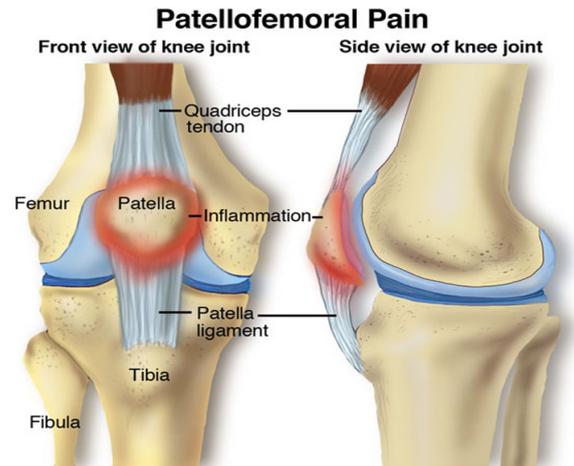


## WHAT IS PATELLOFEMORAL PAIN SYNDROME?



- One of the **most common causes of knee pain is patellofemoral joint pain** (also known as runner's knee).
- The pain is usually felt in the front of the knee, up and around the knee cap as pictured.
- The pain will get worse with more activity, particularly when a large amount of knee range of movement is required, and is often worse after



### What causes Patellofemoral pain syndrome?

The acute pain **is caused by irritation** (and sometimes inflammation) of the area **when there is an increase in load**. Our bodies are very adaptive and respond to changes in load by getting stronger. But when we increase by **too much, too soon they don't have time to adapt** so tissues and structures can become overloaded and irritated.

This change in load might look like a simple increase in volume of training or general activity or more subtle changes in activity levels.

Muscle weakness can also increase the load in the knee:

- **The quadriceps ( thigh muscles) are super important** for supporting the knee cap and weakness in this area can increase the load on the joint
- The hip, knee and ankle all work together to create movement like squatting or going up the stairs. If there is a deficit in one area it will increase the load in the others.
- Rate of force development (muscle power) is how quickly the muscles can switch on and contract. This is really important, particularly for running, because without good power we can't absorb the load with each step we take and this increases ground reaction forces and load through the knee.

The way we move when we run, squat and jump can also increase the load in the knee. While there is no right or wrong way to run, different running

styles, in particular excessive heel striking or overstriding, load up the knee more. Similarly there are lots of different ways to do a squat, lunge or jump, some variations will load up the knee more and while this isn't bad, too much too soon can be a problem.

ALSO **sometimes a decrease in load can also cause overload.** As we start to decondition from reduced activity our capacity and strength of the knee drops below the requirements for day to day activities.

My knee clicks, is this bad?

Knees can be very noisy joints, so clicking and grinding **is actually very common.** The noises we hear are not actually grinding or wearing down the joint (even though that's what it can sound like!). As we age, the tissue that covers the bones, called cartilage, can develop uneven areas. When we squat or stand, sounds come from these rougher surfaces gliding across each other. **This is normal with movement and not harmful at all.**

Do I need to stop running/jumping/training etc?

As physiotherapists it is our job to keep you moving as much as possible, even throughout rehab. Because patellofemoral pain is not caused by an actual injury or structural damage, **some pain associated with patellofemoral pain is absolutely okay.** We stick to **the 4/10 rule:** pain up to a 4/10 during any activity is okay, so long as the pain settles within 1 hour of finishing the activity and is not worse the next day after.

How do I fix my knee pain?

- Load management is the **MOST IMPORTANT** part of treatment. This might involve adjusting your training sessions, trying cross training, changing the periodisation of weekly sessions or reducing the volume. Then we will gradually build you back up to where you need to be for your goals.
- A **progressive strength program** over a **minimum of 6-12 weeks** is needed to make good strength gains. This needs to be targeted at your specific needs for best results.
- An assessment of your running, squatting or jumping to adjust technique as needed
- **Taping and manual therapy** can be a helpful **short term tool** to manage the pain and allow you to perform your rehab program
- Sometimes orthotics or different footwear needs to be considered.