



**BODY IN
MOTION**

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"Keeping You Moving"

*Body In Motion's team of physiotherapists are here not only to help you back from injury, but also to help you reduce your risk of getting injured. As education is a key component of injury prevention, please read this month's look at **Anterior Knee Pain**, and feel free to contact any one of the team to help reduce your risk!*

Anterior Knee Pain

As most of us know, the knee is the hinge type joint between the thigh bone (the femur) and the main shin bone (the tibia). It is primarily controlled by 2 major muscle groups: the hamstrings and the quadriceps. The hamstrings cross over the back of the knee and are responsible for active bending of the knee. The quadriceps cross over the front of the knee and are responsible for active straightening of the joint.

The quadriceps attach to the tibia through what is effectively a dynamic pulley system located at the front of the knee. The short tendon of the quadriceps muscle joins attaches to the top of the kneecap (the patella), which is then connected to the tibia below via the longer, thicker patellar tendon. This complex pulley system is influenced by a number of forces, and when it breaks down, it is the primary source of anterior knee pain.

The least common site of trouble is where the quadriceps attach to the patella at the top via the **quadriceps tendon**. When this tendon is injured, it is usually associated with pain at along the top part of the patella, and often settles quickly with local treatment and activity modification.

More common sites of pain, which are often a little more difficult to manage, are the patellofemoral joint and the patellar tendon.

As the name suggests, the **patellofemoral (or PF) joint** is formed where the patella glides across the bottom of the femur. This



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joint can become irritated from acute injuries, from chronic overload and from issues linked to alignment of the whole lower extremity. It can (and often is) also be irritated from a combination of all three. Usually associated with pain behind the kneecap, PF joint pain is often noticed when walking down stairs or hills, or when squatting and lunging.

A little further south is the **patellar tendon**, and this is often injured in similar ways to the PF joint. If not managed well in their acute stage, patellar tendon issues (also known as runner's or jumper's knee) can become chronic and rehabilitation also then becomes a very long process. Tenderness between the kneecap and the shin bone is the most common complaint, but this can also be accompanied by thickening or swelling of the tendon itself.