



# Patellofemoral Pain Rehabilitation Guidelines

## **General Rehab Guidelines • Control Pain and Edema**

- Normal Range of Motion (ROM), proprioception, strength
- Return to normal Activities of Daily Living (ADLs)/Sports

## **Phase I Goals: Full ROM**

- Control Pain
- Decrease Edema
- Instruction in Home Exercise Program (HEP)

## **Suggested Exercises**

- Quad Sets
- Straight Leg Raises
- Heel Slides
- Hip exercises for flexion, extension, abduction, and adduction
- Stretches: Quadriceps, Hamstrings, Gluteals, Abductors, Adductors, Iliotibial Band (ITB), Piriformis
- Modalities as needed

## **Phase II Goals: Increase Strength**

- Increase Proprioception
- Increase Flexibility
- Decrease Pain
- Maintain ROM

## **Suggested Exercises**

- Closed Chain Strengthening: Leg Press, TKEs, Set-Ups, Wall Sits, Hamstring Curls
- Abductor and Adductor machines
- Proprioceptive exercises
- Lower extremity stretches
- Continue with cardiovascular
- Continue with modalities as needed

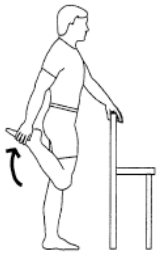
## **Phase III Goals: Return to normal ADLs / sports without pain or limitation**

- Maintain flexibility
- Independent HEP

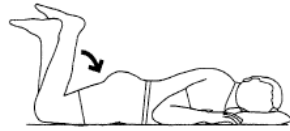
## **Suggested Exercises**

- Continue to increase strength and flexibility
- Sports specific exercises where indicated

- Cardio progression where indicated
- Independence demonstrated in HEP



- 1) Stand on uninjured leg, using chair for balance.
- 2) Grasp the ankle of involved knee and pull upward.



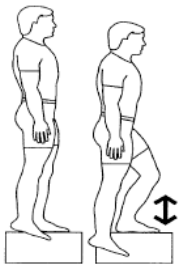
- 1) Bend involved knee, placing uninjured leg behind the involved.
- 2) Gently push involved knee forward with uninjured leg.



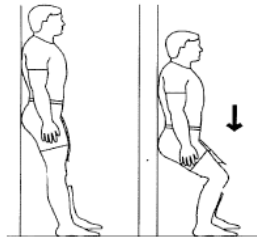
- 1) Stand with heel propped on table, knee straight, as shown.
- 2) Gently and slowly lean forward at waist.



- 1) Sit on firm surface with legs straight out in front.
- 2) Slowly bend at hips, reaching for toes.



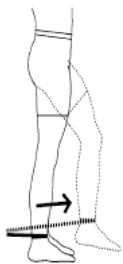
- 1) Place involved leg on edge of step.
- 2) Step up, lifting uninjured leg off floor.
- 3) Lower uninjured foot toward floor, but do not touch.



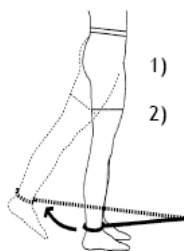
- 1) Lean on wall, feet 12 inches from wall, shoulder width apart.
- 2) Bend knees to 45 - 90 degrees and hold.



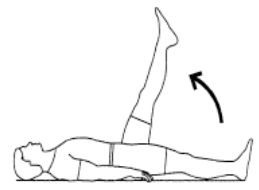
- 1) Stand on step with both feet.
- 2) Step down slowly, leading with uninjured leg.



- 1) Attach elastic to secure object at ankle level.
- 2) With elastic around ankle of involved leg, pull forward keeping knee straight.

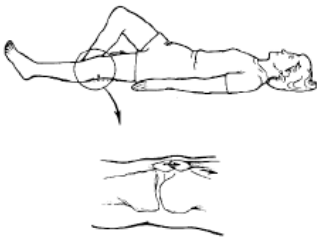


- 1) Attach elastic to secure object at ankle level.
- 2) With elastic around ankle of involved leg, pull leg backward.



- 1) Lie on back with knees straight.
- 2) Keeping back against mat, raise involved leg as high as possible while keeping both knees straight.

## PHASE I - PATELLOFEMORAL PAIN



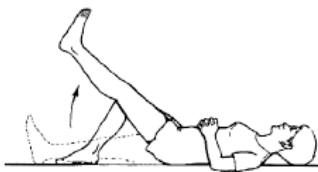
1. Sit or lie on your back with \_\_\_\_\_ leg straight
2. Press the back of your knee downward
3. This will tighten the muscle on top of your thigh and move your kneecap as shown
4. Hold \_\_\_\_\_ seconds
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day

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1. Lie on your back with knee bent to 45 degrees with a roll under \_\_\_\_\_ knee
2. Raise heel off floor until knee is straight
3. Hold \_\_\_\_\_ seconds and slowly lower
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day

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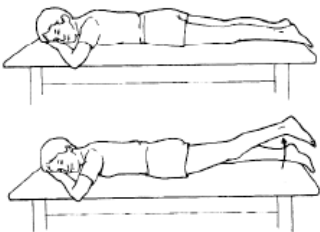
1. Lie on back with \_\_\_\_\_ knee straight and the other knee bent as shown
2. Keep the leg completely straight, then raise it \_\_\_\_\_ inches
3. Hold \_\_\_\_\_ seconds and slowly lower
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day

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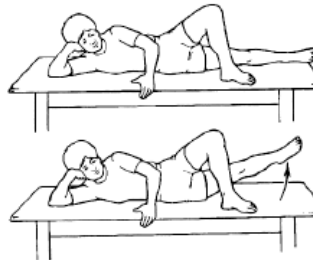


1. Lie on side with \_\_\_\_\_ leg on top
2. Bend lower leg slightly
3. Raise top leg straight up, without letting it come forward
4. Hold \_\_\_\_\_ seconds, slowly relax
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day

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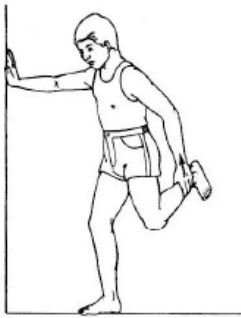
1. Lie on belly
2. Raise \_\_\_\_\_ leg off floor as shown
3. Hold \_\_\_\_\_ seconds, slowly relax
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



1. Lie on side as shown, with \_\_\_\_\_ leg on the bottom
2. Raise leg up toward ceiling
3. Hold \_\_\_\_\_ seconds, slowly relax
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



1. Lie flat on back
2. Slide \_\_\_\_\_ heel toward your buttocks, bending the knee
3. Hold \_\_\_\_\_ seconds and slowly lower
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



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1. Stand holding the \_\_\_\_\_ ankle as shown
2. Bend the knee upward so that you feel a stretch
3. As you bend the knee, make sure the thigh stays in line with your body as shown (don't let it point forward)
4. Hold \_\_\_\_\_ seconds
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



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1. Sit with \_\_\_\_\_ leg straight on bench as shown
2. Lean forward, keeping the back straight, so that a stretch is felt
3. Hold \_\_\_\_\_ seconds
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



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1. Prop \_\_\_\_\_ leg on bench as shown
2. Bend forward at the hip, keeping the knee and back straight so that stretch is felt
3. Hold \_\_\_\_\_ seconds
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



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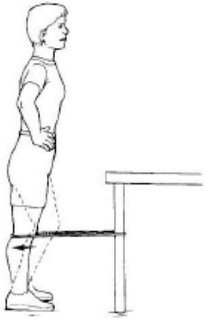
1. Stand with \_\_\_\_\_ side facing wall
2. Cross the \_\_\_\_\_ leg behind the other leg and toward the wall
3. Bend the forward knee slightly and lean your trunk toward the wall until you feel a stretch on the outside of the hip (see arrow)
4. Hold \_\_\_\_\_ seconds
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



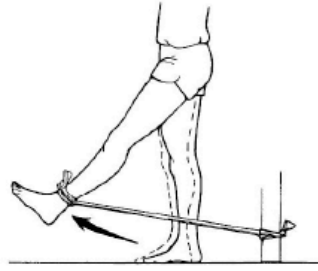
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1. Stand propping \_\_\_\_\_ leg on solid object as shown
2. Lean your trunk forward keeping back straight so that you feel a stretch
3. Hold \_\_\_\_\_ seconds
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day

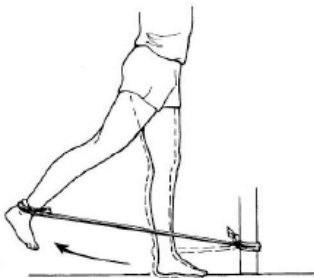
## PHASE I I - PATELLOFEMORAL PAIN



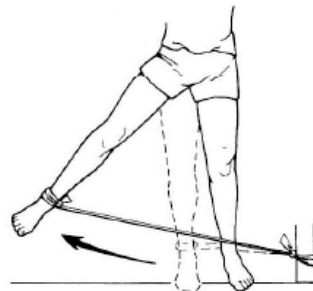
1. Arrange tubing around \_\_\_\_\_ leg as shown
2. Begin with knee bent partway (about 1/3), then slowly straighten knee
3. Slowly bend knee again
4. \_\_\_\_ repetitions, \_\_\_\_ times per day



1. Anchor rubber tubing to solid object and \_\_\_\_\_ ankle
2. Pull leg forward as shown
3. Hold \_\_\_\_\_ seconds, slowly relax
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



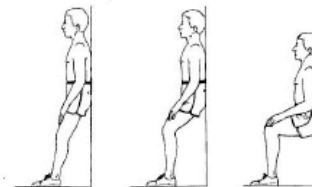
1. Anchor rubber tubing to solid object and \_\_\_\_\_ ankle
2. Lift leg backward as shown
3. Hold \_\_\_\_\_ seconds, slowly relax
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



1. Anchor rubber tubing to solid object and \_\_\_\_\_ ankle as shown
2. Raise hip out to side, without letting it come forward
3. Hold \_\_\_\_\_ seconds, slowly relax
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



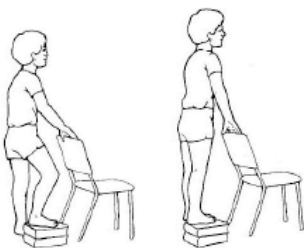
1. Anchor rubber tubing to solid object and \_\_\_\_\_ ankle as shown
2. Stand with toe pointed out to side
3. Now cross the leg in front of your other leg
4. Hold \_\_\_\_\_ seconds, slowly relax
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



1. Stand with back against wall, feet shoulder width apart and 18 inches from wall
2. Slowly slide down wall until you are in a "chair position"
3. Hold \_\_\_\_\_ seconds
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day

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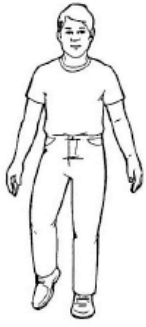
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1. Place involved leg on edge of small step
2. Hold onto solid object for support
3. Step up with \_\_\_\_\_ foot
4. Slowly lower
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



Adjust level of seat on exercise bike to a comfortable level.  
\_\_\_\_\_ minutes on level \_\_\_\_\_



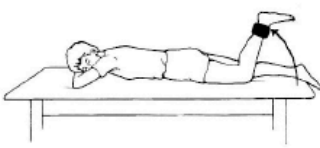
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1. Stand upright
2. Tighten buttocks and abdominal muscles to hold spine stable in neutral throughout the rest of the exercise
3. Lift one leg from the floor, without allowing the spine to move, or weight to shift excessively, balancing on \_\_\_\_\_ leg
4. Hold \_\_\_\_\_ seconds
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



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1. Stand with feet 12 inches apart
2. Raise up slowly onto your toes as high as you can
3. Hold \_\_\_\_\_ seconds
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



1. Lie as shown
2. Place \_\_\_\_\_ lb weight on \_\_\_\_\_ ankle
3. Slowly bend knee
4. Hold \_\_\_\_\_ seconds and slowly lower
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



1. Prop \_\_\_\_\_ leg on bench as shown
2. Bend forward at the hip, keeping the knee and back straight so that stretch is felt
3. Hold \_\_\_\_\_ seconds
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



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1. Stand propping \_\_\_\_\_ leg on solid object as shown
2. Lean your trunk forward so that you feel a stretch
3. Hold \_\_\_\_\_ seconds
4. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day



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1. Stand holding the \_\_\_\_\_ ankle as shown
2. Bend the knee upward so that you feel a stretch
3. As you bend the knee, make sure the thigh stays in line with your body as shown (don't let it point forward)
4. Hold \_\_\_\_\_ seconds
5. \_\_\_\_\_ repetitions, \_\_\_\_\_ times per day

## PHASE I I I - PATELLOFEMORAL PAIN



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### Horizontal Leg Press

Adjust the machine for your height and leg length. Your feet should be shoulder width apart and turned out slightly. Bend your knees so that they pass to the sides of your chest. Pause in this lower position and then straighten your legs again.



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### Squat

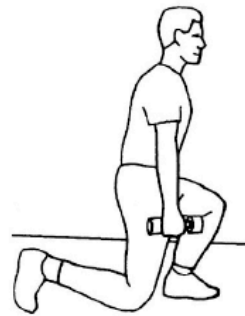
Place a barbell across your shoulders ensuring you are standing upright and looking forwards. Place a small (1/2") wooden wedge beneath your heels. Your knees should be shoulder width apart, and your feet turned out slightly. Keep your back flat and vertical. Bend your knees, ensuring that they pass directly over your foot, until your knees are at 90°. Stand up again.



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### Step Up

Stand in front of a step up box, adjusted so that its top surface comes just below your knee level. Place one foot flat on the step up bench, and then step up fully onto the bench. Step down from the bench with your other leg. Reverse the stepping order after half of your total number of repetitions.

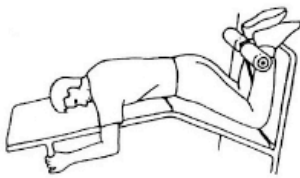


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### Dumbbell Lunge

Grip a dumbbell in each hand, and stand with your feet shoulder width apart. Step forwards and down with your right leg, allowing your left knee to come towards the level of your right foot. Stand straight once again, reverse the feet, stepping forwards with your left leg.





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### Lying Leg Curl

Lie on the leg curl machine with the pads adjusted for your leg length. Your knee caps should be positioned just over the edge of the leg curl bench. Bend your knees until the pads come towards your buttocks, pause in the upper position and then straighten your legs to lower the weight again.



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### Sitting Hip Adduction

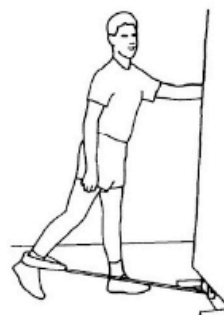
Sit in the machine adjusting the seat back and leg pads for leg length. Press your legs together, pause and then allow your legs to move apart again.



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### Sitting Hip Abduction

Sit in the machine adjusting the seat back and leg pads for leg length. Press your legs outwards into the abducted position, pause and then allow your knees to come together again.



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### Cable Kick Back

Stand in front of a low pulley machine with a sling around your ankle. Hold the supports of the machine, standing tall with both legs straight. Pull your inner leg backwards tightening your buttock muscles as you do so. Ensure no body sway occurs.