touch the seat of a chair or object. Two fingers are allowed for balance on a chair back.

Setup:

1. With a goniometer, measure a 60° knee bend and place a chair in a position to allow the athlete's buttocks to lightly touch at that depth.
2. The athlete places the heel of the foot on the cord at a position so the D-ring of the handle is aligned with the knee joint line to remove slack from the cord.
3. Tension is set by pulling the cord handle to the waist line and holding. Having the athlete hook their thumb around their pant line is helpful in maintaining tension on the cord.
4. Two fingers of the opposite hand are allowed to lightly touch another chair back for balance

Technique: The athlete must perform each repetition of a single knee bend without the following:

- Trendelenburg sign (pelvis must remain level)
- the knee locking in full extension
- the knee "collapsing" into medial rotation / adduction
- the patella extending past the toe

Cuing should be provided when one of the following compensations are noted. **If unable to correct STOP TEST.**

Scoring: One point is earned for each 30-second increment completed with proper form for a total of 6 possible points.

Testing is stopped if and when:

- Form: once the subject is unable to complete single knee bends without compensation even with cuing.
- Pain: the patient has pain > 3/10 OR reproduces their pain
- Endurance: the athlete fatigues

Lateral Agility

Description: The athlete will hop laterally with cord resistance from their surgical leg, land momentarily on their non-surgical leg, only to return onto their surgical leg with the cord pulling them back to the starting position for a total test time of 100 seconds. Each repetition of 1 second includes exploding laterally off the surgical side, landing momentarily on the opposite leg, and then returning to the starting position with emphasis on absorbing by bending at the hip and knee with 30 degrees of knee excursion. Excursion is defined as the amount of absorption from knee flexion at landing to max knee flexion.

Setup:

1. Place the belt through the sport cord handles and then attach around the waist.
2. Attach the other end of the sport cord to the door jam or secure post.
3. Stand sideways with the involved leg toward the cord attachment.
4. Step away laterally until tension is reached where the athlete slightly compensates with leaning and place a line with tape on the lateral aspect of the involved foot.
5. Measure the distance from the greater trochanter to the floor.
6. Use this measured distance to place a second tape line parallel to the first.

Technique: The athlete must perform each lateral hop by landing on or inside the first tape line with the involved foot and on or outside the second tape line with the uninvolved foot. Only one foot should be on the ground at the same time and the athlete must absorb onto the involved leg without the following:

- Trendelenburg sign (pelvis must remain level)
- the knee "collapsing" into medial rotation / adduction
- the patella extending past the toe
- losing control or stability

Cuing should be provided when one of the following compensations are noted. **If unable to correct STOP TEST.**

Scoring: One point is earned for each 20 second increment completed with proper form for a total of 5 possible points.

Testing is stopped if and when:

- Form: once the subject is unable to complete single knee bends without compensation even with cuing.
- Pain: the patient has pain > 3/10 OR reproduces their pain
- Endurance: the athlete fatigues

Diagonal Lateral Agility

Description: The athlete will hop diagonally forward at a 45° angle with cord resistance from their surgical leg, land momentarily on their non-surgical leg, only to return onto their surgical leg with the cord pulling them back to the starting position. The following repetition the athlete will hop diagonally backward at a 45° angle. The goal is 100 seconds total. Each repetition of 1 second includes exploding diagonally forward or backward at 45° angles off the surgical side, landing momentarily on the opposite leg, and then returning to the starting position with emphasis on absorbing by bending at the hip and knee with 30 degrees of knee excursion. Excursion is defined as the amount of absorption from knee flexion at landing to max knee flexion.

Setup:

1. Place the belt through the sport cord handles and then attach around the waist.
2. Attach the other end of the sport cord to the door jam or secure post.
3. Stand sideways with the involved leg toward the cord attachment.
4. Step away laterally until tension is reached where the athlete slightly compensates with leaning and place a line with tape on the lateral aspect of the involved foot.
5. Measure the distance from the greater trochanter to the floor.
6. Use this measured distance to place a second tape line at a 45° angle forward and a third tape line at a 45° backward to form a “V” if connecting the lines.

Technique: The athlete must perform each diagonal lateral hop by landing on or inside the first tape line with the involved foot and on or outside the second or third tape line with the uninvolved foot (Each foot should land parallel with each tape line). Only one foot should be on the ground at the same time and the athlete must absorb onto the involved leg without the following:

- Trendelenburg sign (pelvis must remain level)
- the knee "collapsing" into medial rotation / adduction
- the patella extending past the toe
- losing control or stability

Cuing should be provided when one of the following compensations are noted. **If unable to correct STOP TEST.**

Scoring: One point is earned for each 20-second increment completed with proper form for a total of 5 possible points.

Testing is stopped if and when:

- Form: once the subject is unable to complete single knee bends without compensation even with cuing.
- Pain: the patient has pain > 3/10 OR reproduces their pain
- Endurance: the athlete fatigues



Forward Box Lunges

Purpose: To test the lower extremity strength and endurance into extension.

Description: The athlete will perform alternating forward lunges onto a box with cord resistance at a cadence of 2 seconds per lunge for a goal of 2 minutes. The movement is a forward lunge with maximum hip extension without compensation at the pelvis or spine throughout the 2 minutes.

Setup:

1. Place the belt through the sport cord handles and then attach around the waist.
2. Attach the other end of the sport cord to the door jam or secure post.
3. Stand facing away from the cord attachment.
4. Step forward until tension is reached where the athlete slightly compensates by leaning and tape a line in front of the feet.
5. Measure the distance from the greater trochanter to the floor.
6. Place a stable box or chair the height of the athlete's knees in front of them at a distance equal to the measure of the greater trochanter to the floor.

Technique: The athlete must perform *alternating* forward lunges onto the box keeping their planted leg behind the line and extending the hip without the following:

- Trendelenburg sign (pelvis must remain level)
- Excessive lumbar hyperextension
- Pelvic rotation

Correct performance of this activity is through proper extension of the hip.

Scoring: One point is earned for each 30-second increment completed with proper form for a total of 4 possible points.

Testing is stopped if and when:

- Form: once the subject is unable to complete single knee bends without compensation even with cuing.
- Pain: the patient has pain > 3/10 OR reproduces their pain
- Endurance: the athlete fatigues