

# Patello-Femoral Syndrome (Chondromalacia)

More commonly known to us as knee pain!



## **Prevent/Aid Knee Pain (Patello-Femoral Syndrome)**

### **About Patello-Femoral Syndrome**

Knee pain is a very common problem among people who are active in sports. Studies have shown that the so-called patellofemoral pain syndrome comprises up to 50% of overuse injuries. This syndrome is caused by an irritation of the undersurface of the patella (kneecap), which is normally smooth. The irritation can lead to a roughening of the patella under surface. This condition is called chondromalacia.

The patella glides up and down in a shallow groove formed by the femur (thigh-bone) and its covering ligaments. The pain occurs when increasing tension gradually increases the pressure between the patella and femur. The irritation and roughening of the patella cause inflammation that causes pain. Patellofemoral pain syndrome and chondromalacia are not arthritis.

### **Contributing Factors**



When the patella is not in the center in the groove of the femur, imbalances resulting in wear and tear. This is poor alignment can be identified on special knee x-rays.

Overuse: especially the pounding shocks absorbed during jogging, hiking, or downhill running.

Knock-knees

Abnormal twisting or rotation of the lower leg called tibial torsion.

Flat feet (pronated)

Weak front and inner thigh muscles

Previous injury to the knee

Family tendency

## Obesity

### **Treatment**

Treatment has two objectives: to reduce the inflammation and to improve the alignment between the patella and the femur.

#### Rest

When the knee is painful and swollen, you must rest it. Avoid stair climbing, keep your leg straight while sitting and avoid squatting. Let pain be your guide. You are aggravating the condition if you continue activities while experiencing pain. Mild discomfort or ache is not a problem but definite pain is cause for concern.

#### Ice

Ice your knee for 30 minutes two or three times a day and after any sporting activities. Apply a plastic bag of crushed ice over a towel. This reduces inflammation and pain.

#### Medication

Your doctor may prescribe anti-inflammatory/analgesic medication (in tablet form) to relieve pain and reduce the inflammation.

#### Physical Therapy

A physical therapist or your doctor can recommend exercises to reduce the inflammation. You can also use exercise to stretch, strengthen, and balance the thigh muscles that control the patella in the groove. When thigh muscles are strong and balanced, the patella will move through the groove accurately and with less pressure.

#### Surgery

Some cases may indicate surgery. This often can be performed with an arthroscope (an instrument that allows a physician to see inside the joint with a light). In rare cases, repositioning of the patella by open-knee surgery is required.

### **Adjustments**

#### Knee

Your doctor may prescribe a brace or support to help keep the patella in the track or groove.

## Foot

The structure of your foot may alter the relationship between your patella and femur. Your doctor may prescribe specific shoes or occasionally orthoses (shoe inserts) to help resolve your problem. Consult your physician about new materials designed to fit into your shoes to help absorb the impact as your foot hits the ground. They are available at medical-supply and stores that carry running shoes.

## Sports

You minimize the pressure between the patella and femur when the leg is straight or only slightly bent. The best activities are ones that limit the range of knee motion. Use your judgment. When your knees hurt, avoid sports that may aggravate knee problems. Total rest may be required. When your knees get better after treatment, you should be able to enjoy many sports.

### Sports that are the easiest on the knees:

Swimming  
Slow jogging  
Walking  
Skating  
Cross-country skiing

### Sports that are questionable:

(These may be all right for some but not for others. You will have to be the final judge as to what is right for you.)

Cycling (with the seat high and avoid hills)  
Baseball  
Hockey  
Skiing (downhill)  
Tennis

### Sports that may aggravate knee problems:

(The following sports require deep knee bends and twists that stress the knee and are most likely to aggravate your condition).

Volleyball  
Basketball  
Soccer  
Running (sprints and downhill)  
Football

Racquetball  
Squash

## PREVENTATIVE/MAINTAINENCE EXERCISES

Exercising builds up the muscles that stabilize the kneecap. Both stretching and strengthening exercises may be helpful. Try to do each exercise two times a day, or ask your doctor for his/her advice.

### **\*NOTE: Strengthening Exercises**

Stay away from exercises that require you to bend your knee or otherwise aggravate your condition.

### **Stretches**

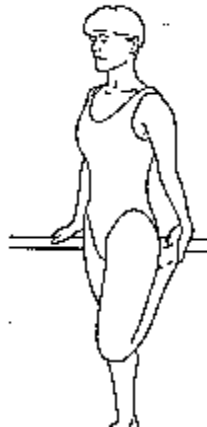
When you stretch, always stretch slowly without bouncing, until you feel your muscles stretch moderately. You should not feel pain.

### **Single Quadriceps Stretch**

Standing with your back straight, pull your foot back until your thigh muscle stretches moderately. Push down and back with your knee. Hold 15 seconds and relax. If you feel pain, discontinue. Repeat three times, two times a day.

UPPER LEG - 2  
Quadriceps

Pull heel toward buttocks  
until a stretch is felt  
in front of thigh.  
Repeat to other side.



Hold 15 seconds.  
Repeat 3 times.

## **Hamstring Stretch**

You can either sit or stand for this exercise. Do whichever is most comfortable for you.

### Sitting

Sit on the floor as shown. With back straight, lean forward from the hip and reach down over your leg until you feel your muscles stretch. Hold ten seconds and relax.



### Standing

Prop up injured leg, knee locked. Bend standing leg slightly. Place hands on lower thigh just above the knee. With back straight, bend forward from the hip until you feel a stretch under your thigh. Hold ten seconds and relax. Repeat three times, two times a day.



## **Static Quads**

Sit on the floor with a pillow under your knee. Push your thigh into the floor. As your heel rises, bend your toes toward your body and hold five seconds. Change legs or do both at once. Repeat 20 to 30 times, two times a day.



### The "T" Exercise

With a two-pound weight around your lower leg, lock your knee and raise your leg 12-inches. Draw a "T" with your foot. Repeat with the other leg. Gradually increase weight (up to five pounds) as each weight becomes easier. If you are beginning exercise treatment, you may wish to add this exercise four to six weeks after beginning exercise therapy. Do not include it at all if you suffer pain in the movements. Repeat 10 to 20 times on each leg, two times a day.



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