HIP ARTHROSCOPY CLINICAL PRACTICE GUIDELINE

Background

Femoroacetabular impingement syndrome (FAIS) is a common cause of intra-articular hip pain and disability. There are three types morphology associated with FAIS: pincer morphology (excessive prominence of the anterolateral rim of the acetabulum), cam morphology (asphericity of the femoral head), or a combination of pincer and cam morphology (Byrd, 2010). The abnormal abutment of the proximal femur against the rim of the acetabulum produced by the FAIS can cause limitations in range of motion and produces shear forces that lead to hip dysfunction, chondral abrasion, labral injuries, and eventually, full-thickness cartilage loss (Edelstein, 2012). Hip arthroscopy is a minimally invasive procedure used to treat FAIS and chondrolabral pathology. To address FAIS, an osteoplasty is performed to reshape the hip joint on the femoral and/or acetabular side (removing either the non-spherical portion of the femoral head and/or resection of the acetabular over-coverage). A labral repair, augmentation, or reconstruction is performed to address labral injuries in order to optimize joint mechanics and distribution of forces around the joint. At the end of the procedure, a routine capsular repair is performed with some patients also having a capsular plication, if warranted. Patients having a capsular plication will require more range of motion protection during the early post-operative phase.

Disclaimer

Progression is time and criterion-based, dependent on soft tissue healing, patient factors and preferences, and clinician evaluation. If you are working with an Ohio State Sports Medicine patient and questions arise, please contact the author by calling our office at (614) 293-2385.

Summary of Recommendations

Precautions	• WB restrictions: foot flat partial weight bearing (20%) with crutches (2-3 weeks) • Wean off crutches beginning of week 3 (2→0 crutches preferred) • Bracing restrictions: if your physician utilizes a brace, brace should be worn full time for first 2 weeks. Pt will be allowed to take off brace for sleep after two weeks and wean out of brace after fully weaned off crutches (typically around 6 weeks). • Return to sexual activity after 2 weeks for men, 4 weeks for women pending symptoms. Refer to pelvic health if necessary. See Appendix H for details. • Avoid any "pinch" feeling in the hip with ROM and exercises • Avoid hip flexor/adductor aggravation as strengthening and activity progresses
ROM/Manual Therapy	• Early motion as required to prevent adhesions • Circumduction OR no resistance upright biking for PROM • Limit flexion, external rotation (ER) and extension ROM for 4-6 weeks (see phase I)
Corrective Interventions	• Proper activation and recruitment of all hip and core musculature without compensation required prior to initiating strengthening • Neuromuscular re-education for balance and correction of faulty mechanics • Therapeutic exercise and neuromuscular re-education for lower extremity strength
Patient Reported Outcome (PRO)	• Lower Extremity Functional Scale (LEFS) at each visit • Consider collecting the Hip Outcome Score (HOS) at 1st visit, monthly, and discharge • ADL (17 items) | Sports (9 items)
Criteria to Initiate Plyometric Program	• Full, functional, pain-free ROM • > 80% quadriceps, hamstring, and hip (using hand-held dynamometer) strength compared to uninvolved leg • Squat > 150% body weight (barbell squat or leg press) • 10 forward and lateral step downs from 8" step with proper mechanics
Criteria to Initiate Running Program	• Full, functional, pain-free ROM • > 80% quadriceps, hamstring, and hip (using hand-held dynamometer) strength compared to uninvolved leg • Squat > 150% BW (barbell squat or leg press) • 10 forward and lateral step downs from 8" step with proper mechanics • Hop and hold with proper mechanics (uninvolved→involved) • Ability to tolerate 200-250 plyometric foot contacts without reactive pain/effusion • No gross visual asymmetry and rhythmic strike pattern with treadmill or over ground running
Criteria for Return to Sport/ Discharge	• Physician clearance at last check-up • Strength: > 90% compared to uninvolved hip (using hand-held dynamometer) • > 90% body weight with SL leg press • Functional Performance: to date, no return-to-sport criteria have been tested and published for patients undergoing arthroscopy for FAIS. Patients participating in sports activities should complete a number of sport specific tasks prior to being allowed to return to sport. Functional performance measures listed below (Phase IV) can be utilized for return to sport participation • PROs: Score ≥ 90% *Criteria for discharge from PT is less rigorous for those not returning to sport. Ensure the patient is able to perform all ADLs and recreational activities without pain, reactive effusion, and with appropriate functional mechanics.*

Phase I: Early Post-Operative Protective Phase (0-4 weeks)

Goals	• First PT visit within 3-5 days post-op • Protect healing tissue (the surgeon may have pt wear a hip abduction brace full time for the first 2 weeks to prevent ER and extension. Pt can take off for sleep after 2 weeks and then gradually wean out during the day after pt is off crutches, usually around 6 weeks.) • Pain and edema control (recommend compression garments/shorts to assist) • Improve pain-free ROM and normalize muscle activation • Return to driving once able to stand on surgical leg for >10 secs and easily move R leg side to side when seated
Precautions	• No sitting > 1-2 hours (avoid knees above hips) • No hip flexion > 90° (unless in quadruped), extension > 0°, and ER (prone) > 30° for 4-6 weeks • Partial weight bearing (20%) with foot flat for first 2 weeks • Return to sexual activity after 2 weeks for men, 4 weeks for women pending symptoms (Appendix H). **Screen for pelvic floor dysfunction and refer as necessary.** • Avoid twisting/pivoting on involved limb • No active flexion straight leg raises • **Avoid pain**

Crutch Progression (Week 2-4)	• WB restrictions: foot flat partial weight bearing (20%) with crutches for first **2 weeks**
	• Weaning process should be gradual with ultimate goal of being fully off crutches around 4-5 weeks (begin weaning process around week 3)
	  • If microfracture is performed: foot flat PWB (20%) for first **4 weeks**
	• 2 crutches → 0 crutches highly recommended to promote normalized gait mechanics
	• 2→ 1 → 0 crutches only when appropriate to slow pt progression or limit walking distance
	• Cue for shortened stride, slight forward trunk lean, or 'pushing with ankles' initially to decrease hip extension/stress on anterior hip
	• Criteria for Community Ambulation without Crutches:
	  • 30 secs of single leg stance without compensation (hip drop, trunk lean) or pain
	  • Normalized gait pattern without assistive device

ROM/ Stretching *If capsular plication is performed: be more conservative with ROM progression due to potential for laxity	• Circumduction or upright biking for 10-15 mins (x2 daily)
	  • Circumduction: **(review mechanics with family during 1st PT visit)**
	  • 30° and 70° of hip flexion → 6 min each (3 mins CW, 3 mins CCW)
	  • Can be replaced with 10-15 mins of upright biking with no resistance with elevated seat, avoiding anterior pinch (x2 daily)
	• PROM (pain-free): Hip flexion, abduction, gentle hip internal rotation (IR), ER in hooklying, hip extension **(limit to neutral)**
	• Stretches: prone quadriceps, supine iliopsoas (uninvolved knee to chest)
	• Prone lying → prone prop on elbows 5-10 mins (x2 daily) after week 2-3
	• GENTLE scar mobilizations can begin after incisions closed

Neuro-muscular Control	*This section is 1st priority → do not progress to strengthening until muscle activation is normalized* Isometrics: glute sets (prone, supine) bilateral and unilateral, transverse abdominis, hamstrings, quadriceps set, supine hip abduction/adduction, prone hip IR/ER, prone terminal knee extension
Suggested Interventions	Early Exercises: Supine butterflies and reverse butterflies, quadruped cat/camel, quadruped backward rocking (for hip flexion), bridges Advanced Exercises: clamshells, supine marching, standing TKE→focus on pelvic stability and weight shifting, prone hamstring curls (active quad stretch) with TA bracing
Criteria to Progress to Phase II	• Normalized gait pattern for household distances • Minimal to no reactive pain and swelling with ADLs and PT exercises

Phase II: D/C Crutches to Pain-free with ADLs (4-8 weeks)

Goals	• Restore full PROM and AROM
	• Progressively improve strength of the proximal hip musculature (gluteals, iliopsoas, hip rotators) with minimal to no increase in pain (<2/10 on numeric pain scale)
	• Normalize posture and movement patterns with functional activities
	  • **Reference Posture and Movement Training handout** (Appendix G)
	  • Specific emphasis on standing posture to decrease stress on anterior hip
	• Normalize gait at preferred walking speed for community distances
	  • Ensure that you are re-assessing gait throughout this phase to monitor for compensatory patterns
	• Tolerate ADLs without pain or limitation	

Precautions	• Avoid joint and/or soft tissue aggravation due to early/excessive progression of activity • Avoid aggressive stretching into hip extension/ER including modified Thomas test position (consider structures involved: i.e. labral repair, capsular plication, generalized laxity) • Avoid running or impact activities	

ROM/ Stretching	• Soft tissue and joint mobilization to achieve symmetrical PROM
	  • Avoid aggressive end range stretching
	• Upright bike, butterfly/reverse butterfly stretches, FABER slides, half kneeling hip flexor stretch, prone IR/ER PROM
	• May benefit from referral to massage therapist if patient is developing soft tissue dysfunction/irritation (commonly affects TFL, iliopsoas, adductors)
	  • Soft tissue irritation suggests need for regression of activities and/or exercises
	  • Continually assess patient's activity level outside of PT	

Suggested Interventions	• Ensure appropriate gluteal activation and timing • Integrate psoas progressive exercises (Appendix A) <u>Early Exercises</u> • Bridge progression, quadruped progression, squats, leg press, modified forward and side plank progression, resisted side stepping (start with band at knees), FABER slides, prone hip extension (emphasis on glute activation), quadruped hip abduction	<u>Late Exercises</u> • Prior to initiating full WB SL exercises patient should pass criteria for community ambulation and demonstrate mastery of DL tasks • Focus on endurance-based strengthening for hip muscles esp. glute med and deep external rotators • Integrate progressive hip adductor strengthening • Forward and lateral step ups, heel taps, SL Romanian dead lift, SLS with perturbations • Pool walking may be appropriate and can be initiated once incision is healed

Cardio-vascular Exercise	• May progress time on upright bike as tolerated
	  • Ensure patient can perform 30 mins with no resistance and without symptoms prior to adding resistance
	  • Decrease time to ≤15 min when adding resistance
	• May begin elliptical when patient demonstrates adequate hip extension, gluteal activation, and lumbopelvic stability (same criteria as above)	

Criteria to Progress to Phase III	• Symmetrical and pain-free hip ROM to meet the demands of patient's activities • Symmetrical double leg squat to 70° of knee flexion • 10 repetitions of 8" step downs with good neuromuscular control • Normalized gait pattern and pain-free for community distances of ambulation	

Phase III: Pain-free ADLs to Return to Impact Activities (8-12 Weeks)

Goals	• Correct abnormal/compensatory movement patterns with higher level strengthening activities. **Avoid any "pinch" feeling in the hip.** • Optimize neuromuscular control/balance/proprioception • Normalize strength of hip musculature, particularly: hip extensors, hip abductors, hip adductors, hip external rotators, trunk muscular strength and endurance • Tolerate single limb support, progressing from single-> multiplanar movements requiring increased load accepting capabilities • Increase volume/intensity of aerobic activities; restore non-impact cardiovascular fitness • Initiate progressive plyometric activities • Return to run program can be initiated towards end of phase III if criteria met
Precautions	• Avoid sacrificing quality for quantity during strengthening • Avoid hip flexor/adductor inflammation as activity increases • Ensure patient maintains full flexibility and pain-free ROM as strength continues to increase • Avoid aggressive stretching within this phase unless significant hypomobility noted
ROM/ Stretching	• ROM should be checked periodically to ensure that loading the hip with new exercises does not alter neuromuscular response and does not reduce pain-free ROM • Contact surgeon if there are range of motion concerns during this phase
Suggested Interventions	• Normalize hip musculature strength and endurance. Initiate adductor strengthening in this phase ○ Copenhagen adductor progression (Appendix B) • Continue progressive LE/core strengthening: slow to fast, simple to complex, stable to unstable, low to high force • DL strengthening advancement to SL strengthening • Progress core stability tasks with emphasis on rotational and side-support tasks (Ex: prone/side plank progressions, kneeling chops/lifts, plank on unstable surfaces, Pallof press) • LE strengthening tasks with multi-planar movements: emphasize core stability and hip/knee control (no valgus) during these tasks • Proprioception: vary surfaces, add perturbations, include variety of positions
Cardio-vascular Exercise	• Dynamic warm-up initiated • Bike/Elliptical Progression: progress resistance (and cross ramp on elliptical) as tolerated • Swimming Progression: can begin freestyle kick; continue to avoid rotational kicks

Plyometrics	• Criteria to initiate plyometric program
	  • Full, functional, pain-free ROM
	  • > 80% quadriceps, hamstring, and hip (recommend using hand-held dynamometer) strength compared to uninvolved leg- abductors, adductors, extensors, external rotators
	  • Squat 150% BW (barbell squat or leg press)
	  • 10 forward and lateral step downs from 8" step with proper alignment
	• Progressive weight bearing, DL → SL demands
	  • Shuttle plyometrics (DL → SL)
	  • Forward hop and hold (uninvolved → involved)
	  • DL mini hops/place jumps
	  • Lateral hops-> shuffles
	• Proper take off/landing mechanics emphasized
	• Agility ladder can be initiated if appropriate form/tolerance to activity in progressive plyometrics

Return to Running

Walk/jog progression can be initiated towards end of phase if patient demonstrates:

- Full, functional, pain-free ROM
- Ability to walk without pain for at least 15 minutes
- > 80% quadriceps, hamstring, and hip strength compared to uninvolved leg- abductors, adductors, extensors, external rotators (use hand-held dynamometer, if available)
- Squat 150% BW (barbell squat or leg press)
- 10 forward and lateral step downs from 8" step with proper alignment
- Hop and hold with proper mechanics (uninvolved→involved x10 repetitions)
- Ability to tolerate 200-250 plyometric foot contacts without reactive pain/effusion
- No gross visual asymmetry and rhythmic strike pattern with treadmill or over ground running

Basic Walk to Run Program	Warm-up	Run:Walk	Repititions	Cool down	Total	Days
Phase 1	5-10 min	1 min:1-3 min	2-4	5-10 min	20-30 min	2
Phase 2	5-10 min	2 min:1-3 min	2-4	5-10 min	20-30 min	2
Phase 3	5-10 min	3 min:1-2 min	2-4	5-10 min	20-30 min	2
Phase 4	5-8 min	4 min:1 min	2-4	5-8 min	25-30 min	2
Phase 5	5-8 min	5 min:1 min	2-4	5-8 min	25-35 min	2

General Guidelines

- Allow at least one day of rest between runs
- Gradual increase in distance is priority before increased pace
- It is common for runners to experience increased pain and/or reactive edema at least x1 during this return to run progression. When pain occurs, runner must stop running immediately and rest at least 1 day before restarting program. With restart, perform last walk/jog ratio cycle completed pain-free x2 before attempting the previously painful ratio cycle.

Phase IV – Return to Sport / Full Activity (3-6+ Months/Until Goals are Achieved)

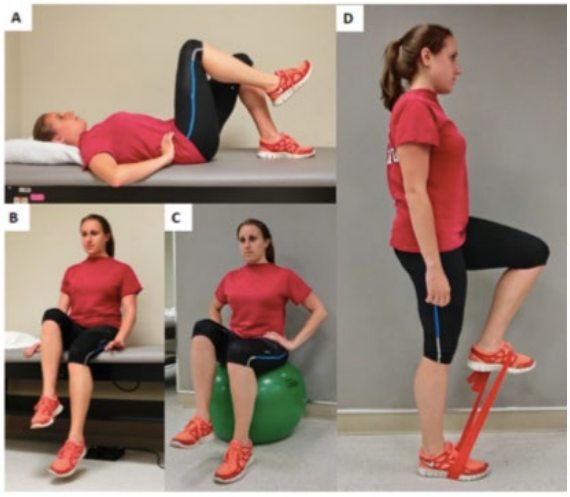
Goals	• Initiate return to run program if not initiated in phase III (if pt desires to return to impact activities) • Return to physically demanding jobs • Progressively return to sport or prior/desired level of function (6 months+)
Precautions	• Return to impact and sport activities may be delayed for pts with microfracture or revisions • Ensure patient maintains full flexibility and pain-free ROM as strength continues to increase • Continue to emphasize proper landing mechanics (DL and SL) • Closely monitor return to sport progression – avoid progression if increased pain with ADLs or sports activity participation
ROM/ Stretching	• Continue ROM interventions and stretches from previous phases • Include multi-planar lumbar and hip ROM/flexibility • Emphasis on dynamic warm-up (i.e. walking lunges, hurdle steps, etc.) • Monitor sport-specific stretching with gradual return to end range stretching • End-range mobility tasks can be initiated within this phase (for dancers/gymnasts)
Suggested Interventions	• Hip and core strengthening with focus on pelvic stability • Maintain DL strength but emphasize SL strengthening (involved and uninvolved) for normalization of strength between extremities

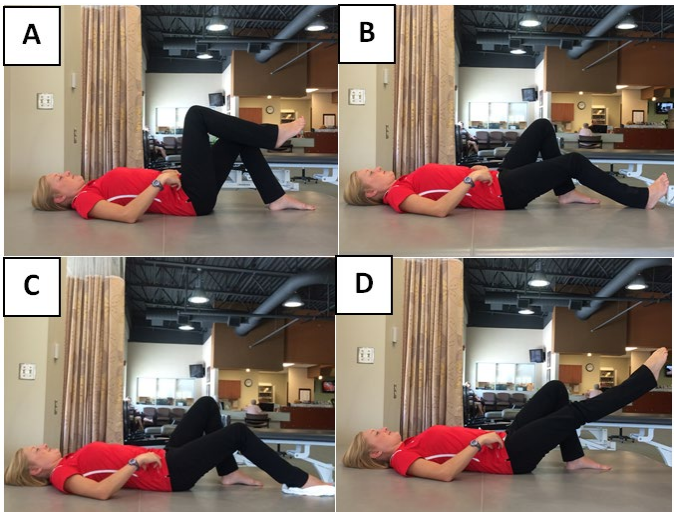
Neuro-muscular Control and Functional Performance	• Progress agility and plyometrics by adding in higher level activities (i.e. forward/backwards hopping, side shuffles, carioca, cutting, box drills, T drills, tuck jumps, DL/ SL jump turns)
	  • Focus on hip and pelvic stability
	  • Incorporate unstable surfaces with plyometrics
	• Sport specific drills in clinic (moderate speed → maximum speed)
	• **Prior to initiating speed training, patient must first complete return to run program without reactive pain/inflammation**
	• Ensure tolerance with DL and SL plyometrics prior to initiating power-focused or resisted, explosive training

Criteria to Return to Sport/ Discharge	• Physician clearance
	• Strength: > 90% compared to uninvolved hip (using hand-held dynamometer)- abductors, adductors, extensors, external rotators
	• Strength/LSI > 90% and/or SL Leg Press LSI > 90% (can also use 5 rep max testing)
	• SL Squat for endurance (# reps/60 seconds) can be used for limb symmetry/endurance
	• Side plank trunk endurance: >40 seconds
	• PROs: Score ≥ 90% on LEFS or HOS (ADL and Sports subscales)
	• Functional Performance
	  • 90% limb symmetry with SL hop for distance, triple hop for distance, SL triple crossover hop, and SL 6-meter timed hop (with demonstration of proper LE landing mechanics)
	  • Ability to complete sport-specific drills with correct mechanics (At maximum speed without pain)
	• **Cluster of testing recommended for pts returning to sport to assess multidirectional/ multiplanar movement patterns, analyze load tolerance onto affected LE, and assess symmetry in speed and change in direction in multiple directions. The following tests are examples that can be performed, but are not an exhaustive list. We also recommend sport-specific movement testing to ensure appropriate readiness for return to sport.**
	  • > 90% symmetry on Star Excursion Balance (posterolateral and posteromedial), Edgren Side Step Test (Appendix C), T-Test (Appendix D), Illinois Agility Test (Appendix E/F)

Appendix A: Psoas Progression

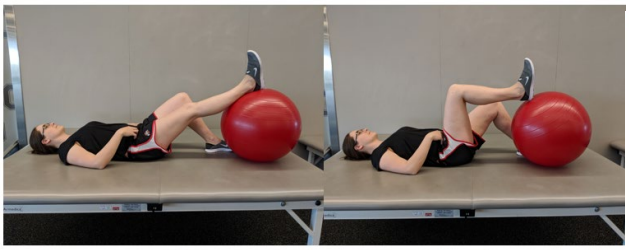
Clinicians may choose either of the two iliopsoas strengthening progressions based on clinician/patient preference. **All exercises are performed with simultaneous abdominal drawing in maneuver and lumbar spine in neutral alignment.**



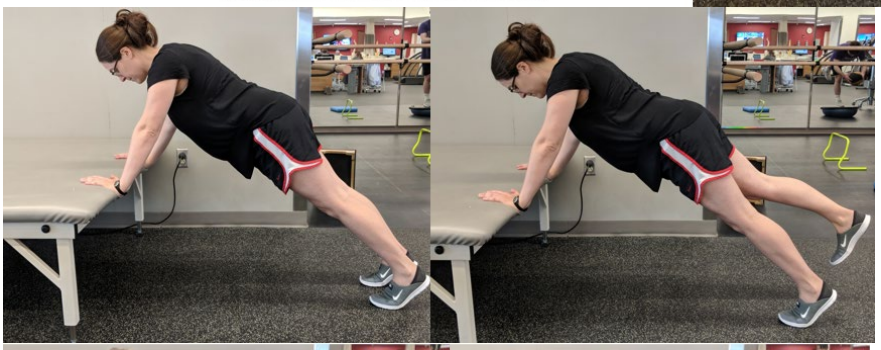


A) Supine short-lever hip flexion	A) Marching
B) Seated hip flexion	B) Walk Outs
C) Seated hip flexion on Swiss ball	C) Heel Slide (cue pt not to dig heel into table OR perform without touching the table)
D) Standing hip flexion with theraband resistance	D) Heel Slide with SLR (can raise leg from step/bolster if pain is present or if too difficult to lift from ground); raise leg only to height of opposite leg
Tyler TF, Fukunaga T, Gellert J. Rehabilitation of soft tissue injuries of the hip and pelvis. *Int J Sports Phys Ther*. 2014;9(6):785-797.	Dewitt, JD. Non-surgical/post-op management. Presented at: APTA's NEXT Conference & Exposition; June 5, 2015; National Harbor, MD.

Appendix A: Psoas Progression (additional exercises)



Hip flexor strengthening



Appendix B: Copenhagen Adductor Strengthening Progression

Start with Level 1 and then gradually progress to Level 3.

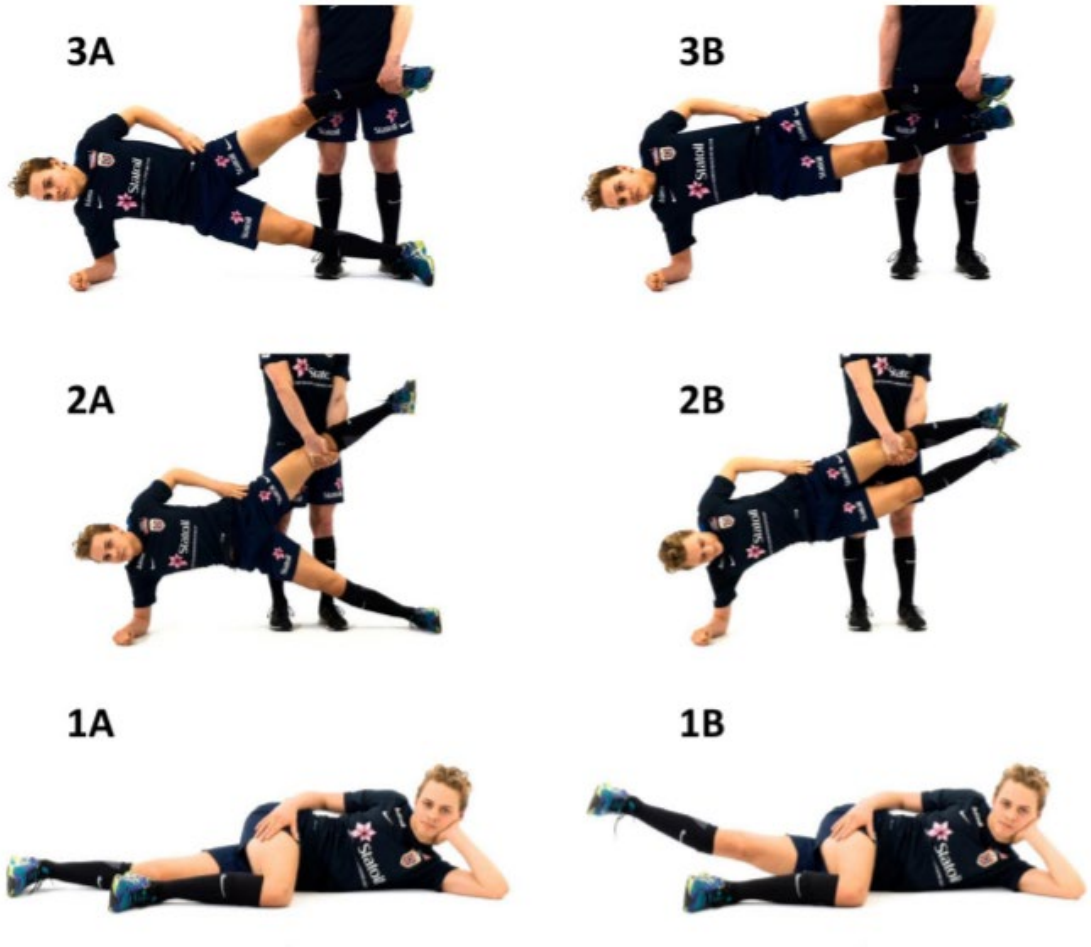


Figure 1 (A) Starting/ending position and (B) mid position for the different levels of the Adductor Strengthening Programme.

Haroy J, Clarsen B, Guldahl Wiger E, et al. The adductor strengthening programme prevents groin problems among male football players: a cluster-randomised controlled trial. *Br J Sports Med*. 2019;53:145-152.

Appendix C: Edgren Side Step Test

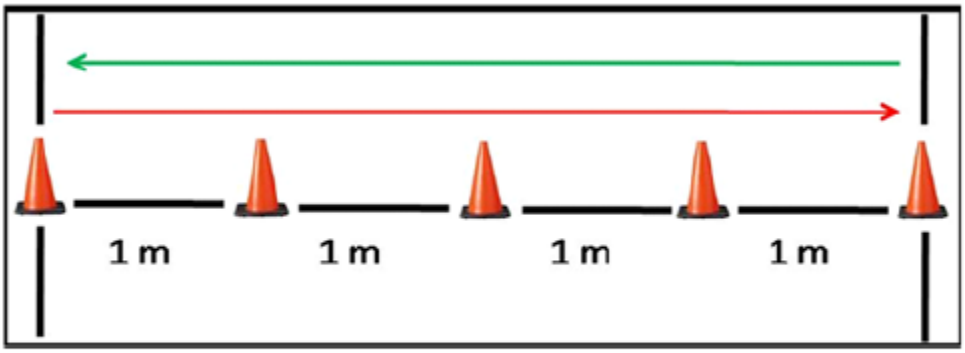


Figure 1.
Edgren Side Step Test.

- Begin with 5 cones spaced in 1 m increments
- Start standing at far left cone
- On “go” command, participant sidesteps to the right until his right foot touches or crosses the outside cone or tape mark
- Participant then sidesteps left until his left foot has touched or crossed the left outside cone
- Continue sidestepping back and forth as rapidly as possible for 10 seconds
- Participant is given 1 point per completion of each 1m increment marked by a cone. If the far end lines were not reached these points were not awarded. Subject given a score of 0 if he failed to keep his trunk and feet pointed forward at all times, crossed his legs, or did not complete the course successfully

Raya MA, Gailey RS, Gaunard IA, et al. Comparison of three agility tests with male servicemembers: Edgren Side Step Test, T-Test, and Illinois Agility Test. *JRRD*. 2013;50(7):951-960.

Appendix D: T-Test

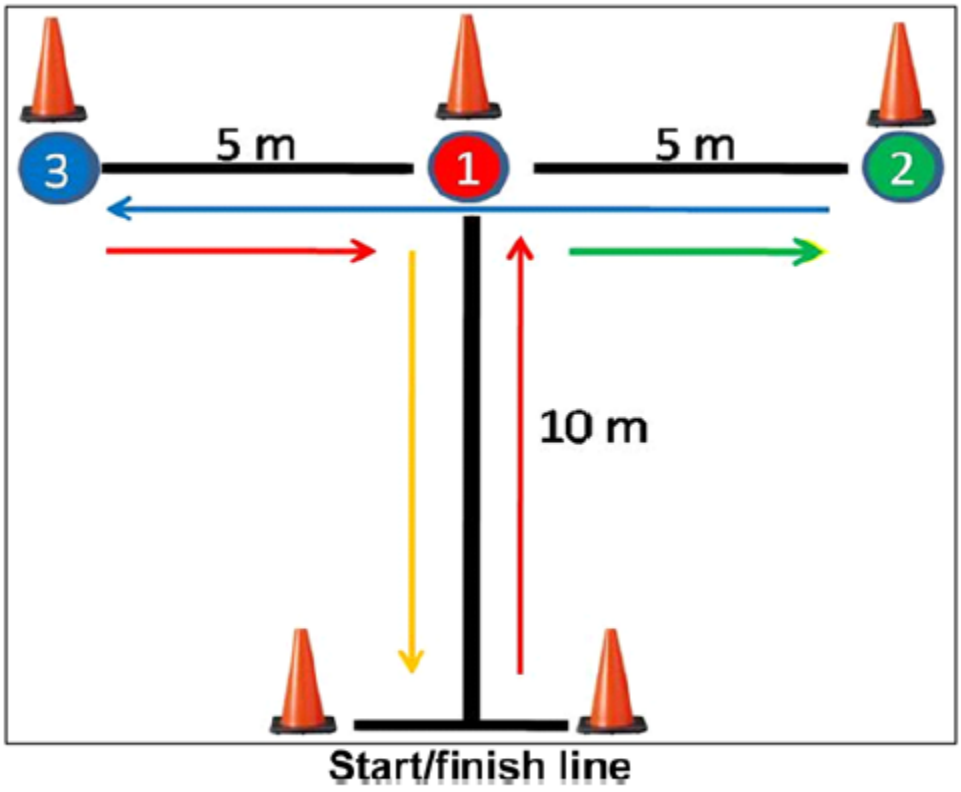


Figure 2.
T-Test.

- On the "go" command, participant runs as quickly as possible forward to the center cone
- Participant then sidesteps to the right 5 m to the right cone
- Participant then sidesteps to the left 10 m to the far left cone
- Participant then sidesteps to the right 5 m back to the center cone
- Participant runs backwards as quickly as possible to cross the finish line
- Can also perform starting with the sidesteps to the left first

Raya MA, Gailey RS, Gaunard IA, et al. Comparison of three agility tests with male servicemembers: Edgren Side Step Test, T-Test, and Illinois Agility Test. *JRRD*. 2013;50(7):951-960.

Appendix E: Illinois Agility Test

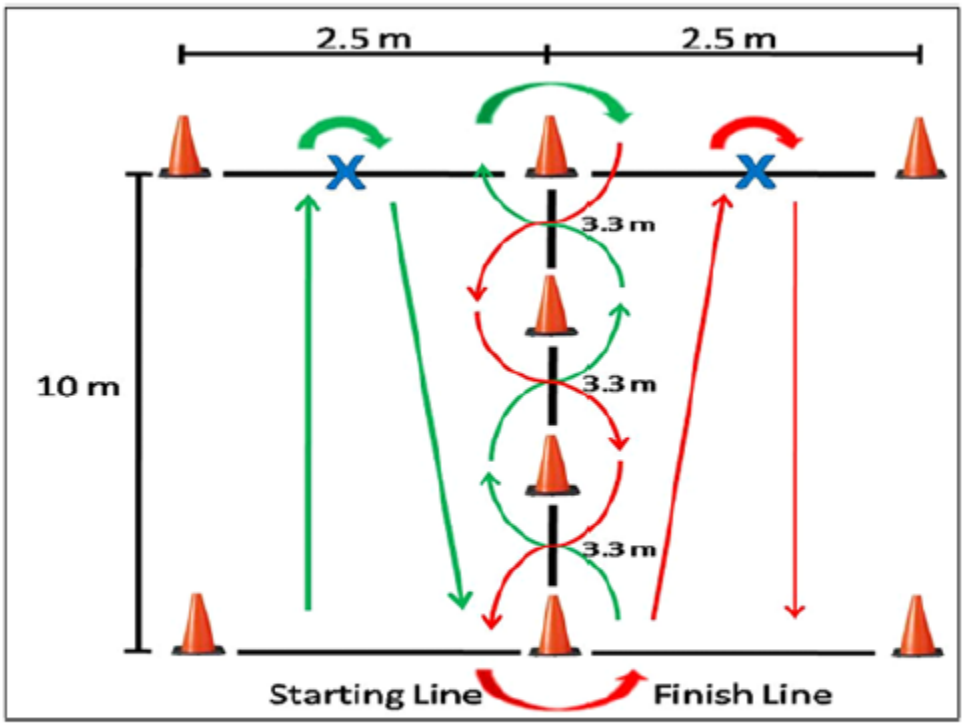


Figure 3.
Illinois Agility Test.

- Participant begins test lying prone on the floor behind the starting line with his arms at his side and his head turned to the side or facing forward
- On the "go" command, the participant ascends to his feet and runs as quickly as possible to the first tape mark. Participant is required to touch or cross the tape mark with their foot
- Participant turns around and moves back to first center cone, where he weaves up and back through the four center cones
- Participant runs as quickly as possible to the second tape mark on the far line, where required to touch or cross the end-line tape marks with their foot
- Participant then turns around and runs as quickly as possible across the finish line
- Test disqualified if participant failed to run the course as instructed, failed to reach the end lines, failed to complete the course, or moved any cones

Raya MA, Gailey RS, Gaunard IA, et al. Comparison of three agility tests with male servicemembers: Edgren Side Step Test, T-Test, and Illinois Agility Test. *JRRD*. 2013;50(7):951-960.

Appendix F: Modified Illinois Agility Test (performed in both directions):

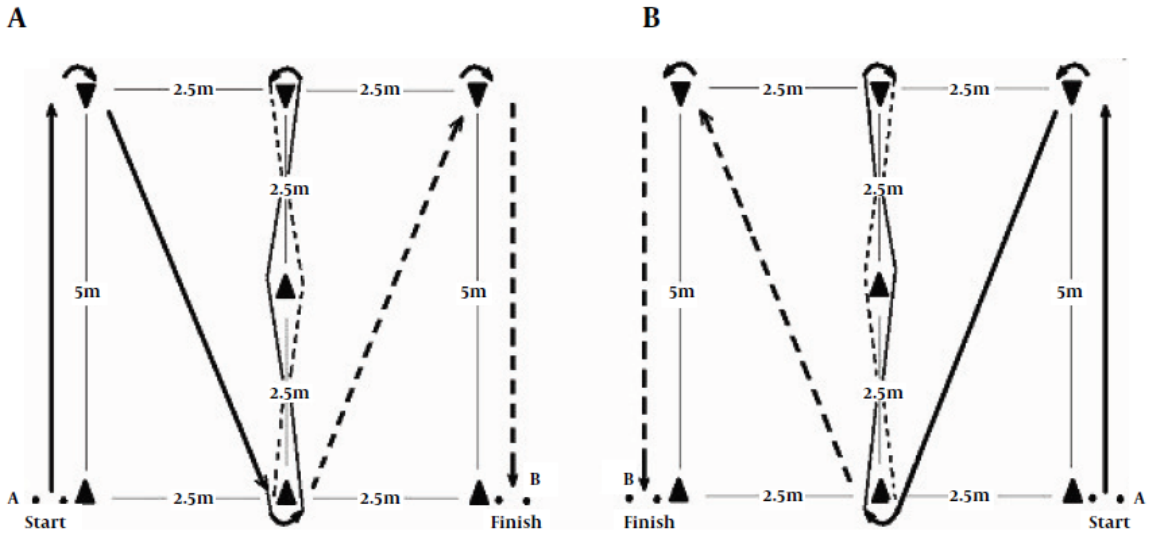
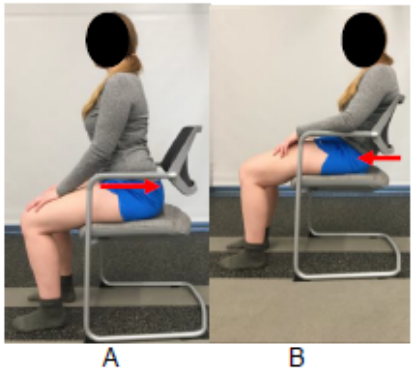


Figure 1. A, Diagram of the modified illinois change of direction test (MICODT); B, the inverted modified illinois change of direction test (I/MICODT).

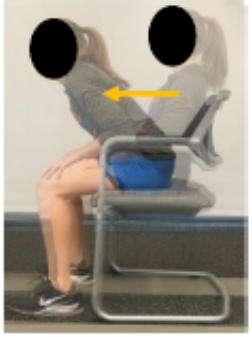
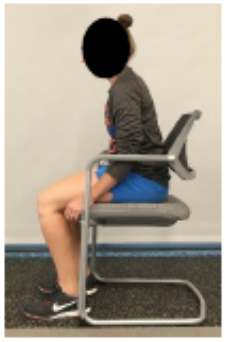
Rouissi M, Chtara M, Berriri A, et al. Asymmetry of the modified Illinois change of direction test impacts young elite soccer player's performance. *Asian J Sports Med*. 2016;7(2):e33598.

Appendix G: Posture and Movement Training

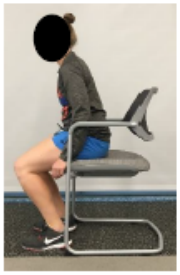
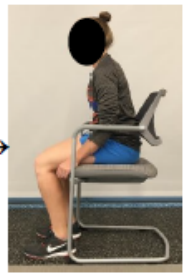
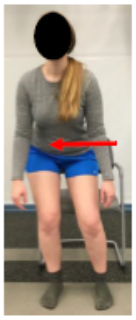
SEATED POSTURE

What to do	What not to do
 Equally distribute your weight across both legs	 Avoid crossing legs while sitting
 Scoot your bottom all the way to the back of the chair or use lumbar roll to align shoulders and hips while seated Touch your lower (lumbar) spine to the back of the chair	 Avoid sitting in "figure 4" position
	 Avoid leaning your trunk
	 A B Avoid sticking your bottom out (A) or sitting too far forward (B)

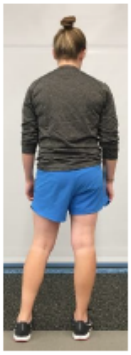
RISING FROM A CHAIR

What to do	What not to do
 Keep your feet hip-width apart	 Avoid excessive bending at the trunk; focus on using your hips and thighs to stand up
 Position feet slightly behind your knees	 Avoid knees collapsing in toward each other
 Scoot your bottom forward in the chair, but keep feet planted	 Avoid using your hands to push off from the chair or your thighs
 Push through your thighs and squeeze your bottom to lift off the chair	 Avoid snapping your knees back quickly as your stand

SITTING DOWN TO A CHAIR

What to do	What not to do
 Keep your feet hip-width apart Slowly lower your bottom back to the chair	 Avoid knees collapsing in toward each other Avoid "plopping" down
  Once seated, scoot your bottom to the back of the chair	 Avoid shifting your weight to only one side

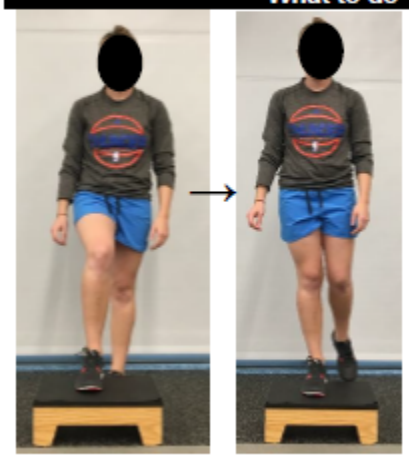
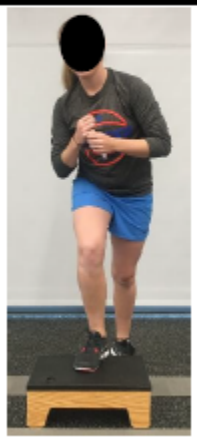
STANDING POSTURE

What to do	What not to do
 Stand equally on both legs Relax your knees, allow them to bend slightly Maintain an upright posture Align your shoulders, hips, and knees: Imagine your body is a tower of bricks, align the bricks so they stack nicely	 Avoid standing with your knees locked Do not push your knees backwards
	 Avoid shifting your weight to one side Do not stand with your hand on your hip

SINGLE LEG STANCE

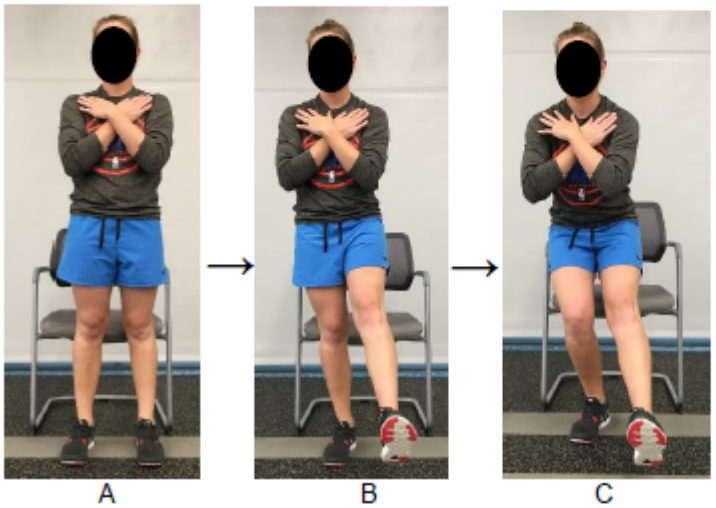
What to do	What not to do
 Keep an upright posture for your trunk Maintain your balance, look at something still in your surroundings	 Avoid dropping one side of your pelvis toward the floor Imagine your pelvis is a tea cup, do not let the cup tip to the side to pour out the tea
	 Do not lean your trunk in any direction

FORWARD STEP UP

What to do	What not to do
 Start by standing on both legs, hip-width apart Step up with one leg Focus on pushing through the leg on the step Keep your trunk upright and hips level	 Avoid using momentum of your trunk to pull your leg up

SINGLE LEG SQUAT

What to do



A B C

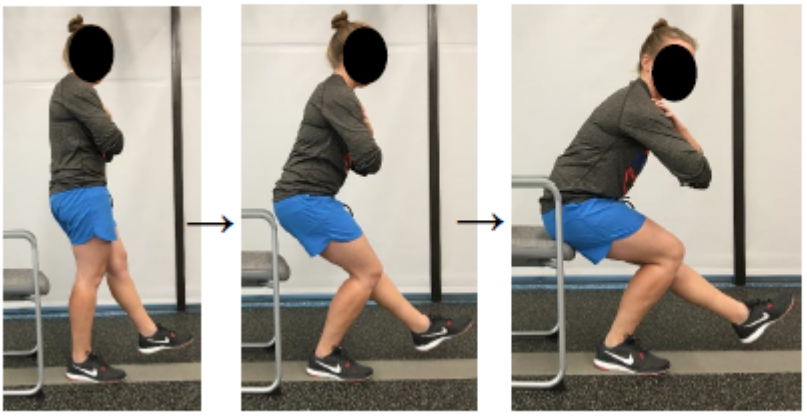
A. Start by standing on both legs, hip-width apart

   Cross arms at chest

B. Hold one leg out in front

C. Slowly move your bottom back (sit back) to tap a chair behind you

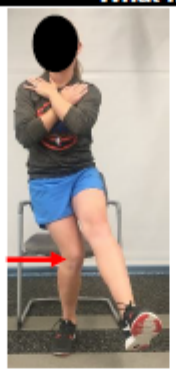
   Do not transfer your weight to the chair, slowly return to standing



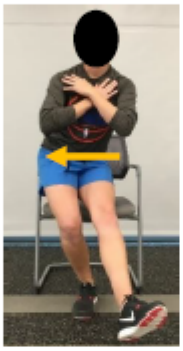
If the chair is too low for you to reach without having poor technique (see 'what not to do' below), add 1-2 pillows to the chair to adjust the height

SINGLE LEG SQUAT

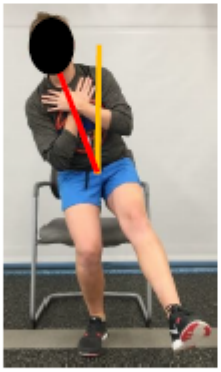
What not to do



Avoid letting your knee roll in toward your other thigh



Avoid having your hip stick out to the side



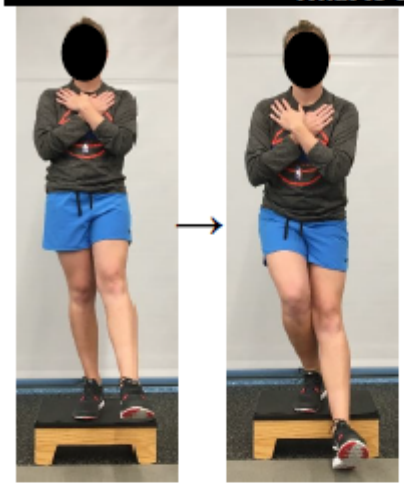
Do not lean your trunk in any direction, keep an upright posture for your trunk

Avoid dropping one side of your pelvis toward the floor

Imagine your pelvis is a tea cup, do not let the cup tip to the side to pour out the tea

FORWARD TAP DOWN

What to do	What not to do



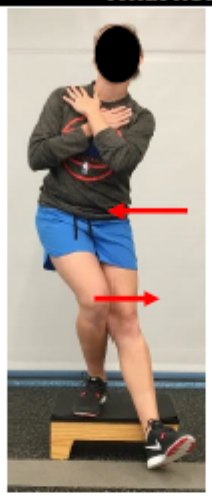
Stand hip-width apart on the step

Cross arms at chest

Stand on one leg and slowly lower the heel of your opposite leg to tap the floor in front of the step

Keep hips level and trunk upright

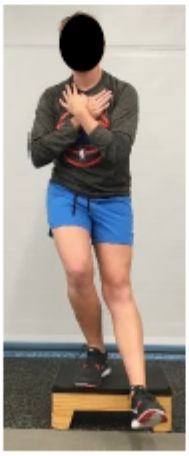
Slowly return to start position



Avoid letting your knee roll in toward your other thigh

Avoid having your hip stick out to the side

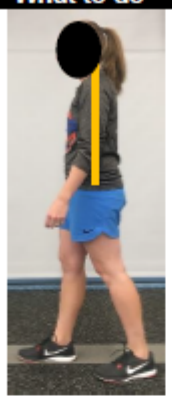
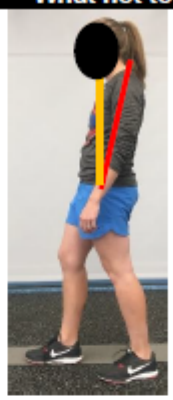
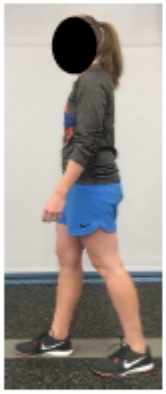
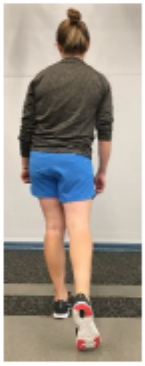
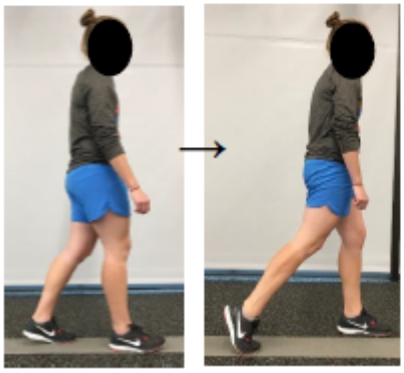
Do not lean your trunk in any direction, keep an upright posture for your trunk



Avoid dropping one side of your pelvis toward the floor

Imagine your pelvis is a tea cup, do not let the cup tip to the side to pour out the tea

WALKING

What to do	What not to do
 Walk with an upright posture	 Avoid leaning backward when you walk, leading with your pelvis. Lean forward slightly with your trunk to correct this.
 Take shorter steps. Taking longer steps overextends the hip and can increase pressure on the hip	 Avoid swinging your hips when you walk. Imagine you have bells hanging from either hip, do not swing your hips to jingle the bells.
 Push more through your foot when you walk to propel yourself forward. You may also try to walk faster, but still take shorter steps to avoid overextending your hips.	

Appendix H: Return to Sexual Activity

Many people have concerns about having sex after having hip surgery and wanting to protect the hip. Men are often able to return to sexual activity 2 weeks after surgery and women about 4 weeks after surgery, but it will depend on your surgery and symptoms. These timelines are approximate, so it is important for you to talk to your doctor and/or physical therapist to be sure when it is safe for you.

Motions to avoid:

- Extreme or end ranges of motion
- Knee turning out of the side (external rotation)
- Bending knee up to the chest (deep hip flexion)
- Bringing leg too far back (extension)

As you continue to heal and strengthen the hip, you may not need to limit these movements. Ask your doctor or physical therapist if you have any restrictions to your movements over time.

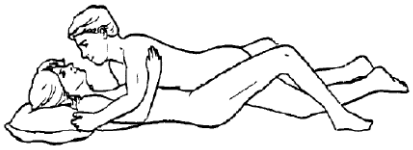
Stop if you have hip pain or muscle tightness. If you have pain, change your position so your hip is supported and try to minimize extremes of motion. Pillows may help to provide support and limit your hip motion. If you still have pain or muscle tightness, you may need to delay having sex until you have more flexibility movement in your hip so you do not have pain.

Talk with your partner about your movement limits as you resume sexual activity. You both need to be aware of the limits to prevent injury or pain. Stop if you are having any pain or muscle tightness in the hip and work with your partner to try a different position.

If you have pain with intercourse, you may benefit from a referral to a pelvic health physical therapist.

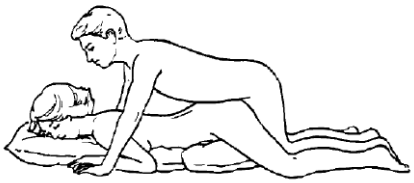
- Person on top with legs together, shown as male in the picture, should be safe position.

  Person on bottom with legs bent up, shown as female, should avoid leg falling out too far to the side.



- Person on bottom lying face down with pillows under hips, shown as female, should limit how far out knees are positioned.

  Male on hands and knees on top should be sure there is no pinching or tightness in his hip or groin before using this position.



- Person lying on back on bottom with knees bent slightly and not turned out to the sides, shown as male, should be a safe position.

  Person on hands and knees on top, shown as female, should be sure position does not cause pain before using the position. Also be sure knees are not spread out too far to the sides.

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