

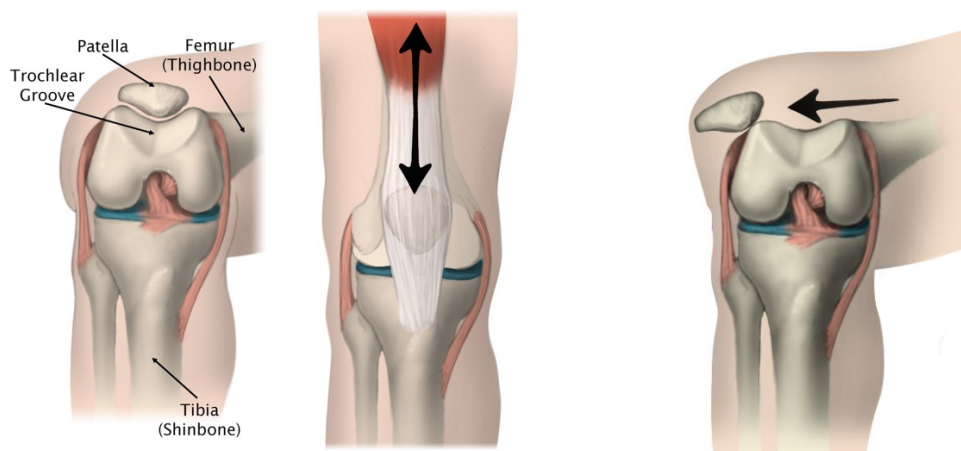
KELOWNA BONE & JOINT HEALTH

PATELLAR DISLOCATION AND INSTABILITY – “THE UNSTABLE KNEECAP”

WHAT IS PATELLAR INSTABILITY?

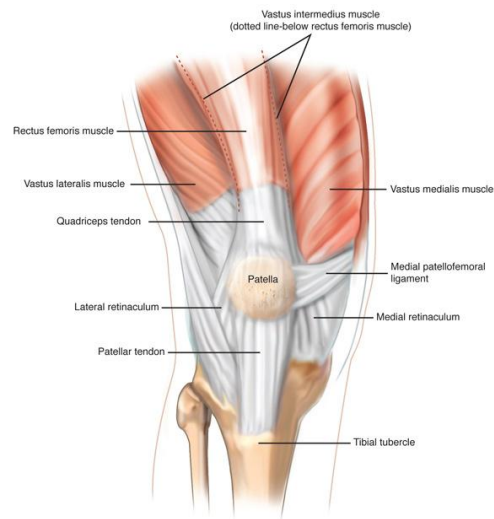
Normally the kneecap (patella) sits within the groove at the end of your thigh bone (femur). The kneecap connects the muscles from your thigh to your shinbone (tibia). When the knee bends and straightens, the patella moves up and down within the groove. Sometimes the patella slips out of the groove, such as after a hard blow or a fall causing pain and loss of function. Sometimes if the femoral groove is uneven or too shallow the kneecap can slide off to one side, resulting in a partial dislocation (subluxation) or complete dislocation.

Patellar instability can be classified as acute or traumatic, chronic, or habitual. The acute traumatic patellar dislocation usually results in a tear of your MPFL (medial patellar femoral ligament). With chronic patellar instability recurrent subluxation episodes can occur and it is usually associated with malalignment or muscle imbalances.



MEDIAL PATELLAR FEMORAL LIGAMENT (MPFL)

The MPFL is a ligament that prevents your kneecap from dislocating. It runs from the inside edge of the patella to the femur. This is commonly injured with an acute patella dislocation. Up to 50% of people who have suffered a dislocation of their kneecap will go on to have ongoing instability and may require surgical intervention. Surgery may entail tightening of the tissue on the inside of your kneecap (imbrication) or reconstruction of the MPFL.



If your anatomy or alignment puts you at an increased risk for patella instability you may need other surgeries (at the same time) in addition to an MPFL reconstruction or imbrication, such as a tibial tubercle osteotomy (TTO) or soft tissue releases.

I HAVE DISLOCATED MY PATELLA, NOW WHAT?

Not every person who suffers a patellar dislocation requires surgery. There are muscles around the knee that provide stability to the kneecap and these can be strengthened with physical therapy. These injuries can be treated operatively or non-operatively. Non-operative management is often recommended for a first time dislocation while surgery is often reserved for recurrent patellar instability. The decision is ultimately based on findings on physical examination (alignment and stability testing), clinical symptoms, and age. If non-operative treatment is pursued, a patellar stabilization brace can be used during activity to prevent instability episodes. Adjusting your lifestyle to avoid activities that cause patellar dislocations/subluxations is also recommended.

GOAL OF PATELLAR STABILIZATION SURGERY:

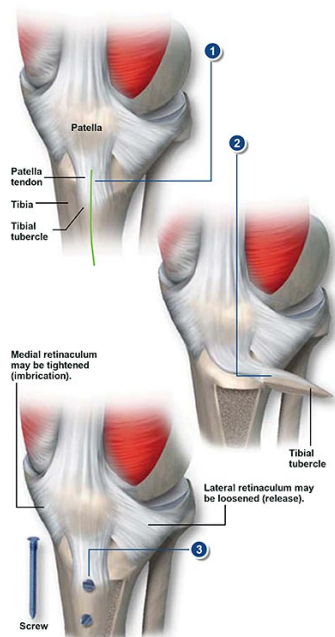
The main goal of any patellar stabilization surgery is to prevent further patellar dislocations, subluxations or feelings of instability and to prevent further damage to the articular cartilage behind the kneecap (osteoarthritis). When adding a tibial tubercle osteotomy or soft tissues releases, it can help to correct the kneecap alignment allowing it to sit better within the groove.

HOW IS THE SURGERY PERFORMED?

Initially the knee is examined under anesthesia to confirm instability of the knee cap. All surgeries include a knee arthroscopy (camera to look inside the knee) through poke hole incisions. An examination of the entire knee joint is performed looking for loose bodies, cartilage damage, or tears in the meniscus. If the tight structures on the outside of your kneecap need to be released this will also be done using via the arthroscopy.

MPFL imbrication – uses stitches to tighten the ligament on the inside of your patella. This is done through small incision on the medial (inside) of your kneecap.

MFPL reconstruction – creates a new ligament by replacing the torn MFPL with your hamstring tendon (autograft) or using a donor (allograft) tendon. The graft tendon is attached to the patella with 2 small suture anchors or through bone tunnels, done through a small incision on the inside of your kneecap. Through a second incision, the tendon graft is attached to the femur bone using an absorbable screw. The graft will grow into the bone in 3-4 months.



Tibial Tubercle Osteotomy (TTO) – involves moving the attachment of the patella tendon onto the tibia to a new position. Through a 5-10 cm incision on the front of your leg just below the kneecap, a surgical fracture (osteotomy) is made to the upper part of your shin bone to move the tibial tuberosity to a new position and is held in place with 2-3 screws. The new position is based on pre-operative investigations and improves the tracking of the patella.

POTENTIAL RISKS AND COMPLICATIONS

Any surgery comes with possible complications, although quite rare with patellar stabilization surgeries.

- Infection (all patients receive antibiotics just prior to surgery)
- Risk of injury to artery or Nerve
- Post-operative bleeding
- Excessive knee stiffness
- Blood clots
- Anesthetic risk factors
- Recurrent instability
- Graft failure without repeat injury
- Re-Tearing of the MPFL with repeat injury
- Risk of Non-union of the osteotomy (bone doesn't heal)
- Risk of numbness around incision – very common.

WHAT CAN I EXPECT?

MPFL surgery is very successful for stabilizing the patella and preventing dislocation. Most patients can return to sport – running, jumping and pivoting activities after surgery. However, some patients may have more damage inside their knee and may be told to protect their knee and avoid doing certain activities as too much load on damaged joint surfaces can increase the progression of arthritis. Your surgeon will give you advice about return to sport based on the amount of damage seen inside the knee at the time of surgery. The end result for each patient is dependent upon injury pattern, age, genetics, anatomy, motivation, psychological attitude and adherence to the post-operative protocols.

WHAT SHOULD I DO WHILE WAITING FOR SURGERY?

We recommend that all patients stay as active as possible before surgery. It's important to regain strength and motion in the knee before surgery, as this will improve your recovery after your surgery. Regaining normal motion will decrease the risk of post-operative knee stiffness. Regaining your strength in your legs and core, as well as maintaining your fitness will not only help improve balance, it can help speed overall recovery. See the pre-habilitation hand-out for exercise guidance.

SPECIAL EQUIPMENT AND HOME PREPARATION

Crutches:

For both MFPL reconstruction and TTO surgeries crutches will be required in the post-operative period. The duration of use and the amount of weight you are allowed to put on your leg will be guided by your surgeon

Brace:

For both MFPL reconstruction and TTO surgeries a knee brace will be required. An extension splint will be placed at the time of surgery. Your surgeon will provide you with a prescription to obtain a hinged knee brace. Your surgeon and/or your post-operative protocol will provide you with direction on adjusting the ROM that the brace will allow.

Ice-Compression Device:

The use of a "Cryo-Cuff" or "Game Ready" device combines consistent flow of cold liquid, with compression to help control swelling. Patients who use an ice-compression device often require less pain medication, and better swelling control. These are highly recommended by the surgeons at Kelowna Bone and Joint Health to improve knee pain and function in the post-operative period.

It is recommended that you prepare your home for your arrival on your operative day. Try to avoid cords, or bulky rugs that you could catch your crutches on and have a risk of fall. If you have a significant number of stairs, you may want to sleep on the main floor for the first night or two and should plan accordingly.

POST-OPERATIVE PROTOCOL

Discharge from hospital is typically the same day; however, if you do have a TTO an overnight stay might be required for swelling and pain control. The key to the early post-operative period is to control swelling with ice and elevation. Duration of crutch use and weight bearing will be guided by your surgeon. Typically for isolated MFPL reconstruction you will be able to weight bear as tolerated and crutch use will be from 2-6 weeks or until you can walk without a limp. Following a TTO, weight bearing will be dependent on your surgeon's instruction and crutches will be utilized at minimum 6 weeks depending on bone healing.

Formal physiotherapy is initiated within two weeks of surgery. A formal post-operative protocol will be provided to you in the post-op period. Plan to take 2-4 weeks off of work for a sedentary job, 2-3

months off for light manual work, and up to 6 months off of heavy manual work. **Note**, that these are general guidelines and can be discussed with your surgeon during the recovery period.