

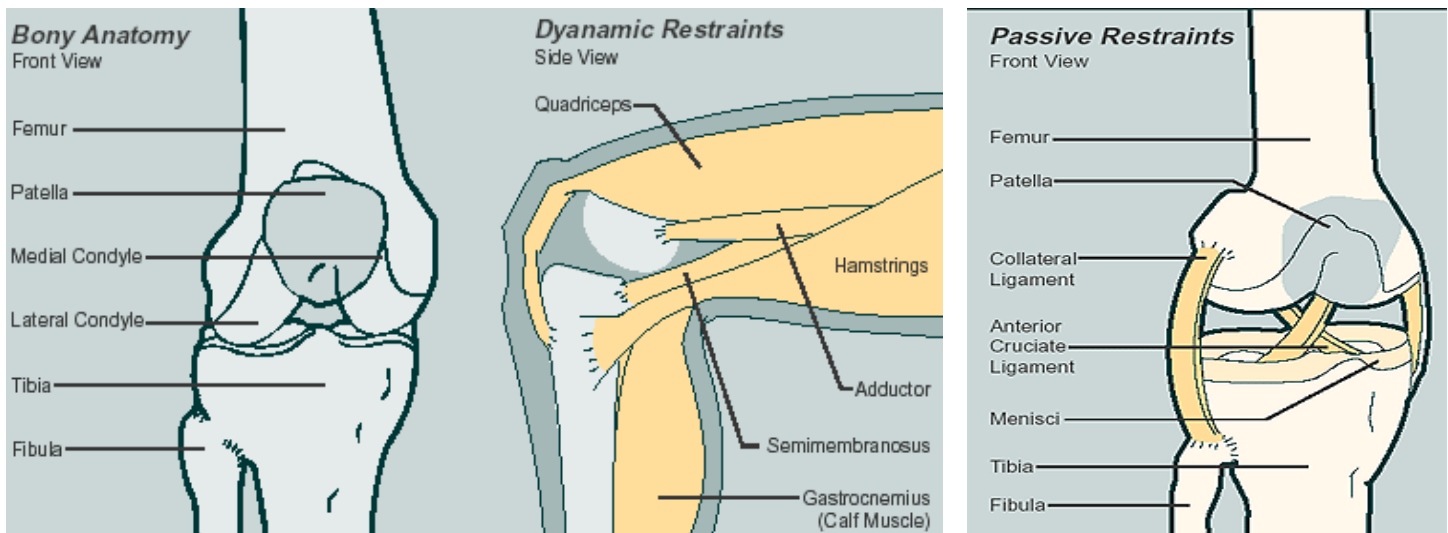
## Knee Ligament and Meniscal Injuries

The knee is a relatively simple joint that is required to do a complicated job... to provide flexible mobility while bearing considerable weight. When walking, our knees bear three to five times our body weight. When climbing stairs, that force can multiply to seven times our body weight.

### The Knee Joint

The knee joint is made up of *two* joints: the patello-femoral joint, where the large bone of the upper leg connects with the knee cap; and the tibio-femoral joint, where the upper leg bone hinges with the large bone of the lower leg.

These bones are held in place by fibrous *ligaments*. The four major stabilizing ligaments of the knee are the anterior and posterior cruciate ligaments (ACL and PCL, respectively), and the medial and lateral collateral ligaments (MCL and LCL, respectively). The most commonly injured of these ligaments are the MCL and the ACL. The MCL resists widening of the inside of the joint, or prevents "opening-up" of the knee. The ACL prevents the tibia from sliding too far forward on the femur. The ACL also contributes stability to other movements such as rotation at the knee joint.



The knee joint is further supported by muscles. When conditioned and strengthened, these muscles apply forces that help hold the joint together.

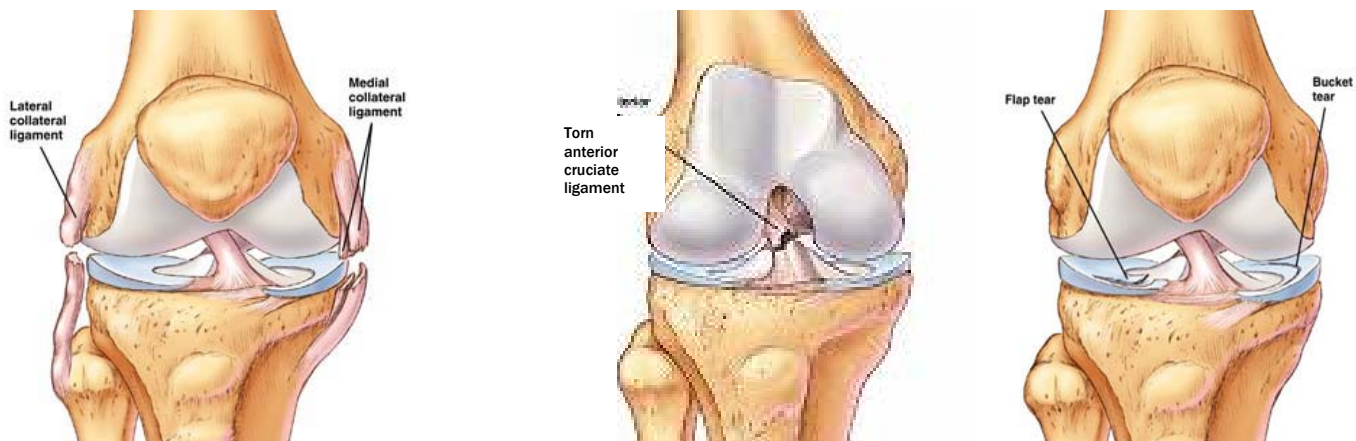
The *menisci* are pads of cartilage that further stabilize the bones, and provide shock absorbency. When people talk about a cartilage tear, they are talking about a tear of the meniscus. The two most common causes of a meniscal tear are due to traumatic injury (often seen in athletes) and degenerative processes (seen in older patients who have more brittle cartilage). The most common mechanism of a traumatic meniscus tear occurs when the knee joint is bent and the knee is then twisted.

## What happens when there is a knee injury?

The most common symptom following a medial collateral ligament injury is pain directly over the ligament. Swelling over the torn ligament may appear, and bruising and generalized joint swelling are common 1 to 2 days after the injury. In more severe injuries, patients may complain that the knee feels unstable, as though their knee may 'give out' or buckle.

When this giving way sensation is because of an ACL injury, the knee joint is sliding too much. This can be a problem because each episode of instability (the 'giving way' sensation) can cause damage to the knee cartilage. Therefore an ACL injury makes patients more prone to developing arthritis and meniscal tears.

The primary symptoms for individuals who experience a meniscal tear are pain and swelling. Another common complaint is joint locking, or the inability to completely straighten the joint. This is due to a piece of the torn cartilage physically impinging the joint mechanism of the knee.



### Usual symptoms include:

- Pain in and around the back of the knee
- Difficulty in activities such as walking, running, ascending and descending stairs, squatting and kneeling
- Swelling around the knee

### Sport Medicine Physician

Your sport medicine physician will be able to diagnose your knee problem and determine the appropriate course of action. Most often, they will refer you to physiotherapy for treatment. They may also send you for further diagnostic investigation or refer you to an orthopedic surgeon if they think you may need surgery.

### What physiotherapy can do to help

- We use muscle stretches to lengthen tight structures
- We use electrotherapy and/or acupuncture to relieve pain, swelling and promote healing
- We progressively strengthen weak muscles by teaching you specific exercises
- We can use tape to correct imbalances until your muscles are able to do the job.
- We progressively return you to daily activity and sporting activity by creating a programme that is custom designed for your particular problem.