

## MIDDLEBURY COLLEGE

### SPORTS MEDICINE

#### Patellofemoral Pain Syndrome (PFPS)

Patellofemoral pain syndrome is characterized by knee pain ranging from severe to mild discomfort originating from the contact of the back of the kneecap (patella) with the thigh bone (femur).

#### Stretching Recommendations

1. Quad Stretch
2. Calf stretch (knee straight, knee bent)
3. Hamstring Stretch
4. Glute Stretch
5. Hip Flexor Stretch

#### Exercises

##### Quad Sets

Sit with your affected leg straight and supported on a table or floor. Place a small rolled-up towel under your affected knee. Your other leg should be bent, with that foot flat on the floor. Tighten your thigh muscles of your affected leg by pressing the back of your knee down into the towel. Hold for 5 seconds and then relax for approx. 10 seconds. Continue this exercise 10-15 times.

##### Straight Leg Raises

Lie on your back on a table or floor with your non-affected knee bent, foot flat on the floor. Your affected leg should be straight. Tighten your thigh muscles on your affected leg by pressing the back of your knee towards the floor. Keeping your thigh muscles tight and leg straight, lift your leg up so that your heel is approx. 12 inches off the floor. Hold for 5 seconds, then slowly lower your leg to starting position and relax thigh muscles. Rest for up to 10 seconds. Repeat 10-15 times.



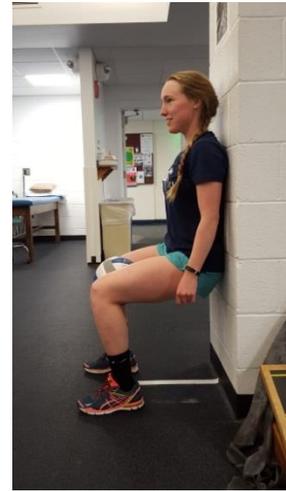
## Straight Leg Raises with affected leg rolled out

(Same as above with the leg externally rotated)



## Wall slides with Ball Squeeze

Stand with your back against a wall and your feet about shoulder-width apart. Your feet should be about 12 inches away from the wall. Put a ball (soccer ball size) between your knees. Then slowly slide your back down the wall until your knees are bent 30-degrees. Tighten your thigh muscles, by squeezing the ball between your knees. Hold this position for 10 seconds and then stop squeezing. Rest for up to 10 seconds and continue. Repeat exercise 10-15 times.



## Clam Shells (add Thera-band)

Lie on a table or floor on your non-affected side with your knees and ankles together, knees bend at about 90-degrees. Open your legs by using your upper glut muscle. Make sure you keep your back straight and do not rock your pelvis, hips stay stacked on top of each other. Keep this movement slow and controlled. Complete 3 sets of 10 repetitions. Switch and do the same exercise with the opposite side. \*For more advance version include a loop of Thera-band around your thighs right above the knees for added resistance.



## Lateral Slides

With your knees slightly bent in a squat-like position, take ten steps to one side. While still facing the same direction, take another 10 steps back to your starting position. Continue to do this 10 times. \*More advanced version includes a Thera-band around your ankles. Band should be tight enough to provide constant resistance during the entire movement.



## Monster Walks (forwards and backwards)

Place a Thera-band around both ankles. There should be enough tension that the band is tight when your feet are shoulder width apart. Keeping your feet shoulder width apart throughout whole exercise, take short steps forward alternating your left and right foot. After several steps (10-20), do the same thing going backwards to where you started.



## Side-lying Arch

Laying on a table or floor, on your side with your hips stacked. Do a straight leg raise, hold it the up position and then move your leg slowly in an arch-like movement back and forth 5-10 times and then slowly lower leg back down to starting position. Start with one set of 10 and then increase as exercise becomes easier. Switch over and lay on opposite side and repeat.





### Single Leg Balance with Star Pattern (Excursions or Star Exercise)

Stand on injured leg without any support. Do a mini single leg squat and reach the uninjured leg to each point of the star from the line in front of you to the line directly behind you. You end up touching half the points of the star.

