Quick reference guide

Knee pathology

Examination: Always compare and examine both knees:

History
ONSET: Audible ‘popping’ or ‘snapping’ sound may indicate ligament rupture. Swelling within two hours signals a haemarthrosis – possible ACL or PCL rupture. Gradual swelling over six-24 hours suggests a meniscal injury. Locking or clicking may indicate a loose body, possibly a meniscal injury. The knee giving way or instability suggests ACL injury or muscle weakness.

Tests
Assessing range, end feel and pain across the following tests:

**Anterior drawer**
Sit on the foot to fix it. Grip tightly around the tibia head and draw the tibia forwards. There should be a slight motion then a solid end feel. The patient has to relax and you should compare left and right, usually several times.

**Lachman’s for ACL**
Lachman’s is probably better than anterior draw. Place your knee in the couch under the patient’s knee. Hold the quad firmly to fix the knee and then grip again around the head of the tibia. The patient has to relax and you draw the tibia forwards to feel a solid end point. Compare left and right.

Always be careful to ensure you are not being confused by a posterior sag or PCL issue that feels lax.

**McMurray’s for menisci**
To test the medial meniscus (as shown in the pictures below) flex the knee fully holding the heel with one hand and palpat ing the medial joint line with the other. Turn the foot out at the same time as pulling the knee towards you – valgus stress. Whilst doing this, extend the knee steadily. Pain and / or a click indicate a torn medial meniscus. To test the lateral meniscus it is the same hand positions but ensure you are palpat ing the lateral joint line. As you extend the knee, push the knee inwards (varus) and turn the foot inwards. Sensitivity is about 70%.

**MCL – Varus test**
Place the foot under your arm and grip around the knee which is bent between 0 and 30 degrees. The outside hand should be over the femoral condyle, the inside hand over the top of the tibia. Push the outside hand inwards to gap the inside of the knee joint. Alter the angles to test various parts of the ligament and medial capsule. There should be some movement then a definite stop. It should also be comfortable. Pain and / or excessive gapping, compared to the other side is indicative of an MCL injury.

**LCL**
Hold the foot under your arm and grip with your inside hand firmly over the inside of the knee and the outside hand on the tibia. Push laterally to gap the lateral joint line. You may have to alter the angle of the knee joint.
Palpate for tenderness
- Medial and lateral joint line with knee in 30° of flexion
- Patellofemoral joint – compression for retro patella OA
- Patella Tendon
- MCL and LCL
- Popliteal Fossa – easier in supine. Look for Baker’s cyst, DVT, gastrocnemius pathology

Other appropriate tests are the Posterior Drawer/Posterior Sag for PCL, and resisted movements in the muscles with pain signalling the location.

**Treatment**

**ACL injuries**

ACL tears do not necessarily require ACL reconstruction surgery. Consider patient age, activity and circumstance. Does the patient perform regular sports or activities that normally require a functional ACL and knee stability? Do they plan to in the future?

Unless the patient participates in a multi-directional sport that requires a patent ACL and a stable knee they may not need ACL surgery.

The best way to avoid surgery is to undertake a comprehensive ACL rehabilitation program that involves leg strengthening, proprioception and high level balance retraining, plus sport-specific agility and functional enhancement.

ACL Rehabilitation Aims:
- Reduce pain and inflammation
- Normalise joint range of motion
- Strengthen knee musculature: Quadriceps (esp VMO) and hamstrings
- Strengthen lower limbs: Calf muscles, hip and pelvis muscles
- Improve patella-femoral alignment
- Normalise muscle length
- Improve proprioception, agility and balance
- Improve technique and function across actions: EG: Walking, running, squatting, hopping and landing
- Minimise chance of re-injury

**Meniscus tear**

A small meniscus tear will usually respond quickly to physiotherapy. The main role of the menisci is shock-absorption. Research shows that by strengthening the leg muscles, the bone stresses will reduce as the knee becomes more dynamically stable.

**MCL & LCL injuries**

MCL is the most common knee ligament injury and are graded as follows:

- Grade 1: A small number of fibres are torn resulting in some pain but allowing full function
- Grade 2: A significant number of fibres are torn with moderate loss of function
- Grade 3: All fibres are ruptured resulting in knee instability and significant loss of function

Treatment may comprise of soft tissue massage, joint mobilisation, taping/bracing, ice or heat treatment, electrotherapy (e.g. ultrasound), exercises to improve flexibility, strength and balance, activity modification advice, biomechanical correction and a gradual return to an activity program.

Surgical reconstruction of the MCL/LCL may be required in rare cases of complete rupture when conservative measures have failed.

We treat everybody; from individuals with or without referral, to world class sports people. The majority of our patients are members of the general public but we have strong links with organisations such as England Rugby, the British Olympic Association and UK Athletics.

Looking to refer or need any advice? Get in touch!

Tel: 01604 601641    Email: info@wpbphysio.co.uk