



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



1. Sit with leg propped as shown
2. Relax, letting the leg straighten
3. Lean forward, keeping the back straight
4. Hold _____ seconds
5. _____ repetitions, _____ times per day

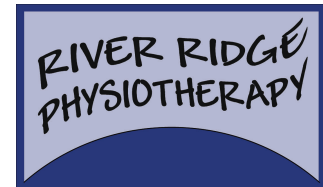


1. Lie on back with _____ knee straight and the other knee bent as shown
2. Keep the leg completely straight, then raise it _____ inches
3. Hold _____ seconds and slowly lower
4. _____ repetitions, _____ times per day



1. Stand with both feet at shoulder width apart as shown
2. Slowly bend knees partway (about 1/3)
3. Slowly straighten knees again
4. _____ repetitions, _____ times per day

PATELLOFEMORAL SYNDROME



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Patellofemoral Syndrome

Injury Description

This syndrome is caused by an irritation of the under-surface of the patella (knee cap). The pain is usually a dull pain that seems to come from under the knee cap. It is most common with deep knee bend sports. Often there is pain with squatting, walking up and down stairs, and bike riding.

Pathology

The patella is a moving part which glides up and down a groove in the femur, or thigh bone, when you bend and straighten your knee. The pain is caused by pressure between your patella and your femur which generally increases as you bend your knee.

The irritation of the patella causes an inflammation which subsequently causes the pain. Continued irritation can lead to a roughening of the undersurface of the patella, a condition called chondromalacia. Patellofemoral syndrome and chondromalacia are not arthritis.

Predisposing factors

1. A patella which is not symmetrical
2. Overuse
3. Flat (pronated) feet
4. Weak inner thigh muscles
5. Tight outer knee structures
6. Alignment problems of the hips and legs
7. Previous injury to the knee

Treatment

- Treatment is based on two principles:

1. Reducing the inflammation
2. Improving the dynamics of the patellofemoral relationship

Modified Activity

When the knee is painful or swollen, you must rest it. Let the pain be your guide. If you continue activities while experiencing pain you are aggravating your condition. Mild discomfort or ache is not a problem but definite pain is a cause for concern.

Ice

Apply an ice pack to your knee for 15 minutes several times a day and after any sporting activity.

Physiotherapy

There are several techniques that can be used to reduce inflammation. Exercises are used to stretch and strengthen the thigh muscles. These are important for controlling patellar tracking in the femoral groove. Physiotherapy is also important for preventing the problem from recurring.

Medication

Anti-inflammatory pills may be prescribed to reduce inflammation.

Surgery

In rare cases surgery may be indicated.

Recommendations

Knee Position

There is very little pressure between the patella and the femur when the leg is straight or slightly bent. The best activities are ones which limit the knee to a range of between 0 degrees (straight) and 45 degrees (1/4 squat).

Sports

Good - Swimming, Slow jogging, Walking, Skating or Roller Blading, Cross-country skiing.

Moderately good - Easy cycling, Soccer, Baseball, Hockey, Downhill skiing, Aerobics

Aggravating - Volleyball, Basketball, Running, Football, Racquetball, Squash.

- ♦ When your knees hurt, you should avoid all but the good sports. Total rest may be required. When your knees get better you should be able to enjoy all sports.

Braces

There are a number of different braces and supports available to help the patella stay in its track and to reduce pressure on the patella. Ask your physiotherapist about these braces.

Taping

It is possible for your physiotherapist to show you how to tape the patella to help it track better in the femoral groove.

Exercises

The attached exercises when done regularly and correctly almost always dramatically improve this condition.