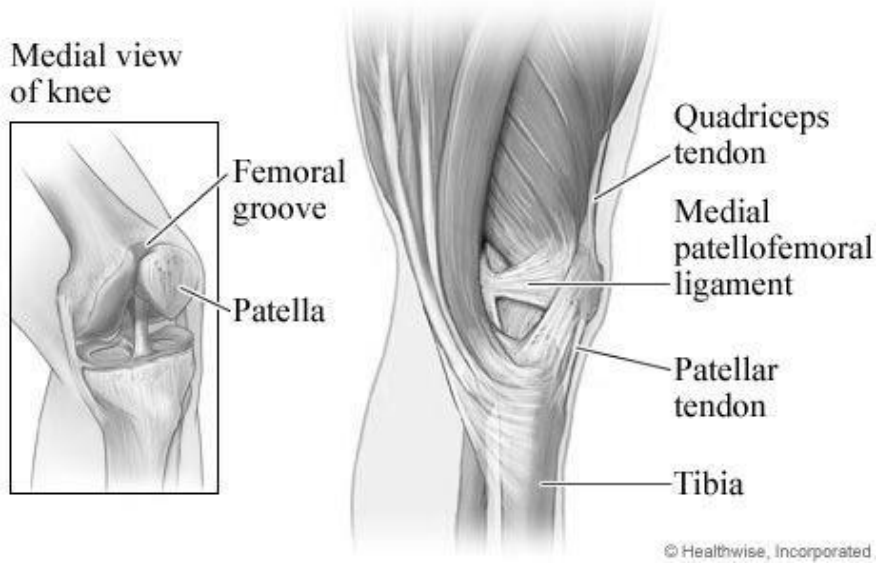
Patient Information and Rehabilitation Guidelines for Medial Patello-femoral Ligament (MPFL) Reconstruction and Trochleoplasty and Tibial Tubercle Transposition

This booklet aims to improve your understanding of medial patella-femoral ligament reconstruction, trocheoplasty and tibial tubercle transposition.

Anatomy

The kneecap (patella) is the small bone at the front of your knee. In a normal knee the patella fits into a groove (trochlea) on the thigh bone (femur), and moves up and down in this groove as you bend and straighten your knee.

The patella is held in this groove by a number of soft tissues. The most important of which is a ligament that runs from the inside edge of your kneecap to the thigh bone; the medial patello-femoral ligament (MPFL).



A dislocation occurs when the kneecap becomes displaced from the groove in the thighbone; usually laterally (towards the outside of your leg).

This can occur from a direct blow or from a forceful inward twisting movement of the knee.

It may also happen without specific injury in people who have very lax ligaments or have a shallow groove. Dislocation of the kneecap usually causes a tear (rupture) of the MPFL.

It can heal with appropriate early treatment and in many cases surgery is not needed. However, if the patella repeatedly dislocates then you may require an operation to reconstruct the ligament.

Operations

MPFL reconstruction involves the use of a graft. The graft replaces or re-enforces the damaged MPFL.

The graft can be taken from your hamstring tendons, a cadaveric specimen or can be made of synthetic material. Graft choice will be made during discussion with your surgeon.

Trochleoplasty is required in young people who have a very shallow or mis-shaped trochlear groove. Trochleoplasty involves deepening this groove and would typically be combined with MPFL reconstruction.

Moving (transposition) of the tibial tubercle is required for people with a 'high riding patella' and requires moving the point at which your patellar tendon attaches to your shin bone (tibia) slightly downwards (to bring the patella into the trochlea groove).

These operations are usually carried out under general anaesthetic and involve the surgeon making a 5cm incision on the inside of your knee (MPFL reconstruction) or 15cm incision down the front of your knee (trochleoplasty).

If a hamstring tendon graft is needed it will be collected through a 3cm wound on the upper, inner aspect of the shinbone (tibia). Wound(s) will be closed with stitches/staples.

Benefits

The following should be improved following your operation, but remember this will not happen immediately:

- Improved function (able to return to work and/or sport with some exceptions)
- Reduction of pain and anxiety
- Your kneecap should not dislocate (from its groove)

Risks of the operation

Any surgical intervention can theoretically result in mortality (death), it is extremely rare for this to happen for this procedure, but recent legal rulings have mandated this be mentioned.

The following are the complications related with MPFL reconstruction surgery.

Complication	Risk
Infection of wound	1 in 100
Septic arthritis (deep infection of the joint)	1 in 500
Deep vein thrombosis (clot in the calf)	3 in 100
Pulmonary embolism (clot in the lung)	Rare but potentially life threatening
Anterior knee pain	Common but settles normally with time
Complex regional pain syndrome (an abnormal pain reaction to any surgery)	Not recorded
Patella fracture	Not recorded
Symptoms related to metal work	Not recorded
Nerve damage (numbness front of knee and upper shin)	Not recorded
Stiff knee – can be difficult to regain movement, some patients may need a manipulation to restore knee movement	Not recorded
Ongoing symptoms of instability or dislocation	Not recorded
Patella-femoral joint osteoarthritis	Not recorded
Persistent weakness of the thigh muscles	Not recorded

The day of the operation

You are asked not to drink or eat anything for at least 6 hours before your operation, you may drink water (without flavourings or fizz) up to 2 hours before the operation.

You will be seen by your Anaesthetist and a member of the surgical team before your operation.

In the anaesthetic room, you will have a needle put into your arm and will be placed on an anaesthetic machine.

After the operation

You will wake up in the recovery area of the theatre. Your wounds will be covered with a small dressing. You will have a compressive wool and crepe bandage on your knee.

Patients who have had MPFL reconstruction do not require a knee brace. Patients undergoing trochleoplasty or tibial tubercle transposition will need to wear a long lever hinged knee brace. This will restrict movement to 0-90° in the latter case and will remain open in the former. Elbow crutches will be provided to help you to walk. You will be told what was done during the surgery.

You will probably be allowed to go home on the day of your operation (MPFL reconstruction) or the day following surgery (trochleoplasty and tibial tubercle transposition).

The wound is to be kept dry until healed and the dressing is not to be disturbed unless soiled and a clean one applied.

Regular ice application (10-15mins every 1-2 hours).

You will be given pain relieving medications to take home with you, please take these as prescribed to prevent pain from building up to a level that is hard to control.

Physiotherapy appointment will be arranged. Expect bruising in the thigh and lower leg.

Remember your scar is highly susceptible to the sun, and use of a higher factor sun block is advised.

Follow-up

You will be seen around 2 weeks after the operation, as an outpatient, by Professor McNicholas.

Staples/stitches will be removed now (if you have them) and it will be explained again what was done during your operation.

Physiotherapy

You will require out-patient Physiotherapy to guide your rehabilitation. They will progress your walking, exercises and knee movement as per the guidelines for this operation:

- Early rehabilitation focuses on reducing pain and swelling and quickly regaining basic thigh muscle strength.
- Restoration of knee range of motion is targeted early with only those patients undergoing tibial tubercle transposition being limited to 90° in the first 6 weeks.
- From 4 weeks after surgery a greater amount of strength, balance and knee control exercises can begin.
- Most patients are able to walk without support between 4-8 weeks after surgery.
- Later rehabilitation will be tailored toward returning you to your occupation and/or sporting hobbies as required.
- Running: no earlier than 12 weeks post-operation.

Crutch walking will be taught by a Physiotherapist: For partial weight-bearing move the crutches and operated leg first, and then follow through with your good leg.

General Advice

Return to work This will depend greatly on the job that you do. For desk-based jobs from 2-4 weeks; jobs requiring prolonged standing/walking 8-12 weeks; manual jobs 16 weeks.

Return to driving This can be at 6 weeks and 12 weeks for MPFL reconstruction and trochleoplasty/tibial tubercle transposition respectively, for manual and automatic cars, if it is the right leg that has been operated on.

If it is the left leg that has been operated on, you may drive an automatic car once the wounds are healed at 2 weeks.

You should notify your insurance company of the procedure that has been undertaken to ensure that your cover is valid. For further information follow this web link: https://www.gov.uk/driving-medical-conditions

Flying is not permitted for 8 weeks following surgery due to a higher risk of developing a blood clot. For further information follow the web link below:
http://www.nhs.uk/chq/Pages/2615.aspx?C%20ategoryID=69

VTE (blood clots)

VTE is a collective term for two conditions:

- **DVT** (deep vein thrombosis) – this is a blood clot most commonly found in a deep vein that blocks the flow of blood.

- **PE** (pulmonary embolism) – a potential fatal complication where a blood clot breaks free and travels to the lungs.

Whilst you are less mobile, especially during the first few weeks following your procedure, the risk of VTE is higher because of your immobility.

Professor McNicholas may prescribe you a daily injection of Clexane to help thin your blood and these should last approximately 14 days. If this is needed, you will be shown how to inject this drug yourself.

Symptoms:

- Swelling – you will have some swelling due to your surgery but if you have any concerns please call for advice
- Pain – any new pain we want to know about
- Calf tenderness
- Heat and redness compared with the other leg
- Shortness of breath
- Chest pain when breathing in

Things you can do to prevent VTE

- Move around as much as possible. Be sensible though, short and regular movement is best
- Drink plenty of water to keep yourself hydrated
- We strongly advise you not to smoke – this will have been discussed in pre op but we can also refer you to our smoking cessation team within the Hospital.
- Move your ankle around as much as possible to keep your calf muscle pumping

Small preventative measures can have a huge impact on your recovery.

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