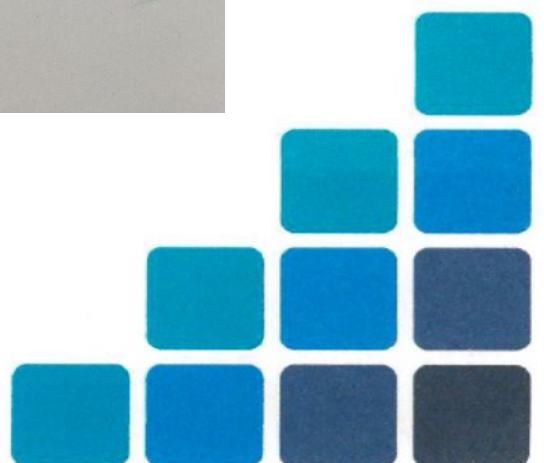




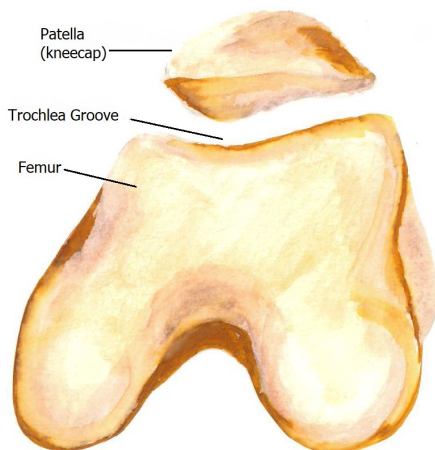
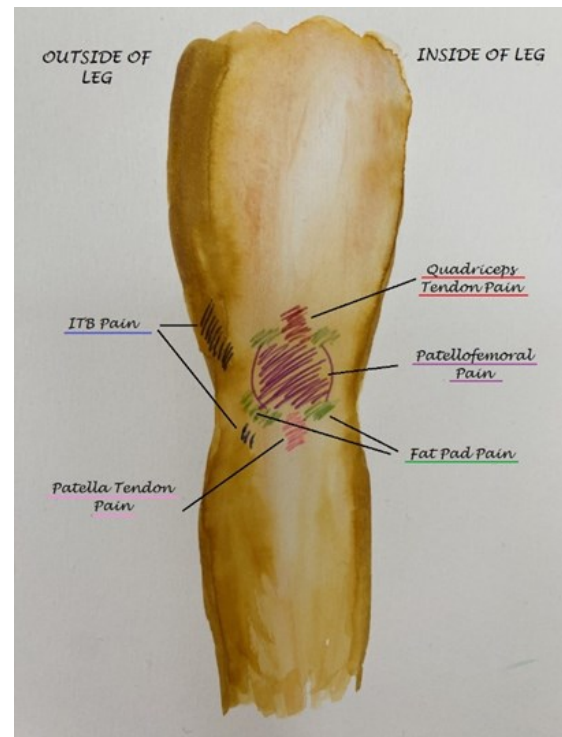
PATELLOFEMORAL PAIN

Information for patients



What is Patellofemoral Pain (PFP)?

Patellofemoral Pain (PFP) is an umbrella term for pain experienced at the front of your knee; around or under your knee-cap (patella). Terms such as "Anterior Knee Pain", "Patellofemoral Pain Syndrome", "Chondromalacia Patella" or "Runner's Knee" may also be used. Other tissues around the knee-cap such as the Fat Pad, Quadriceps tendon, Patella Tendon and the Iliotibial Band (ITB) can also cause pain. PFP is common and up to 22.7% of the UK population may be affected at any one time (Smith et al., 2018).



How should the Patellofemoral Joint work?

The Patella is a "Sesamoid" bone. A Sesamoid Bone is one that is located within a tendon; in this case, the Quadriceps tendon. The patella should sit and smoothly slide in a matched groove in the thigh bone (femur). It glides upwards as we straighten our knee and descends as we bend or flex our knee. Our Quadriceps (thigh muscles), help to control the movement of our patella, whereas our Gluteal Muscles (in our buttocks) help to control the movement of the thigh bone (femur).

The anatomy of the Patellofemoral joint together with the surrounding muscles are designed to evenly distribute everyday pressures and loads across the joint. This aims to avoid an area taking too much pressure, which could contribute to "overload" and pain.

What are Patellofemoral symptoms and what activities might make symptoms worse?

PFP can be very frustrating and can limit or interfere with work, leisure and sporting activities to varying levels. Symptoms include:

- Pain. This can be dull and aching or sharp or a combination.
- Crepitus or "noisy knees". This can include noises such as grating, grinding or clicking. Although noises can be worrying and unpleasant to listen to, most "crepitus" is painfree and harmless. These sounds can be entirely unrelated to any damage or harm. If you would like more information on crepitus you can visit <https://running-physio.com/crepitus>
- Mild swelling or "puffiness" around or under your kneecap.
- A sensation of, or actual giving way of your knee.



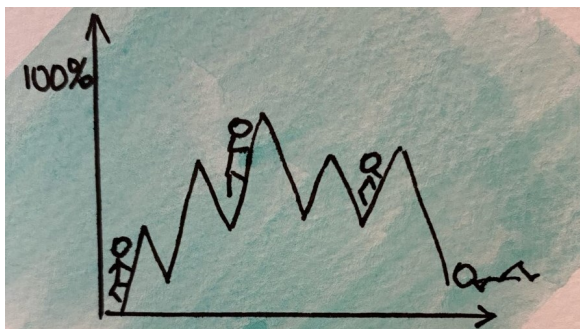
Symptoms are often experienced during or after the following activities:

- prolonged sitting
- kneeling
- going up or down stairs
- squatting
- jumping
- running (especially on slopes)

What causes PFP?

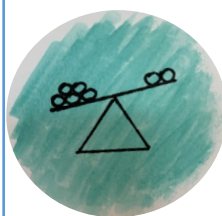
The causes and contributing factors in PFP are multifactorial. This means there are multiple reasons for why symptoms start and ***so management is bespoke and unique*** to each individual. These potential influencing factors are discussed on page 8. Your management team; including the Orthopaedic Team and your Physiotherapist will assess these in details and discuss which are contributing to your individual symptoms. A management plan unique to your needs will then be developed.

Symptoms typically start when the loads or demands placed upon your patellofemoral joint and the surrounding tissues exceed their capacity or tolerance. It's a "balancing" act.



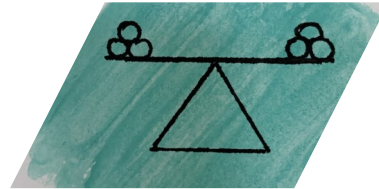
Load

- Sudden increase in activity, speed, mileage, volume, hill training
- Being overweight or obese
- Change to muscle strength (weakness) or flexibility (tightness)
- Stiffness of the hip, knee or ankle
- Change to movement control and quality
- Change to footwear
- Your anatomy may predispose you to increased loading
- Mental load



Capacity

- Reduced sleep / fatigue
- Stress and low mood
- Fear of pain, movement, re-injury or further injury
- Injury and / or pain
- Inadequate nutrition



Managing PFP - It's a balancing act

It is important to start by saying *most people with PFP and symptoms get better*. For some, symptoms can be present for years. Some people may have had many consultations and physiotherapy experiences in the past. It can be a slow process and improvement can take time; in some instances months or years. **Be patient and trust the process.**

The vast majority of people manage their symptoms with physiotherapy. People rarely need other interventions such as injection therapy or surgery. This will be discussed with you in more detail if applicable to you.

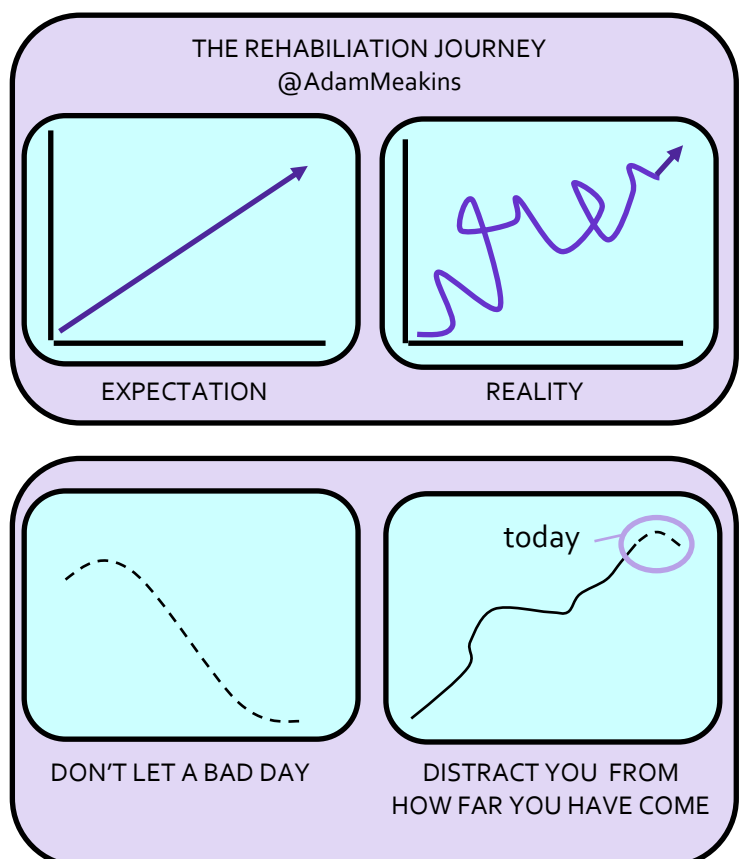
Management is all about *improving your "load tolerance"*. This means gradually increasing the demands that your PFJ and the surrounding tissues can tolerate. Examples of "demands" could include stair climbing, squatting, running or sports. We can achieve this by reducing unnecessary loads or pressure through the PFJ and surrounding tissues (e.g. activity modification or stretching tight muscles etc) whilst gradually improving strength of the surrounding muscles. The job of our muscles is primarily to move us but also to absorb loads and make sure loads are spread evenly across our joints. ***This is why exercise is essential.***

You may have trialled some physiotherapy exercise in the past without success. It is the job of our team to find out what **specific** exercise you need that can be performed relatively symptom free. It is very difficult to exercise when you are in pain.

Here are our **TOP TIPS** for success. These tips will help you manage your symptoms. Remember it is very difficult to build your "load tolerance" (i.e get strong to tolerate your demands) when you are in pain, so it is essential you regain control of your symptoms.

1. Rehab is a process – TRUST the process

Depending upon your unique contributing factors to your PFP, the rehabilitation time may be lengthy. Often, individuals need to strengthen muscles and **this takes time**. We advise people to be able to gain enough strength to leg press their body weight, after all, this is what we do going up and down stairs! It takes at least 3 months for an un-injured, painfree individual to gain muscle strength. For people with pain, this takes longer. You will very likely have ups and downs and set-backs, but **TRUST THE PROCESS**.



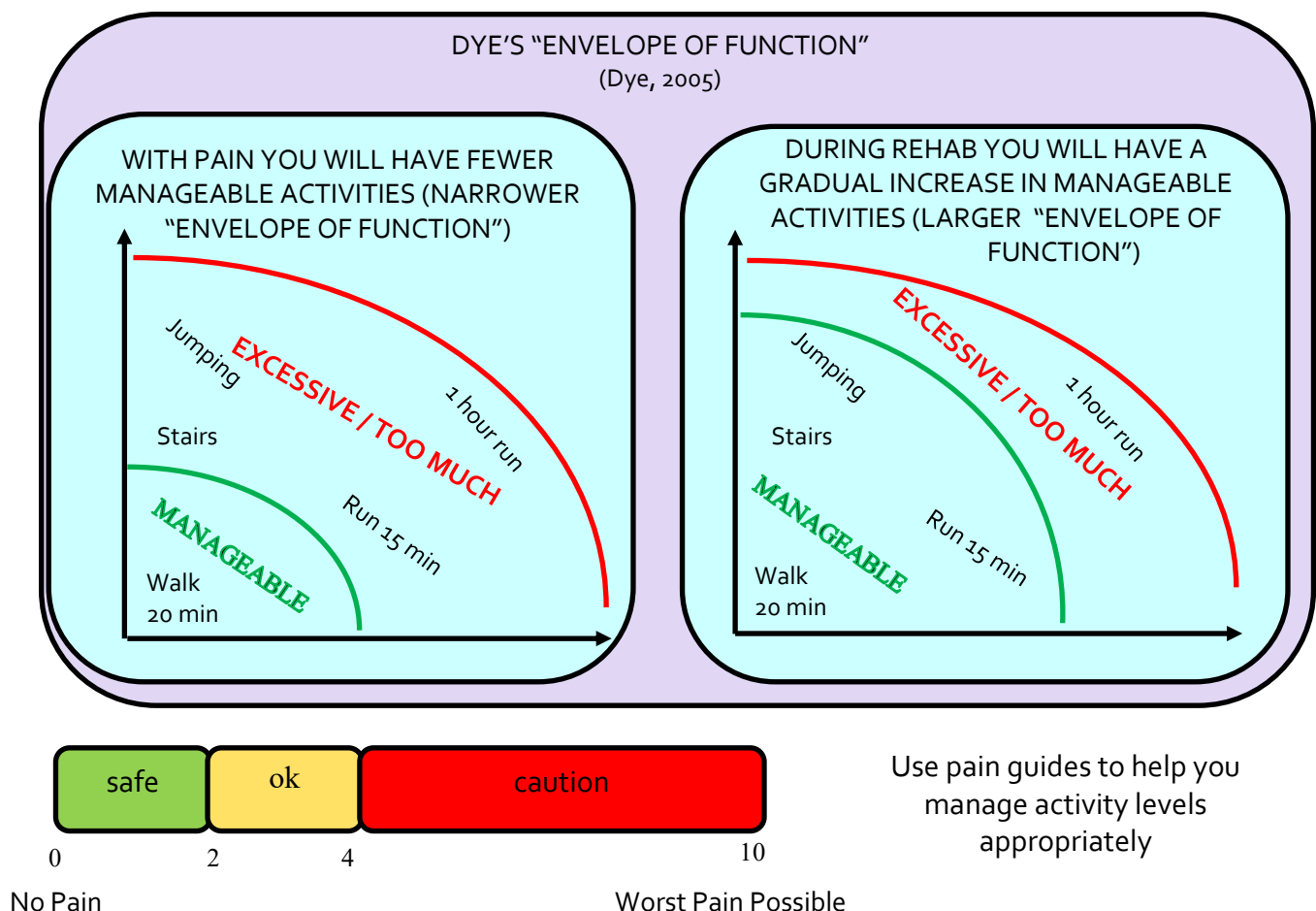


2. Monitor overall activity levels including day to day activities and exercise – keep within your “envelope of function”

Think about your activity levels as a whole. How many steps do I do a day? Do I need to take the stairs at the tube? You may need to choose between activities temporarily to reduce pain levels in order to allow you to successfully participate in your rehab. We call this **keeping within your “envelope of function”** (Dye, 2005).

During the rehabilitation process, this “envelope of function” should increase in size so you can tolerate more and more.

- ⇒ try not to do too much exercise / or too much too soon. Our tissues and joints do not like sudden change.
- ⇒ Gradually increase your exercise (e.g. 10% per week) e.g. if you know you can tolerate 5000 steps per day, each week increase by 10%. Week 2 you would do 5,500 steps, week 3 you would do a maximum of 6,050 and so on.
- ⇒ You should reduce your time or intensity of exercise if your pain lasts more than 24 hours post exercise.
- ⇒ Think about your activities and those that load the knee cap more, for example, running and jumping. Do you need to do these at this time? Other, lower-impact exercises may help to offload your knee in the short-term whilst maintaining strength. These could include half squats, cycling, walking (as opposed to running) or swimming. It is important to monitor your symptoms and adjust your training as required.

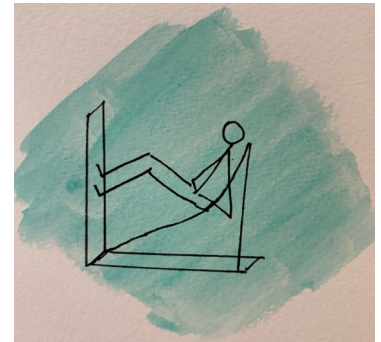




3. What exercise?

- Typically exercise will consist of some **stretching and strengthening work**. If pain levels are high, then start with exercises that typically place reduced loads through the kneecap (e.g. hip dominant exercises).
- As your pain allows, you will gradually progress these exercises to standing and functional tasks.
- Exercise will
 1. **improve how you move**
 2. offload your kneecap and the surrounding tissues.
 3. **re-train your movements during painful activities**.

A bespoke programme will be issued by your physiotherapist following an assessment. It will likely include exercises for your hip and thigh muscles.



4. Taping

Taping can be hugely helpful in your management. For many individuals with PFP and symptoms, it can reduce pain and improve confidence. It can also improve how your quadriceps (thigh) muscles work. Taping works because it can “offload” the structures around your kneecap but also improve muscle activity.

Often we use taping to reduce pain levels so you can better engage in your rehab program. We may advise you learn to self-tape and will guide you through this process. Always remember you need rest periods from tape so your skin doesn't become intolerant to it and react.



5. Try shoe inserts

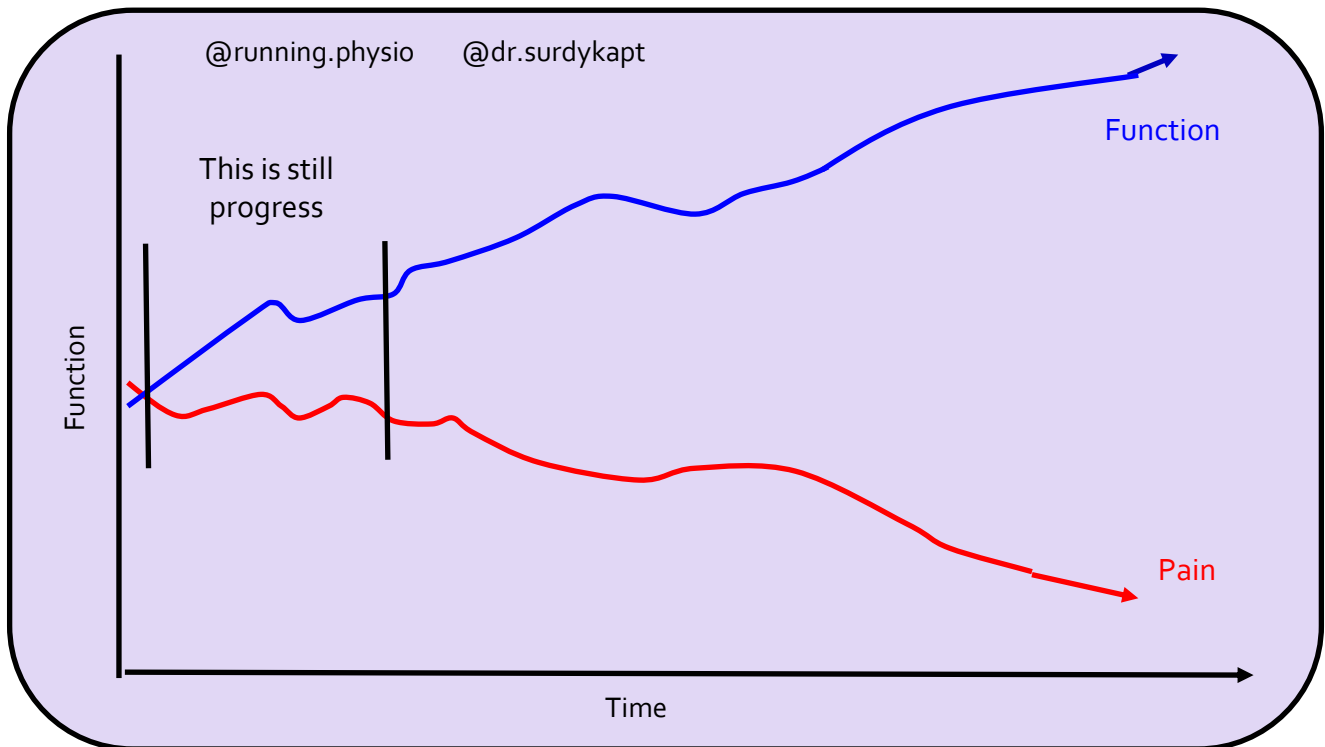
Research suggest that *1 in 4 people may benefit from shoe inserts* (D de Oliveira Silva & C Barton)

We will also assess and advise on this in physiotherapy and refer you to podiatry if applicable.



REMEMBER: TRUST THE PROCESS!

Day to day pain may not hugely improve in the early parts of your rehab but your function and manageable activities often do. Remember this is still progress!



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Patient Advice & Liaison Service (PALS):

If you have concerns or wish to give feedback about services, your care or treatment, you can contact the PALS office on the Ground Floor of our hospitals near the main reception.

Alternatively, you can send us your comments or suggestions on one of our comment cards, available at the PALS office, or on a feedback form on our website www.chelwest.nhs.uk/pals.

We value your opinion and invite you to provide us with feedback.

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