



Virginia Sportsmedicine Institute

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Aquatic Therapy for the Post-Op Hip Patient

What you should know about water-based exercises:

- Are appropriate for those who need to strengthen or improve balance
- Allow for ROM in an environment that is shielded from the immediate effects of gravity. Water provides buoyancy (amount of flotation) as the level of the water increases, therefore the deeper you go, the less you will perceive what you weigh

Benefits of an Aquatic Therapy Program

- Unloading of the joints
- Balance-assisted exercises via water
- Amount of resistance determined by the individual
- Low impact exercises

Prior to engaging in aquatic therapy:

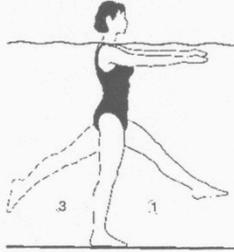
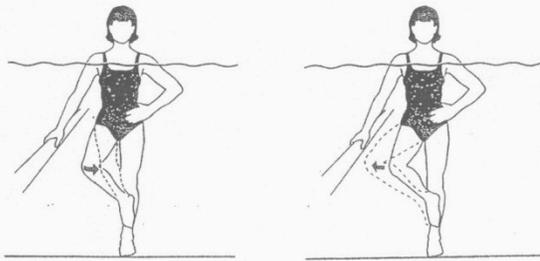
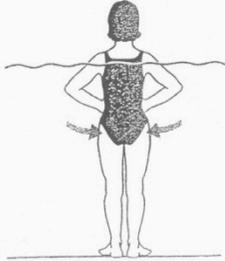
- Consult your primary care physician to ensure an aquatic therapy program is appropriate for you.
- If you have a surgical site that may not be fully healed, please consult your surgeon/physician prior to engaging in any water-based exercises.

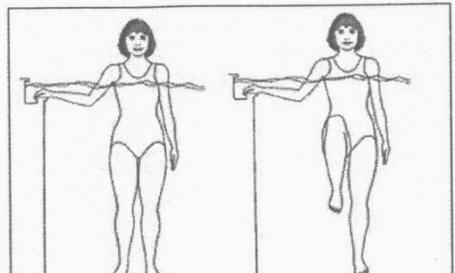
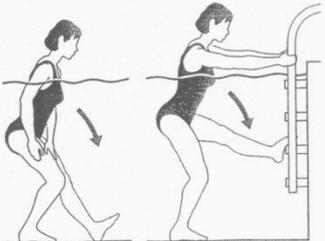
At the beginning of your session:

- Be sure to stretch all appropriate body parts prior to entering the water to loosen your muscles, and repeat some of the stretches once you are in the water as well.
- Take a few warm up strokes in the water to elevate your heart rate slightly before exercising.
- Once warmed up keep moving around throughout the session, but do not push yourself to the point of being in pain.
- If once in the water you begin to feel lightheaded, dizzy, nauseous or overly anxious, tell the therapist immediately.

Stage 1A: Active Range of Motion (AROM)

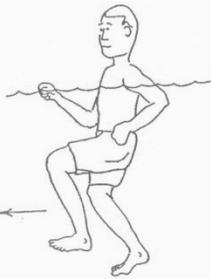
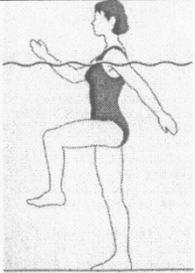
- Begin at **Week 2 Post-Op** using a water-proof dressing
- Goals of stage 1A rehab:
 - Begin to regain motion in chest deep water
 - Avoid pain with all motions while maintaining a level pelvis
 - Perform AROM 3-5x/week
- **Exercises to be performed:**

	<p>Straight Leg Raise (Front/ Backward)</p> <ul style="list-style-type: none"> • Standing next to pool wall raise one leg straight out in front to a comfortable level and then swing leg back through the middle and straight behind you • Your hips and shoulders should remain upright and facing forward • Motion is occurring from the hip not the knee • Repeat _____ times <p>Note: These exercises when performed fast in the water create more resistance and are more strenuous.</p>
	<p>Straight Leg Raise (Sideways)</p> <ul style="list-style-type: none"> • Standing next to pool wall bring one leg out to the side then back to starting position • Repeat _____ times <p>Note: These exercises when performed fast in the water create more resistance and are more strenuous.</p>
	<p>Standing Hip Internal/External Rotation Stretch</p> <ul style="list-style-type: none"> • Stand next to pool wall and hold on with one hand. Bend knee of involved leg and place foot on opposite shin. • Gently press involved leg out toward the wall, hold for ___ seconds. Bring knee back across body and hold for ___ seconds.
	<p>Standing Gluteal Squeezes</p> <ul style="list-style-type: none"> • Stand facing wall with hands on hips. Slowly contract your buttock muscles. Hold for _____ seconds. Repeat _____ times.

	<p>Hip Circumduction</p> <ul style="list-style-type: none"> • Stand next to wall and slowly raise involved leg out to the side and slowly make circles with your leg while keeping your leg straight • Perform ___ circles. • Repeat circles going in opposite direction.
	<p>Standing Knee Flexion</p> <ul style="list-style-type: none"> • Stand next to wall and hold with one hand. Slowly raise knee to 90 degrees on involved side. • Hold position for ___ seconds. Repeat ___ times.
	<p>Calf Stretch</p> <ul style="list-style-type: none"> • Facing pool wall, place both feet so that your toes are on the wall • Slowly move your hips towards the wall while straightening out your legs until you feel a stretch <p>Hold for 30 seconds</p>
	<p>Hip Internal/External Rotation</p> <ul style="list-style-type: none"> • Stand with back against wall and bend hip and knee to 90 degrees • Slowly move ankle outward (just to the point before pain) and hold for ___ seconds. • Slowly move ankle inward toward midline and hold for ___ seconds <p>Repeat for ___ repetitions, ___ sets. **Not for Total Hip Patients!!</p>
	<p>Hamstring Stretch</p> <ul style="list-style-type: none"> • Stand in water near a bottom stair/ladder rung in at least waist deep water. • Raise foot of involved leg onto bottom rung/stair while keeping leg straight. If no stretch is felt, slowly lean trunk forward. • Hold position for ___ seconds and repeat ___ times.

Stage 1B: Gait Training

- Begin at **Week 3 Post- Op**
- Goals of stage 1B rehab:
 - Begin in chest deep water and progress to waist deep after 1-2 wks of no pain
 - Focus on maintaining a level pelvis
 - Perform gait training 3x/week
- **Exercises to be performed:**

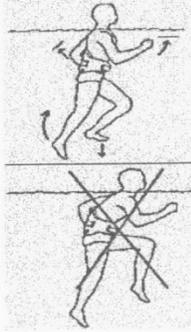
<p>Forward/ Backward Walking</p> <ul style="list-style-type: none"> • Standing near wall, begin by walking ___ paces forward in water, making sure to lift foot off of the ground by bending at the knee and hip. • To walk backward, stand in place and slowly bend hip and knee before swinging the leg backward and placing foot on the ground. Repeat this for ___ paces. 	<p>Sideways Walking</p> <ul style="list-style-type: none"> • Stand facing the wall and move involved leg out to the side and place foot on floor. Move uninvolved leg toward the involved leg to return to starting position. • Repeat this for ___ paces. • To exercise the uninvolved leg, take same path back to the starting point leading with the uninvolved leg. Otherwise, turn and face away from wall to exercise the involved leg.
	<p>High Knee Forward Walking</p> <ul style="list-style-type: none"> • Walk forward raising knee to height of hip as if you were marching. • Make sure heel hits the ground, then whole foot, and push off using the toes to raise the leg. • Walk ___ laps or ___ minutes. <p>*Less than hip height for total hip patients</p>
	<p>Marching</p> <ul style="list-style-type: none"> • Standing in place bring knee up to hip level and return to ground • Repeat with opposite leg consecutively • Your motion should look like you are a soldier standing in place. <p>Repeat for approximately ___ marches on each leg.</p> <p>*No more than 90 degrees for total hip patients</p>
	<p>Groin Stretch</p> <ul style="list-style-type: none"> • Hang vertically in an inner tube • Bend knees together and heels upward until a stretch is felt in the inner thigh/groin • Hold for ___ seconds, repeat ___ times <p>*Not for total hip patients</p>



Hamstring Curl

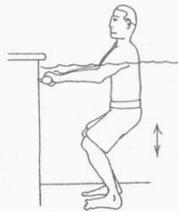
- While standing on one leg, bring heel of opposite leg to your rear
- Return foot to starting position
- Repeat _____ times

Note: These exercises when performed fast in the water create more resistance and are more strenuous.



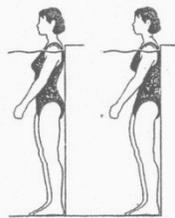
Bike Pedaling in Deep Water

- Using a float belt, go into deep water such that the feet are not in contact with the floor. (OK to stay near a wall just in case)
- While maintaining an upright position, slowly begin to bend knee and hip of one leg. Slightly kick bent leg forward while straightening out leg and simultaneously bent hip and knee of opposite leg.
- Perform this motion continuously for _____ seconds.



Mini Squats

- Stand facing the wall with feet shoulder width apart using both arms for support.
- Slowly bend knees and lower torso into water until the hips are halfway between the surface of the water and your knees
- Slowly arise back into standing keeping torso straight and heels on the floor.
- Repeat _____ times; _____ sets.



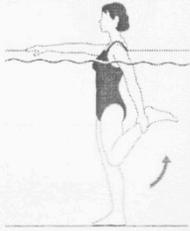
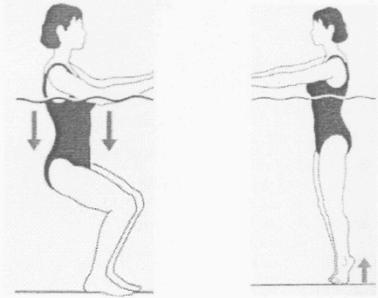
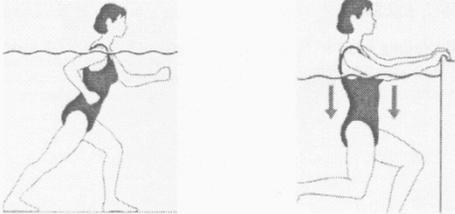
Pelvic Tilt

- Stand with back against pool wall with feet shoulder width apart and knees over the toes
- Contract the lower abdominals, pulling the pubic bone forward and up toward the navel (posterior pelvic tilt)
- Hold for _____ seconds, then relax.
- Repeat _____ times; _____ sets.

Stage 2: Intermediate Training

- Begin at **Week 4/5 per MD approval**
- Goals of stage 2 rehab:
 - Begin to incorporate components of strength training in the water
 - Add in low load stretches to increase muscle flexibility
 - Continue to increase endurance
 - Perform 4-5x/week

Exercises to be performed:

	<p>Knee to Chest Stretch</p> <ul style="list-style-type: none"> • Standing with back against the pool wall, grasp behind your thigh and pull your knee to your chest • Hold for 30 seconds. Return to starting position and perform on opposite leg. Repeat once more on each leg. <p>*No more than 90 degrees for total hip patients</p>
	<p>Quadriceps Stretch</p> <ul style="list-style-type: none"> • Holding on to pool wall with one hand, use the other to pull the ankle of one leg towards your rear until a stretch is felt • Hold for 30 seconds. Perform same on opposite leg. Repeat on both legs.
	<p>Mini squats with heel raise</p> <ul style="list-style-type: none"> • With feet shoulder width apart squat down keeping your head and shoulders over your hips • Raise yourself back up to standing position, then up onto your toes • This exercise should be one continuous motion from start to finish. <p>Repeat _____ times</p>
	<p>Lunge</p> <ul style="list-style-type: none"> • Start in standing position and take one step forward with one foot • Kneel down as far as you are comfortable • Return to start position and repeat with opposite leg <p>Repeat _____ times</p>



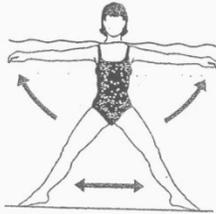
Single Leg Mini Squat

- Stand facing pool wall with feet shoulder width apart
- Bend knee of unaffected leg and slowly lower yourself into the water while balancing yourself on the involved leg
- The knee should go no lower than the level of your hip
- Repeat this _____ times, _____ sets



Step Ups

- Stand on pool floor near a wall or railing for support.
- Step up onto bottom stair leading with the involved leg; straighten involved leg on stair to raise the uninvolved leg up onto the step/stair.
- Return to starting position by leading down step with the involved leg onto the pool floor, followed by the uninvolved leg.
- Repeat _____ times; _____ sets.



Stride Jumps

- Stand with feet together and arms at your sides
- Hop upward and simultaneously bring arms up to the surface of the water and spread legs apart from one another
- Hop up again and return to the starting position.
- Repeat _____ times; _____ sets

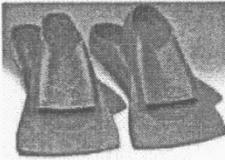


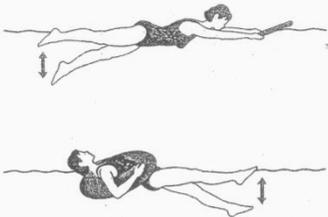
Pelvic Curl

- Place the back against the pool wall and hold onto the edge of the pool with both hands
- Slowly lift the legs off of the pool bottom until the knees are at 90 degrees and the lower spine is flat against the wall
- Keeping the knees and hips bent, slowly lift the pelvis off of the wall using the abdominal muscles
- Release the contraction and allow the pelvis to touch the pool wall again
- Repeat this _____ times; _____ sets

Stage 3: Advanced Aquatic Training

- Begin at **Week 6 post- op**
- Goals of stage 3 rehab:
 - Increase total resistance
 - Perform 20-30 minutes continuously, 3-5x/week
- **Exercises to perform:**
 - Kicking with kickboard across pool
 - Kicking with short fins across pool (see picture below)
 - Swimming front crawl/ backstroke
- Swimming breast stroke (beginning at week 8)



	<p>Pedaling in Water</p> <ul style="list-style-type: none"> • Lay on back and support self with elbows. • Make circular cycling motion with legs underwater • Perform for ___ reps or ___ minutes • Repeat in opposite direction
	<p>Straight leg kicks/Flutter kicks</p> <ul style="list-style-type: none"> • Lie on back/stomach in water holding an inner tube or kickboard for support; Keeping legs straight alternately (and gently) kick legs. • Keep feet under water while kicking, barely making a splash as you move through the water
	<p>Standing Crunches</p> <ul style="list-style-type: none"> • Stand while performing a pelvic tilt • Hold a ball or flotation device snugly against your chest • Gently contract your abdominal muscles to bring your upper body forward • Hold the contraction for 4 counts, and then relax for 4 counts. Maintain the pelvic tilt throughout. • Repeat ___ times; ___ sets

