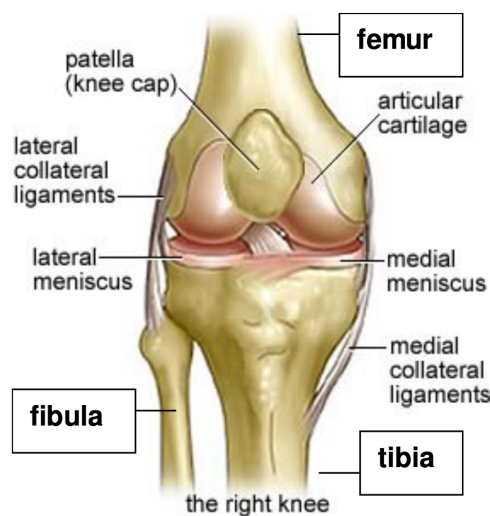


Patient Information And Rehabilitation Guidelines Following Atlas Knee Surgery

This booklet aims to improve your understanding of Atlas knee surgery and the rehabilitation afterwards.

Anatomy

Osteoarthritis can affect any joint in the body but is more common in joints in the lower limb weight-bearing joints, eg hip and knee.



A joint is formed where two bones meet. The ends of the bones, which form the joint, are covered in articular cartilage.

This provides a smooth, slippery and low friction surface that also cushions the joint. Healthy cartilage absorbs stress and allows the bones to glide across each other smoothly.

Osteoarthritis

The word arthritis means joint inflammation. Also known as 'degeneration' or 'wear and tear' arthritis, osteoarthritis is the most common type of arthritis and develops over a long period of time.

It affects the articular cartilage, which can start to wear away causing bone to rub against bone. Sometimes this affects one side of the knee joint more than the other, usually the inside side of your knee.

Research shows that knee arthritis can begin or progress if the joint is exposed to excess stress or load, which can result in pain and loss of motion. Several conditions can lead to joint overload including anatomy, injury or obesity. When too much load is placed on the joint, the progression can lead to painful knee arthritis. Restoring the joint to normal loading conditions may relieve the pain while maintaining healthy cartilage.



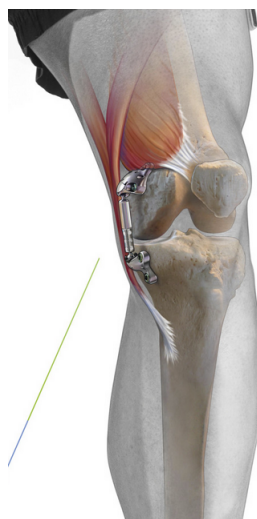
The goals of treatment include minimising pain, restoring normal activity levels, and slowing disease progression. While drugs and certain cartilage repair procedures may temporarily relieve pain, they often do not treat the underlying problems that led to arthritis. Although some invasive surgical procedures can effectively reduce joint stress, they often involve permanent changes to the joint's natural anatomy, which may limit future treatment options.

What is the Atlas System?

The Atlas System offers an option between injection treatments and high tibial osteotomy treatment, and can provide pain relief with the preservation of the patients own knee and continuation of impact activities and heavy manual work, unlike partial or total joint replacement where such activities may lead to early failure of the replacement and the need for revision joint replacement.

The Atlas system is an implantable joint unloader that works like a shock absorber for your knee. The concept has been validated to provide pain relief for patients since it's predecessor, The Kinespring System has been in clinical use since 2008 with over a thousand cases done worldwide. The lessons learnt from this experience have been incorporated into the Atlas system which has been in clinical use for 18 months and implanted over 100 times.

The Atlas system is specifically designed to allow arthritis sufferers to maintain high activity or productivity levels. The Atlas System is manufactured from advanced biomaterials and has passed durability and biocompatibility testing.



The Atlas system may be appropriate if you:

- Suffer from pain on the medial (inner) side of your knee, especially with activity
- Desire to be more active again
- Have medial compartment knee osteoarthritis (OA)

The Atlas System will not cure your osteoarthritis, but it may provide pain relief.

The procedure

The AtlasSystem is implanted under the skin, alongside the knee joint. No bone, ligament or cartilage is removed. The implant and procedure are specifically designed to facilitate quick recovery while maintaining future treatment options. As the System is implanted outside the joint capsule it will be straightforward to remove if needed and leave other options such as high tibial osteotomy, unicompartmental knee replacement or total knee replacement open to the patient and their surgeon.

The implant and procedure are specifically designed to facilitate quick recovery while maintaining future treatment options.

The Atlas System is carried out under general anaesthetic. The procedure requires one medial approximately 10 cm incision on the inside part of the leg, above and below the knee joint. The Atlas System is inserted via this incision and secured with bone screws to the femur and tibia (the major bones in your upper and lower leg). No bone, ligament, or cartilage is removed.

X-ray images may then taken to ensure that the Atlas System is correctly positioned and functioning properly.

Further information about the Atlas system can be found on: www.moximed.com

Other options for knee arthritis

Treatment for knee osteoarthritis is based on individual symptoms, activity level and other medical conditions. The goals of osteoarthritis treatment include minimising pain, restoring normal activity levels and slowing disease progression.

Some treatments such as a high tibial osteotomy, a unicompartmental knee arthroplasty or a total knee replacement can reduce the stress on your knee and relieve pain, but they involve more invasive surgery.

High tibial osteotomy is a surgical procedure to realign the leg and reduce the pain you have from your knee by transferring the body weight to the preserved normal outer side of the knee.

Unicompartmental knee arthroplasty is a surgical procedure used to relieve arthritis limited to a single part compartments of the knee in which the damaged parts of the knee are replaced.

A total knee replacement is a surgical procedure to replace both sides of the knee and the kneecap joint to relieve pain and disability.

In contrast the Atlas Knee Implant System is designed to absorb excess knee loads whilst preserving your natural joint anatomy in a less invasive surgical procedure.

Complications

Complications do occur. Some are minor and some require further surgery. It is important you understand this before proceeding with surgery. Examples include:

Complication	Recorded in literature
Anaesthetic risks (discussed with your anaesthetist)	
Infection	
Deep vein thrombosis (clot in the leg)	
Pulmonary embolism (clot in the lung)	
Further surgery to the knee	
Fracture	
Damage to vessels or nerves	

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.

Pre-operative Assessment

An assessment of your fitness to undergo surgery including a detailed medical history, height, weight, blood pressure and pulse will be performed before surgery. Blood tests and a heart trace (ECG) may also be needed.

The Day of the Operation

You are asked not to drink or eat anything for at least 6 hours before your operation.

You will be seen by Professor McNicholas and your Anaesthetist before your operation.

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

Surgery usually takes around 30 – 60 minutes.

You will wake-up in the theatre recovery room. On return to the ward you will have the following:

- Dressings – wool and crepe bandage on the knee and a splint
- Drips and drains – there may be small tubes in the back of your hand. You might also have a tube into your bladder (catheter).
- Analgesia – this may be oral medication or patient controlled analgesia (PCA), which looks similar to a drip.

You can be **discharged from hospital if progressing well, managing exercises, and safe on the stairs.**

Discharge Instructions

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 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.

General Advice

Return to work will depend greatly on the job that you do (desk-based jobs 2-4 weeks; manual jobs 6-12 weeks; jobs requiring ladders etc. 3-4 months).

Return to driving at 6 weeks for manual geared cars 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>

Follow-up

You will be seen at 2 weeks, 3, 6, 12 weeks and 3, 6, 9, 12 months, 2, 5, 10 years annually after that. There will be an internet database used to collect your outcomes scores and record details of your knee operation.

Rehabilitation (Physiotherapy) Programme

Physiotherapy programme to follow.

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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Date last reviewed:

April 2016