



### Rehabilitation Exercises for Knee Injuries

If instructed by your medical doctor, you may begin these exercises when the pain has started to decrease.

#### Hamstring Stretch:

- A. Lying hamstring stretch: Lie on your back with your buttocks close to a doorway and extend your legs straight out in front of you along the floor. Raise your injured leg and rest it against the wall next to the door frame. Hold this position for 30-60 seconds. You will feel a stretch in the back of your thigh. Repeat 3 times on each leg.



- B. Standing hamstring stretch: Stand with the heel of your injured leg resting on a chair, counter, etc. that is at least 15 inches high but not higher than your hips. Keep your knee straight and gently lean forward from your hips, keeping your shoulders in line with your trunk, until you feel a stretch in the back of your thigh. Hold this position for 30-60 seconds. Return to the starting position. Repeat this exercise 3 times on each leg. \*Do not round your shoulders bringing your head towards your toes as this will stretch your low back instead of your hamstring.



**Quadriceps Stretch:** Stand an arm's length away from a wall, facing straight ahead. Brace yourself by keeping the hand on your uninjured side against the wall. With your other hand, grasp the ankle or the injured leg and pull your heel up toward your buttocks. Hold this position for 30 seconds. Repeat 3 times on each leg. \*Do not arch or twist your back during the stretch.



## Calf Stretch:

- A. Towel stretch: Sit on a hard surface with your legs stretched out in front of you. Loop a bath towel around the ball of your foot and gently pull the towel toward your body, keeping your knee straight. At the same time that you are pulling the towel towards you, contract your shin muscles (tibialis anterior). Hold for 3-5 seconds. Repeat 3-5 times then switch and repeat exercise on opposite foot. Repeat this exercise 3-5 times daily.



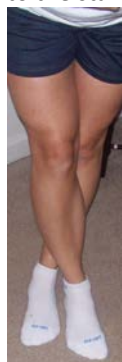
- B. Standing gastroc stretch: Facing a wall put your hands against the wall at about eye level. Step back into a lunge position, keeping the leg you are stretching straight and behind you. Turn that foot slightly outward and keep your heel on the floor. Slowly lean into the wall until you feel a stretch in the back of your calf. Hold for 30 seconds. Switch legs and repeat on the other side. Do 3 sets of 30 seconds for each calf. Repeat 5 times daily.



- C. Standing soleus stretch: Stand facing a wall with your hands at about chest level. With both knees slightly bent and the leg you are stretching slightly back, gently lean into the wall until you feel a stretch in your lower calf. Once again, angle your back foot slightly outward and keep your heel down on the floor. Hold for 30 seconds. Switch legs and repeat on the other side. Do 3 sets of 30 seconds for each calf. Repeat 5 times daily.



**Iliotibial (IT) Band Stretch (standing):** Cross your uninjured leg over your injured leg and bend down to touch your toes. Hold this position for 30 seconds. Return to the starting position. Repeat 3 times.



**Heel Slide:** Sit on a firm surface with your legs straight in front of you. Slowly slide the heel of your injured leg toward your buttock by pulling your knee to your chest as you slide. Return to the starting position. Repeat 20 times.



**Straight Leg Raise:** Sit on the floor with your injured leg straight and the other leg bent so that foot is flat on the floor. Turn the toes of your injured leg slightly outward and pull the toes towards you as far as you can comfortably while tightening the muscles on the top of your thigh. Raise your injured leg 6-8 inches off the floor. Hold this position for 5 seconds and then slowly return to the starting position. Repeat 10 times, do 3 sets of 10 and repeat on opposite side if needed.



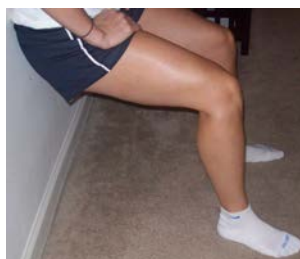
**Quad Set:** Sit on the floor with your injured leg straight out in front of you and the uninjured leg bent. Turn the toes of your injured leg slightly outward. Try to tighten up the muscles at the top of your thigh by pushing the back of your knee down into the floor. Concentrate your contraction on the inside part of your thigh. Hold this position for 5 seconds and then slowly return to the starting position. Repeat 10 times, do 3 sets of 10.



**Wall Slide:** Stand with your back, shoulders and head against a wall and look straight ahead. Keep your shoulders relaxed and your feet 12 inches away from the wall and a shoulder's width apart. Turn your toes slightly outward. Keeping your head and lower back against the wall, slowly squat so you slide down the wall 2-3 inches. Hold this position for 10 seconds. Slowly slide back up. Repeat 20 times. \*Do not let your knees travel over your toes and never squat past 90 degrees.



**Wall Squat:** Stand with your back, shoulders and head against a wall and look straight ahead. Keep your shoulders relaxed and your feet 12 inches away from the wall and a shoulder's width apart. Turn your toes slightly outward. Keeping your head and lower back against the wall, slowly squat until you are almost in a sitting position. Hold this position for 10 seconds. Slowly slide back up. Repeat 20 times. For added resistance, you can place a ball or rolled up pillow between your thighs. Squeeze the pillow or ball at the same time that you slowly squat. \*Do not let your knees travel over your toes and never squat past 90 degrees (you do not want your thighs to be parallel to the floor).



**Prone Hip Extension:** Lie on your stomach with your legs straight out behind you. Squeeze the buttock muscles and lift the leg on your injured side straight up off the floor about 6-8 inches. Keep your knee straight. Hold this for 5-10 seconds and then slowly lower your leg to the floor. Repeat 10 times. Do 3 sets of 10.



**Prone Knee Flexion:** Lie on your stomach with a towel rolled up underneath your injured thigh, just above your knee. Slowly bend your knee and try to touch your buttock with your heel. Return to the starting position. Repeat 10 times, do 3 sets of 10.



### **Hip Abduction:**

- A. Lying hip abduction/adduction: Lie on your back with your legs straight out in front of you and your toes pointed toward the ceiling. Slide your injured leg out to the side as far as possible. Slide it back to the starting position. Repeat 10 times.



- B. Sidelying hip abduction: Lie on your side with the injured leg on top. Bend the bottom (uninjured) knee slightly for balance. Roll your top (injured) hip slightly forward. Lift your injured leg straight up, leading with your heel. Do not let it come forward. Hold this position for 5-10 seconds. Slowly lower your leg to the starting position. Repeat 20 times.



- C. Resisted hip abduction with band: Tie a loop in one end of the band and slip the loop around the ankle of your injured leg. Have someone hold the other end of the band or if no one is available to help, make a knot in the other end of the band and close the knot in a door. Stand sideways to the door, with injured leg away from the door. Tighten your thigh muscles and extend your leg out to the side. Return to the starting position. Repeat 10 times, do 3 sets of 10.



## Hip Adduction:

- A. Lying hip abduction/adduction: Lie on your back with your legs straight out in front of you and your toes pointed toward the ceiling. Slide your injured leg out to the side as far as possible. Slide it back to the starting position. Repeat 10 times.



- B. Sitting hip adduction isometrics: Sit with your knees bent 90 degrees, a pillow placed between your knees and your feet flat on the floor. Squeeze the pillow for 5-10 seconds and then relax. Repeat 20 times.



- C. Sidelying hip adduction: Lie on your injured side. Keep your injured leg straight. Bend your uninjured leg and place that foot in front of your injured leg. Raise your injured leg as far as you can comfortably and hold for 5-10 seconds then slowly lower your leg. Repeat 20 times. \*Keep your hips still while you are lifting your injured leg.



- D. Resisted hip adduction with band: Tie a loop in one end of the band and slip the loop around the ankle of your injured leg. Have someone hold the other end of the band or if no one is available to help, make a knot in the other end of the band and close the knot in a door. Stand sideways to the door, with your uninjured leg away from the door. Bring your injured leg across your body sideways, crossing over your uninjured leg and stretching the band. Return to the starting position. Repeat 10 times, do 3 sets of 10.

