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## Patellofemoral Syndrome: Causes, Symptoms, and Treatment

**Patellofemoral Syndrome**, also known as **Runner's Knee**, is a common cause of knee pain, particularly in individuals who engage in activities that involve repetitive knee movements, such as running, squatting, or climbing stairs. It occurs when the cartilage under the kneecap (patella) becomes irritated due to poor alignment or overuse, leading to pain and discomfort at the front of the knee.

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### What is Patellofemoral Syndrome?

Patellofemoral Syndrome refers to pain around or behind the kneecap that arises from problems with how the patella tracks in the femoral groove (the end of the thighbone). This can cause excessive pressure on the knee joint, leading to irritation of the cartilage or surrounding tissues.

While it's often referred to as **Runner's Knee**, this condition can affect anyone, not just athletes, and can be triggered by a variety of factors including overuse, muscle imbalance, or improper alignment of the knee joint.

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### Causes of Patellofemoral Syndrome

Patellofemoral Syndrome can be caused by several factors, including:

- **Overuse:** Repetitive movements such as running, cycling, or jumping can place stress on the knee joint, particularly if the muscles supporting the knee are weak or imbalanced.
- **Muscle Imbalance:** Weakness in the thigh (quadriceps) or hip muscles can cause the kneecap to track improperly, leading to increased stress on the knee.
- **Poor Alignment:** If the kneecap doesn't move smoothly in its groove, it can rub against the thighbone and cause pain.

- **Foot Problems:** Flat feet or improper footwear can alter the way pressure is distributed through the leg, leading to knee issues.
  - **Injury:** Direct trauma to the knee, such as a fall or blow, can cause damage to the cartilage or tissues around the patella.
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## Symptoms of Patellofemoral Syndrome

The primary symptom of Patellofemoral Syndrome is **pain at the front of the knee**, particularly during activities that involve bending the knee, such as:

- Running or jogging
- Walking up or down stairs
- Squatting or kneeling
- Sitting for long periods with the knees bent (sometimes called "theatre sign")

Other common symptoms include:

- **Grinding or popping sounds:** You may feel or hear a grinding or popping sensation in the knee during movement.
  - **Swelling:** Mild swelling around the kneecap may occur after activity.
  - **Instability:** The knee may feel weak or as if it might give way during activity.
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## Diagnosis

A proper diagnosis of Patellofemoral Syndrome typically involves:

- **Physical Examination:** A healthcare professional will assess your knee movement, check for tenderness around the kneecap, and evaluate the alignment of your leg.
  - **Imaging Tests:** X-rays or MRI scans may be used to rule out other conditions, such as cartilage damage, fractures, or ligament injuries.
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## Treatment Options

Treatment for Patellofemoral Syndrome aims to relieve pain, improve knee alignment, and strengthen the muscles that support the knee. The treatment plan may include:

### 1. Rest and Activity Modification

- **Rest:** Avoid activities that put excessive strain on the knee, such as running or jumping, until the pain subsides.
- **Activity Modification:** Substitute high-impact activities with low-impact exercises, such as swimming or cycling, that are gentler on the knees.

## 2. Physiotherapy

- **Strengthening Exercises:** A physiotherapist will guide you through exercises that strengthen the quadriceps, hamstrings, and hip muscles to support proper knee movement.
- **Stretching:** Regular stretching of the muscles around the knee and hips can improve flexibility and reduce tension on the patella.
- **Taping or Bracing:** Patellar taping or using a knee brace can help realign the kneecap and reduce pain during activities.

## 3. Orthotics

- For individuals with **flat feet or poor foot alignment**, custom-made orthotics (shoe inserts) can help redistribute pressure on the knee and improve overall leg alignment.

## 4. Pain Relief

- Over-the-counter **anti-inflammatory medications** (NSAIDs), such as ibuprofen, can help reduce pain and inflammation.
- **Ice therapy:** Applying ice to the knee after activity can help reduce swelling and discomfort.

## 5. Surgical Intervention

- Surgery is rarely needed for Patellofemoral Syndrome. However, in cases where conservative treatment doesn't alleviate the symptoms, surgical options such as **arthroscopy** may be considered to realign the kneecap or repair damaged cartilage.

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## Prevention Tips

To prevent Patellofemoral Syndrome or minimise the risk of recurrence:

- **Strengthen supporting muscles:** Focus on exercises that strengthen the quadriceps, hamstrings, and hips to improve knee stability.
- **Use proper footwear:** Wearing supportive shoes that match your foot type can reduce the strain on your knees, especially during high-impact activities.

- **Maintain proper form:** When running, walking, or exercising, ensure that your form is correct to prevent unnecessary stress on the knees.
  - **Warm up and stretch:** Always warm up before engaging in physical activity and incorporate stretching into your routine to maintain flexibility.
  - **Gradually increase activity levels:** Avoid overloading your knees by gradually increasing the intensity and duration of your physical activities.
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### **When to See a Doctor**

If you experience persistent knee pain that does not improve with rest or self-care measures, or if the pain interferes with your daily activities, it's important to seek medical advice. Early diagnosis and treatment of Patellofemoral Syndrome can help prevent the condition from worsening and reduce the risk of long-term complications.

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### **Why Choose Northampton Hip and Knee Clinic?**

At **Northampton Hip and Knee Clinic**, we specialise in diagnosing and treating conditions like Patellofemoral Syndrome. Led by **Mr Pierre Nasr**, an experienced Consultant Orthopaedic Surgeon, our clinic provides:

- **Expert care:** Specialising in hip and knee conditions, including complex knee problems.
  - **Comprehensive treatment plans:** Tailored to your individual needs, with an emphasis on non-invasive treatments where possible.
  - **Advanced technology:** Ensuring accurate diagnosis and effective treatment of knee conditions.
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### **Get Help Today**

If you're experiencing knee pain and think you might have **Patellofemoral Syndrome**, don't hesitate to reach out. **Contact Northampton Hip and Knee Clinic** today to schedule a consultation and take the first step towards pain relief and recovery