

Knee cap pain (patellofemoral joint pain)

Information for patients

This leaflet has simple information and advice on how to manage your knee cap pain. If you have any queries or concerns please contact your GP.

What is Patellofemoral Joint Pain (PFJP)?

Patellofemoral Joint Pain (PFJP) refers to discomfort on the front of the knee, close to the knee cap (patella).

Mechanism of injury

This type of injury may be caused by imbalances in the muscles surrounding the knee, which affect the movement and load on the knee cap. Factors that increase the rate of PFJP include frequently completing large amounts of activity, sudden increases in activity levels or a change of training programme, and a sedentary (inactive) lifestyle.

Symptoms

You may develop pain at the front of your knee, around your knee cap. Pain can also radiate up the thigh, behind the knee or down the shin. Activities that commonly aggravate symptoms include kneeling, squatting, running, using stairs or prolonged sitting. You may notice some grinding or grating sounds from your knee – this is called crepitus and is quite normal for this condition and does not mean that harm is being done when moving the knee.

Management

- **Ice:** a cold pack (ice pack or frozen peas wrapped in a damp towel) can provide short-term pain relief. Apply this to the sore area for up to 15 minutes, every three hours and up to four times a day, ensuring the ice is never in direct contact with the skin.
- **Graded loading:** slowly reduce the activities that are aggravating your symptoms until you are able to complete the activity without discomfort. Once you have done this, you can then gradually increase the activity in a slow graded manner, increasing load once every 2 to 3 weeks.
- **Painkillers:** pain relief can help manage the discomfort in the short term. Normally painkillers bought from a pharmacist will help. If you have any questions please speak to a pharmacist.
- **Footwear:** supportive footwear or shoes with no heel can help reduce the pain in the early stages.

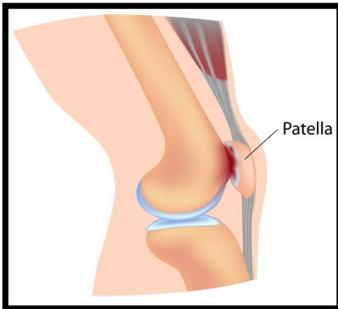
- Exercise: you should complete specific exercises that aim to increase the strength of your knee. This will help with the healing process and help you return to activities. Please see below for suggestions of a graded exercise programme.

Follow-up

You do not routinely require physiotherapy for this type of injury. Most people find they improve with time and simple exercises. If your knee pain does not get better after 6 to 12 weeks then you may benefit from physiotherapy. We recommend you contact your GP to refer you to your local physiotherapy department.

Healing

This type of injury can take approximately 3 to 6 months to heal.



Please follow the rehabilitation plan shown below:

Weeks since injury	Rehabilitation plan
0 to 2	<ul style="list-style-type: none"> ✓ Use ice and elevation to help swelling ✓ Begin the 'stage one exercises' on page 3 of this leaflet ✓ Follow the management advice as per above
2 to 6	<ul style="list-style-type: none"> ✓ Once your pain has begun to settle, start the exercises below labelled 'stage two exercises' page 4.
6 to 12	<ul style="list-style-type: none"> ✓ Once you are able to complete 'stage two exercises' then progress onto the next stage. You may be able to progress onto these earlier than 6 weeks if your pain has reduced. Sometimes it can take longer than 6 weeks to progress.
12 to 24	<ul style="list-style-type: none"> ✓ Once you are able to complete 'stage three exercises' then progress onto the next stage. You may be able to progress onto these earlier than 12 weeks if your pain has reduced. Sometimes it can take longer than 12 weeks to progress. ✓ When you can complete the 'stage four exercises' without any discomfort you can gradually return to jogging. Starting off at a short distance and a slow speed, gradually increasing your distance without increase the speed.

Initial advice

Cold packs

A cold pack (ice pack or frozen peas wrapped in a damp towel) can provide short-term pain relief. Apply this to the sore area for up to 15 minutes, every few hours ensuring the ice is never in direct contact with the skin.

Rest and elevation

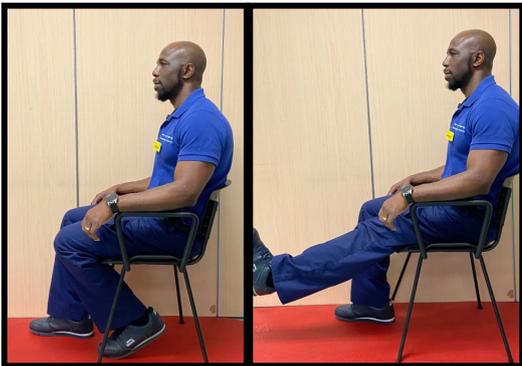
Try to rest the knee for the first 24 to 72 hours (1 to 3 days) to allow the early stage of healing to begin. Raise your ankle above the level of your hips to reduce swelling. You can use pillows or a stool to keep your foot up.

Early movement and exercise

Early weight bearing (putting weight through your injured limb) helps increase the speed of healing. Try to walk as normally as possible as this will help with your recovery.

Stage one (3 to 4 times a day)

Seated knee flexion and extension:



Position yourself sitting on a chair.

Slowly straighten your knee so that it is fully extended and you can feel the muscles on the front of your thigh contracting.

Slowly then bend your knee so that your foot moves backwards under your chair, you will then feel the muscles on the back of your thigh contracting.

Repeat the whole movement 12 to 16 times.

Straight leg raise:



Sit or lie on your back with your leg straight.

Bend the knee of your unaffected leg. Pull your toes of your affected leg towards you and keep your knee straight. Slowly lift your foot 10cm keeping your knee straight.

To make this harder you can hold your leg in the position for 5 seconds.

Repeat this 8 to 12 times, each leg.

Balance:



Level 1: Stand holding onto a chair or firm surface. Practice standing on your previously injured ankle for up to 30 seconds. Once you have achieved this move to level 2.

Level 2: Once standing on one leg attempt to release your grip on the chair/ surface and hold for up to 30 seconds. Once you have achieved this move to level 3.

Level 3: Once standing freely on one leg without support you can attempt to close your eyes for up to 30 seconds.

Stage two exercises

Once you can easily complete the above exercises without discomfort then move onto the exercises below.

Sit to stand:



Position yourself sitting in a chair with your arms across your chest and your feet flat on the floor, shoulder width apart.

Slowly lean forwards and stand up without using your arms. Once in a standing position slowly sit back down to the chair in a controlled manner.

Repeat this 8 to 12 times, three times a day.

Step up:



Stand facing a step.

Step up onto the step with your affected limb. Lift your other foot off the floor, then place it next to the other foot. Slowly lower your unaffected foot towards the floor then bring your affect leg/ foot down. Repeat for the opposite limb.

Repeat this 8 to 12 times, three times a day.

Developing dynamic ankle control required for sports:



Level 1: Walk on the spot on a soft surface, for example, a cushion under a mat. Look straight ahead while staying upright.

Level 2: Attempt to stand on one leg on the uneven surface holding it for up to 30 seconds. Trial the exercise using your good leg first.

Level 3: Attempt level 2 exercises but closing your eyes. Again try the good one first to see how hard it is.

Developing core control required for sports

Level 1: Stand with one foot in front of the other, with your hands together. Swing your arms in a figure eight in both directions for 1-2 mins or as able.

Level 2: As level 1, but bring your feet so they are touching toe to heel.

Level 3: As level 1/2 but with your eyes closed.

Stage three exercises

Once you can easily complete the above exercises without discomfort then move onto the exercises below.

Step down:



Start by standing on a step, facing down the steps.

Keep one foot on the step, letting the other hang loosely off the step. Slowly start to lower your hanging foot towards the floor by bending the knee of the standing leg (keeping your hips level at all times, ensuring that the knee stays above your ankle and is not moving toward the other knee), then return to the starting position. Repeat for the opposite limb.

Repeat this 8 to 12 times, three times a day.

Single leg sit to stand:



Position yourself sitting in a chair with your arms across your chest and your affected limb foot on the floor and your unaffected leg elevated off the ground.

Without the use of your arms (and without moving your legs) lean your body forward until your nose is above your knee, then stand up. Slowly lower yourself back into the chair again without the use of your hands.

Stage four exercises

Once you can easily complete the above exercises without discomfort then move onto the exercises below.

Jumping:



Level 1: Position yourself on a firm surface with your feet shoulder width apart. Practice jumping on the spot, landing softly and quietly to increase your ankle control.

Complete this 8 to 12 times for three sets, every other day. Once you have achieved this with minimal or no discomfort then move to level 2.



Level 2: Position yourself on a firm surface, standing on one foot. Practice hopping on the spot, landing softly and quietly to increase your ankle control.

Complete this for 30 to 60 seconds for three sets, every other day. Repeat with the other foot. Once you have achieved this with minimal or no discomfort then move to level 3.

Level 3: Position yourself on a firm surface, standing on one foot. Practice hopping forwards and then backwards, landing softly and quietly to increase your ankle control. Complete this for 30 to 60 seconds for three sets, every other day. Repeat with the other foot. Once you have achieved this with minimal/nil discomfort you can then practice hopping side to side.

Sharing your information

We have teamed up with Guy's and St Thomas' Hospitals in a partnership known as King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas'. To make sure everyone you meet always has the most up-to-date information about your health, we may share information about you between the hospitals.

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help

and advice if you have a concern or complaint that staff have not been able to resolve for you. The PALS office is located on the ground floor of the Hambleton Wing, near the main entrance on Bessemer Road - staff will be happy to direct you.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS

Tel: 020 3299 3601

Email: kch-tr.palsdh@nhs.net

You can also contact us by using our online form at www.kch.nhs.uk/contact/pals

If you would like the information in this leaflet in a different language or format, please contact PALS on 020 3299 1844.