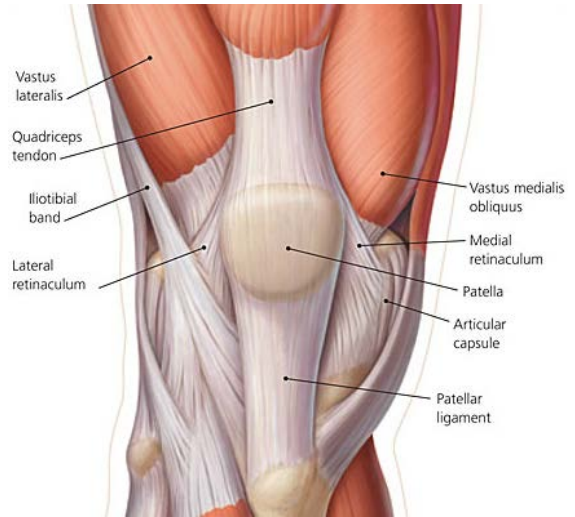




Patellofemoral Pain *PROTOCOL*

BACKGROUND

- **Description**
 - Commonly occur in runners and cyclists
 - Pain can arise in and around the kneecap, tendons or the soft tissue around the knee
- **Causes:**
 - Weakness in quadriceps
 - Tight hamstring, calf or IT band
 - Poor foot posture or footwear
 - Weak hip abductors
- **Common Signs and symptoms**
 - Pain in the front of the knee, increased with running or jumping activities
 - Pain may be deep or under the kneecap
 - Mild swelling
 - Tenderness around the patella
- **Treatment**
 - Most often the cause of the pain is soft tissue and can be treated with a program of rest, ice, activity modification, stretching and strengthening of the knee.



- Other treatments may include patella taping, foot orthotics, a patella stabilization brace, or in severe cases possibly surgery

Stretching exercises



Hamstring Stretching 1

Patient lies flat on their back with one leg through the door jam
 One leg is placed up against the wall
 Slowly move the body closer to the wall until a stretch is felt
 Continue to move closer as flexibility increases

Frequency: 1 set 3-5 min. 2-3 times a day.

Goal: *Increase hamstring flexibility*

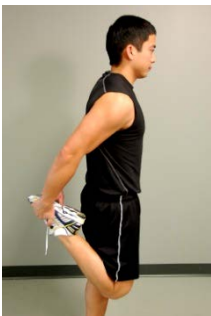


Hamstring Stretching 2

Patient lies on flat on their back
 With a towel wrapped around the foot, slowly raise leg
 Continue until a stretch is felt and hold.
 Try to keep opposite leg flat on the ground.

Frequency: 3 sets of 60 secs. 2-3 times a day.

Goal: *Increase hamstring flexibility*



Quadriceps Stretches

Pic 1: Kick back leg and slowly pull heel towards buttock
 Try to keep knees close to each other and abdominals contracted

Pic 2: Begin with foot rested on a chair/bench
 Slowly lower down until a stretch is felt

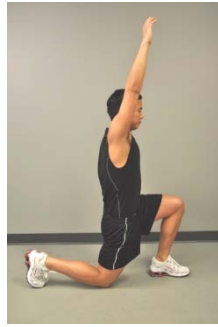
Frequency: 3 sets of 60 seconds 2-3 times a day.

Goal: *Increased quadriceps flexibility*



Patellofemoral Pain *PROTOCOL*

Stretching exercises



Hip Flexor Stretch

Begin in a lunge position with knee bent to 90 degrees
Contract abdominal muscles to maintain back posture
Slowly move the hips forwards until a hip stretch is felt
Raise arm to increase stretch. **Keep abs contacted!**

Frequency: 3 sets of 60sec 2-3 times per day
Goal: Increase hip flexor flexibility



IT band Stretch

Stand next to a rail or stable object and grasp with hand
Step with the leg closest to the rail in front of the other leg
Slowly push hips away from the rail until a stretch is felt
Keep body straight during this exercise
Widen the distance during leg cross to increase the stretch

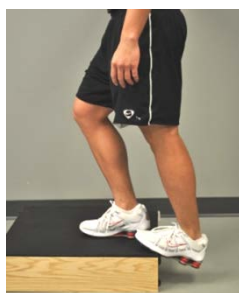
Frequency: 3 sets of 60 sec. 2-3 times per day
Goal: Increase IT band flexibility



IT band Mobilization

Lay on a foam roller with top leg crossed over.
Keep body in a straight line, do not bend hips.
Roll from the hip to just above the knee.
Use the other leg and hand to offload pressure.
This exercise may cause some bruising to the thigh.

Frequency: 3 sets of 10 reps. 2-3 times per day
Goal: Increase IT band flexibility



Calf Stretch 1

Stand on a step with the ball of the foot on the edge.
Slowly lower heel towards the ground.
This stretch should be performed with the knee straight and slightly bent.

Frequency: 3 sets of 60 sec. 2-3 times per day
Goal: Increase calf flexibility



Calf Stretch 2

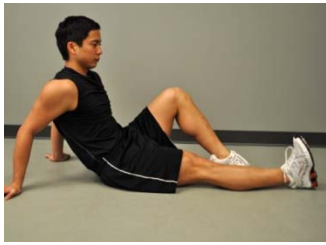
Stand with the ball of the foot against the wall
Slowly move body towards the wall until stretch is felt
This stretch should be performed with the knee straight and slightly bent.

Frequency: 3 sets of 60 sec. 2-3 times per day
Goal: Increase calf flexibility



Patellofemoral Pain *PROTOCOL*

STRENGTHENING EXERCISES:



Straight Leg Raise

Begin in a seated position, resting back on hands.
Flex quad muscles
Slowly raise leg up 24 inches and hold 5 sec.
Slowly lower down.

Frequency: 3 sets of 15 reps. 3 times per week.
Goal: *Improved quadriceps strength.*



Wall Slides

Stand with feet 18in. in front of a wall
Feet should be shoulder width apart
Slowly lower to 45 degree of knee flexion
Patient can also squeeze a physioball between their knees.

Frequency: 3 sets of 45-60 sec. Three times per week
Goal: *Improve quad and hip strength*



Single Leg Half Squat

Stand on one leg, next to a stable object like a chair
Keep knee in line with the foot at all times
Slowly bend knee to 45 degrees and hold for 3 sec.
Return to starting position by pushing through the heel.
Work towards performing this exercise without assistance of a chair

Frequency: 3 sets of 15 reps. Three times per week
Goal: *Improve lower leg strength and balance*



Terminal Extension

Attach theraband to a stable object at knee level
Place theraband around the leg just above the knee
Step back until theraband is taut with knee slightly bent
Standing up straight, slowly straight leg out by flexing quad
Hold 5 seconds

Frequency: 3 sets of 15 reps. Three times per week
Goal: *Increase VMO Quad strength*



Patellofemoral Pain *PROTOCOL*

STRENGTHENING EXERCISES:



Clam Shell

Patient lies on their side with knees bent 90 degrees.

Keeping feet together, slowly raise knee towards the ceiling

Squeeze gluteal muscles.

Hold 5 sec. Repeat 10-15 times

Frequency: 3 sets 3 times per week.

Goal: *Increase glute medius strength*



Double Leg Bridge

Lie on back with both knees bent 90 degrees on the floor.

Slow raise hips up towards the ceiling

Hold 5 sec. Repeat 10-15 times

Frequency: 3 sets. 3 times per week

Goal: *Increase gluteal strength*



Single Leg Bridge

Lie on back with one leg knee bent 90 degrees on the floor.

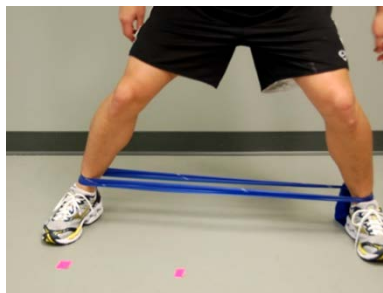
Pull the other knee towards chest.

Maintaining this position, push foot into ground and raise hips up

Hold 5 sec. Repeat 10-15 times

Frequency: 3 sets. 3 times per week

Goal: *Increase gluteal strength*



Lateral Slides

Place theraband around both ankles. Stand with knees and hips slightly bent.

Take a 6-8 inch step to the side, followed by the other foot.

Repeat 10 times both directions

Frequency: 3 sets 3 times per week

Goal: *Increase hip strength*