

## Knee Arthroscopy

Arthroscopy is a minimally invasive surgical procedure that involves using small portals into a joint. These small incisions allow the surgeon to fix a variety of problems. They allow the surgeon to insert a fiber optic camera and specialty instruments to examine the joint, and carry out a range of treatments. It is typically done for symptoms such as pain, swelling, locking, catching, and sometimes "giving way". Most arthroscopic procedures are performed as day cases.

### How is the surgery done?



Figure 1. An arthroscope introduced into the knee.

It is undertaken in an operating theatre and usually under general anaesthesia. By moving the position of the leg, different parts of the knee can be visualised. This allows for accurate diagnosis of the problem. A second incision or "portal" is made to allow a variety of tools to be introduced into the knee. The majority of problems identified can be rectified arthroscopically at the same time.

The most commonly fixed problem is a torn cartilage or meniscus. However, more and more things can be fixed at the time of arthroscopy, including additional portals to access the back of the knee.

## Acute injuries of the knee

If the knee swells rapidly (within an hour of an injury) it is usually a sign of bleeding into the knee. The common injuries associated with this include patella dislocation, cruciate rupture, fracture, or a massive cartilage tear. All of these are suitable for acute surgery. Anterior cruciate reconstruction generally has better recovery if deferred until a full range of movement has been restored.

### Loose bodies

Injuries can cause fragments of cartilage, or bone, to break off & float about the knee. These can cause the knee to lock or jam. Removing loose bodies is usually easy. However, sometimes they are very large, and may be repaired with screws, smart-nails, or wires.

### Torn cartilage (meniscus)

The cartilage partly sits between the femur and tibia, functioning as a shock absorber. In young people, the cartilage may be damaged by sport. In older people, relatively minor injuries (eg getting up from squatting) can be enough to tear the cartilage. Cartilage tears generally do not heal. They can cause pain, swelling, and even locking of the knee. If the cartilage tear is small, or the patient over 40 years of age, the torn part is removed.

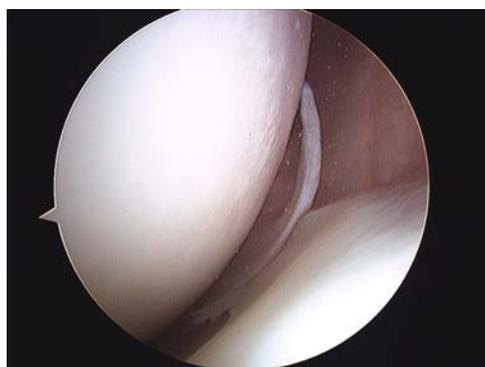


Figure 2. A small flap of torn cartilage. The fragment can flip about, causing severe pain, and even locking at times.



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## **Repairing torn cartilage**

Repair is usual if the tear is massive and in the bleeding part of the cartilage, in younger patients, and especially if a cruciate reconstruction is also being done. A brace and physiotherapy are required afterwards for about three months. In well-selected cases the success rate is 80-90%. Some may need further surgery to remove the cartilage.

## **Kneecap (patella) issues**

Kneecap conditions can be divided into 2 groups- Instability (ie the patella dislocates) and those where it causes pain. If an acute patella dislocation occurs, the knee often fills with blood and has some loose fragments that may lock and jam the knee. Arthroscopy addresses these problems and allows earlier and more effective physiotherapy. If recurrent dislocations occur, larger surgery may be required.

Not all knee pains have an obvious cause at surgery. In adolescents, often physiotherapy is used in the first instance to correct a condition called “Excess Lateral Patella Pressure Syndrome” (ELPPS).

Long-standing and recalcitrant ELPPS may require surgery by arthroscopy and a “lateral release” undertaken. Some surgeons do it entirely arthroscopically. Some surgery involves an additional incision on the outer side of the knee to minimize the risk of bleeding (which might speed up recovery). Crutches are usually required for three days. In long standing ELPPS, arthritis may form on the outer aspect of the patella. Surgery in this instance could include chondroplasty, lateral release, or even patella facetectomy.

## **Hoffa syndrome**

Hoffa syndrome involves inflammation of the retro-patella fat pad – this fills an area of the joint without a mechanical function. On MRI scan, the area can demonstrate inflammation. The surgical procedure to rectify this involves removing the fat pad. Recovery after surgery is generally slower, as the joint is likely to have more blood afterwards. Hoffa Syndrome is a rare diagnosis.

## **Plica syndrome**

The knee joint is formed out of two joints developed independently – one behind the kneecap, and one between the femur & tibia. As the knee joint develops, the plica normally diminishes. In plica syndrome, the plica may leave a tight band that flicks over the side of the femur. This can cause symptoms like a torn cartilage. Removing an inflamed plica usually fixes the problem, but it may take some months to feel normal.

## **Damaged joint surfaces**

Ends of bone have a surface like soft enamel. It can be damaged from injury, some childhood conditions, and also “wear and tear” of early arthritis. In older patients with a torn cartilage, there is often also some damage to the joint surface. The loose fragments are removed and the rough areas smoothed off. Sometimes the damaged joint surfaces need additional attention. Small areas may be improved with “micro-fracturing” (drilling small holes into the underlying bone) at the time of surgery. Large areas in young patients may be considered for chondrocyte grafting. In some cases, re-alignment of the leg (osteotomy) may also be considered.



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## **Osteoarthritis**

The final endpoint of wear and tear is osteoarthritis. The amount of improvement that can be in these cases is best predicted by the presence of “mechanical” symptoms such as catching and clicking. Aching rarely improves. Minor additional operations may be undertaken such as “micro-fracturing” or lateral release. Typically we advise muscle strengthening, physiotherapy and NSAIDS before and after the surgery. Other operations such as chondrocyte grafting, re-alignment osteotomy, or a partial or total joint replacement might be recommended.

## **Major procedures**

More major procedures may be done in combination with arthroscopy – eg cruciate reconstruction, chondrocyte grafting and realignment osteotomies. The rehabilitation for these is substantial and for this reason are usually only done if you have provided written consent.

## **Can I watch?**

It is possible to watch the television screen if under a spinal anaesthetic. The anaesthetist may have to weigh up your desire to watch with anaesthetic considerations. Please discuss with the anaesthetist prior to surgery.



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## What are the risks of arthroscopy?

### Tenderness and swelling

Tenderness around the scars is common, and can make kneeling difficult for up to six weeks (although usually it is less than this).

The portals can get an area of swelling like a pea under the skin maximal at six weeks.

### Numbness & numbness

A small numb area over the front of the knee can occur. With time these areas of numbness usually becoming smaller. Large areas are rare, more likely in complex surgery requiring additional portals.

### Haemarthroses

Bleeding into the knee after the surgery occurs in 1% of patients. It slows down recovery, requires crutches and creates an annoyance for you. Occasionally the swelling is dramatic enough to require re-operation.

### Infection

Infection after knee arthroscopy is uncommon (about 1 in 600 patients). Infections often require readmission to hospital.

### Pain

Minor pain requiring tablets is common in the first few days. Unusual pain may indicate a problem. In the first instances, take the prescribed tablets and use an ice pack. If it is not settling contact your surgeon. Uncommonly, a patient may have "complex regional pain syndrome" which can be debilitating.

### *Failure to find the problem*

Rarely, an arthroscopy may not provide a definitive diagnosis, for example a torn cartilage may not be apparent or a loose

body not found. Some knee problems are not inside the knee joint, for instance tight hamstrings, problems in the femur or hip arthritis may cause knee pain. Direct blows to the front of the knee damage structures apart from the inside of the knee. If symptoms persist, an MRI or other tests may be used to help identify the problem.

### DVT & Pulmonary embolism

The incidence of DVT & PE is low-approximately 1 in 20 000. Patients most at risk have a personal or family history of this problem and should tell their surgeon so additional precautions can be taken.

### Exacerbation of pain

Fibromyalgia is an uncommon pain problem. Surgery can exacerbate the pain. Another group of patients at risk are those with osteoarthritis, which sometimes appears mild on the x-ray but may turn out to be the predominant problem.

### Other rare complications

There is no absolute limit to complications of surgery and anaesthesia. Arterial injury, limb salvage and compartment syndrome have been reported. Please discuss with the surgeon prior to surgery.

### Is it always done as day surgery?

Most standard arthroscopic surgery is done as day surgery. Occasionally for either medical or social reasons you may be admitted overnight.



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## What happens after the surgery?

Typically, within an hour or two after the surgery, the anaesthetic will have worn off and, you will be able to go home. You will not be able to drive yourself home, and until the following day not make any business or important decisions. An instruction sheet and summary of the surgery will be provided.

## Tablets

You will probably need some painkillers when the local anaesthetic wears off – eg Panadeine forte. Anti-inflammatory tablets (eg Naprosyn, Voltaren, Celebrex or Mobic) are prescribed if there is damage to the joint. If you have no pain, then the tablets are not needed. About half our patients benefit from using anti-inflammatories for a week or so.

## Bandaging

The knee will have a bandage on it. The bandage is removed after three days. It can be replaced if it is uncomfortable or falling off. An elastic knee brace or tubigrip may help control any swelling.

## Wound dressings

Under the bandage are small plastic dressings. These usually stay on until reviewed in the rooms. Specific instructions will be given upon discharge from hospital.

## Physiotherapy

Physiotherapy is required for lateral release (within 3-4 days of surgery). If you were using a physiotherapist prior to surgery, it would be worthwhile making an appointment for 2-5 days after the surgery.

## Next appointment with your surgeon

A review appointment with your surgeon is made for typically 10-12 days after the

surgery to remove sutures, discuss findings, discuss future plans, and whether further medications or physiotherapy is required.

## Urgent problems

Depending on the urgency, it may be necessary to attend an emergency department such as at St John of God Ballarat. If you are not sure, phone the consulting rooms during office hours on 53322969. Out of hours, contact your surgeon on his mobile phone, or St Johns emergency department on 5320 2127.

## First Six Weeks

The small incisions (portals) will heal by one week. Swelling then occurs, like a pea under the skin because 4-5 separate layers each develop their own patch of thick scar tissue. This eventually smooths out again, but while the scar tissue is increasing it is tender to kneel on.

## Should I have an MRI first?

The surgeon routinely uses MRI planning for patients who have multiple injuries to their knee. Acutely injured knees might also require an MRI to help workout the timing of the surgery.

There are those who may be unlikely to benefit from arthroscopy because the symptoms are mainly aching without mechanical symptoms, or without joint line tenderness, then an MRI might be undertaken.

MRI is a useful tool, but is not as accurate as arthroscopy. It doesn't identify which patients will benefit from smoothing cartilage damage or having a lateral release and it misses some torn cartilages. In some patients it may make better sense to just get on with the surgery.



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## Checklist prior to surgery

- Have you advised your surgeon of significant medical history?
- Tell your surgeon about blood thinners such as Warfarin, Iscover, Plavix, Aspirin
- Tell your surgeon about unusual pain responses in the past – eg Fibromyalgia
- Tell your surgeon about previous operations or injuries to the knee
- Tell your surgeon about any allergies
- Submit hospital paperwork
- Do you have any infections in your body? If one develops prior to surgery, please telephone your surgeon.
- Arrange a driver to take you home
- A magazine to read whilst waiting
- Do you know when to fast from? (You cannot eat for at least 6 hours prior to surgery)
- Is a medical certificate required? Telling the surgeon prior to the operation will ensure the correct certificate type (eg Work Cover, TAC, Carers Certificates).



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