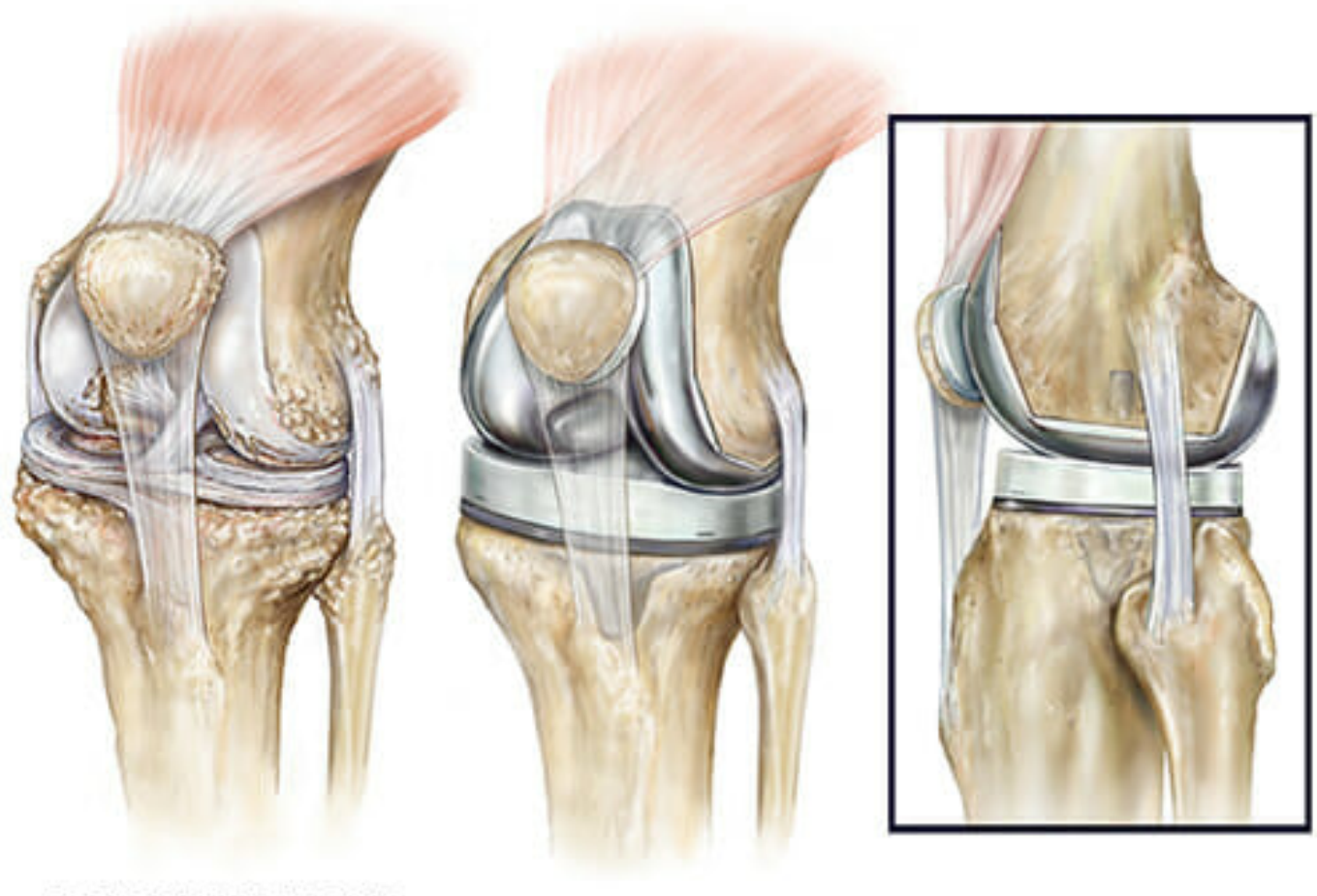
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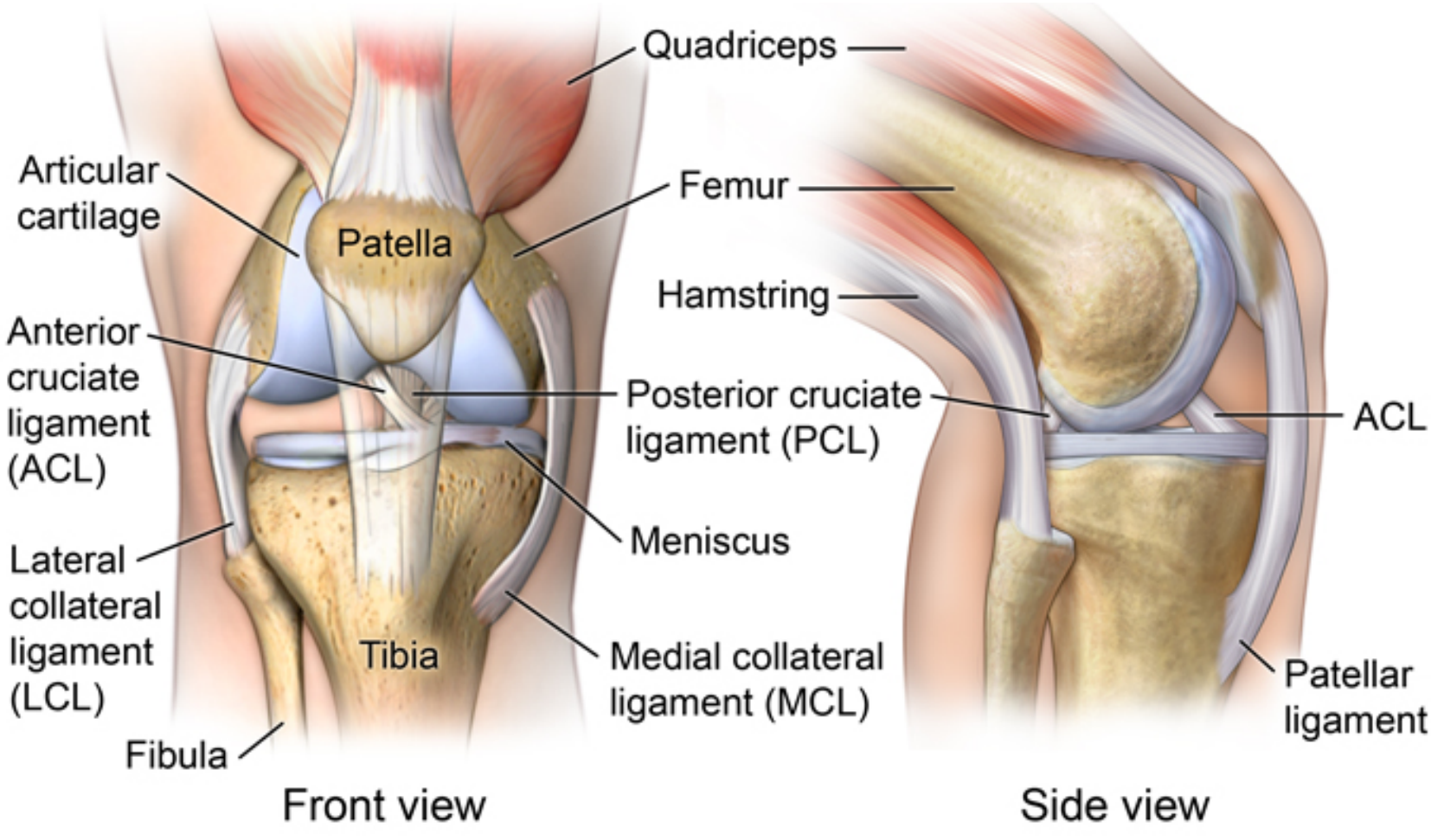
Knee arthritis and Total knee replacement



ARTHRITIC KNEE JOINT

ARTIFICIAL KNEE JOINT

Normal Anatomy of the knee



The knee joint is a complex weight bearing joint that relies on ligaments and muscles to provide stability. The knee is made up of three bones: The thigh bone (femur), the shin bone (tibia), and the kneecap (patella). There are 4 major ligaments in the knee: the Anterior cruciate (ACL) and posterior cruciate ligaments (PCL), Medial collateral (MCL) and lateral collateral ligaments (LCL). There are a number of other smaller ligaments as well as tendons around the knee which contribute to stability and function.

The surfaces of the femur, tibia and patella inside the joint are covered by articular cartilage which is smooth, and together with the joint fluid, act to reduce friction inside the knee during movement.

Inside the joint there are 2 “C-shaped” discs of cartilage attached to the tibia known as the medial and lateral meniscus. The meniscus gives extra cushioning to the cartilage inside the joint to prevent wear and tear. The menisci become soft with age and can tear or become frayed. This will accelerate the progression of arthritis and can result in pain, clicking or locking of the knee.

Arthritis

Arthritis is an age related degenerative condition which results in the cartilage covering the femur, tibia and patella to wear out. This leaves a rough joint surface with the formation of bony spurs.
End-stage arthritis is painful and can cause stiffness and a grinding or grating feeling in your knee.

In some patients arthritis may develop early. This is called ‘secondary arthritis’ and may be as a result of an autoimmune condition, such as rheumatoid, gout, or a previous injury around the knee.



As arthritis worsens you may notice that your legs start to become ‘bow-legged’ or ‘knock-kneed’, this is due to unequal wear of the cartilage on one side of the joint.

Symptoms:

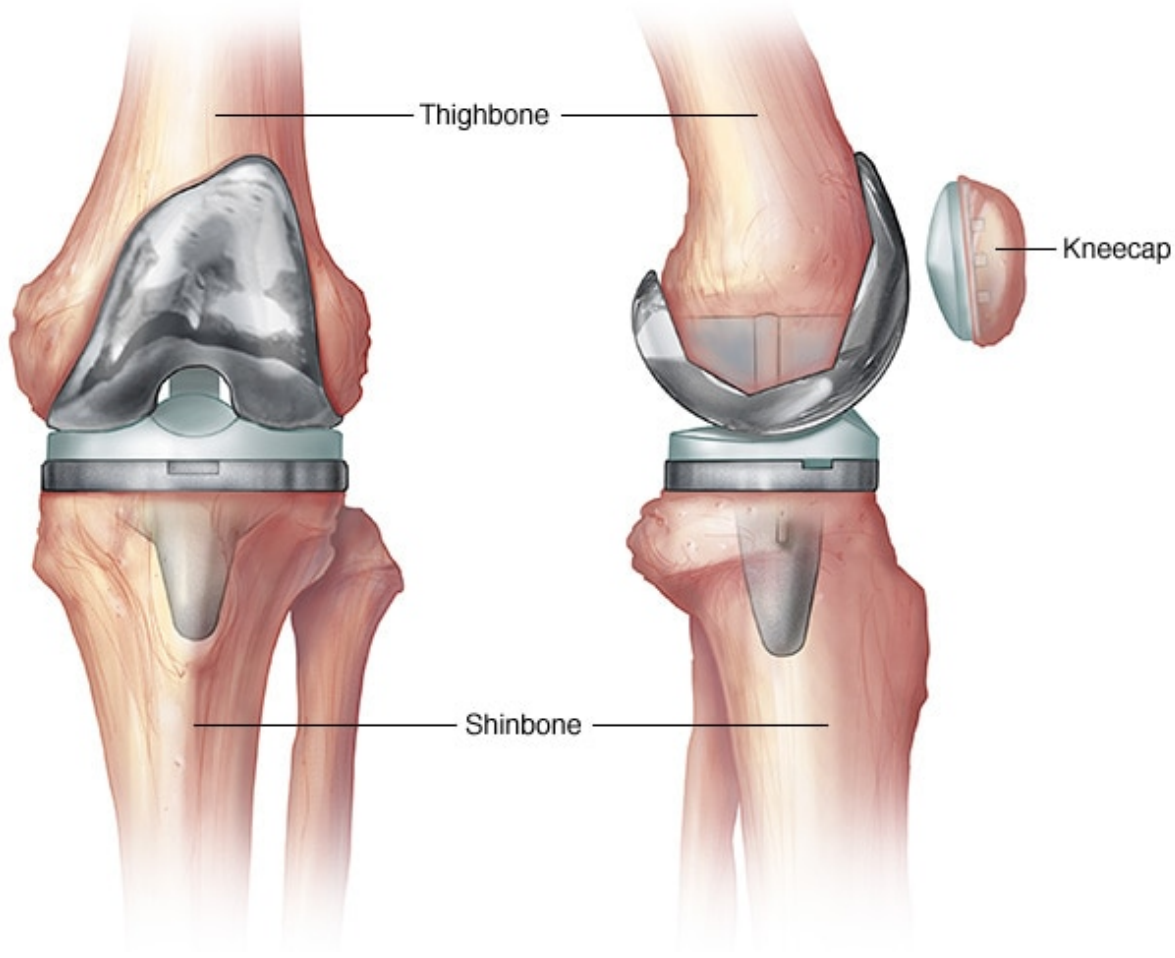
- **Pain -** often a dull ache which is worse at night and with activity.
- **Reduced movement -** a loss of full extension and reduced bending of the knee.
- **Mechanical symptoms -** such as clicking, grating or a catching sensation inside the knee.

Treatment

Unfortunately this condition is not reversible and worsens over time. Mild to moderate arthritis is typically managed with non-surgical management, however severe arthritis is best managed with a joint replacement.

<u>Non-surgical management</u>

- **Weight loss**
- **Activity modification -** Avoid activities that cause pain including vigorous weight bearing activity. Cycling, swimming and elliptical trainers will put less force through the knee, whilst helping to maintain joint range of movement, muscle strength and weight loss.
- **Non steroidal anti-inflammatory medication -** Medication such as Voltaren and Naproxen can reduce pain and swelling.
- **Physiotherapy -** Specific exercises under the guidance of a physiotherapist can restore movement and strengthen your knees. Strengthening the thigh and hamstring muscles can relieve pain and increase movement.
- **Steroid injection.** If weight loss, medication and physical therapy do not relieve your pain, an injection of a local anaesthetic and a cortisone inside the knee joint may be helpful. Cortisone is a very effective anti-inflammatory medicine; however, it is not effective for all patients and should be used with caution in diabetics.



Surgical management

A total knee replacement is considered the “Gold Standard” surgical treatment for advanced arthritis of the knee. During a total knee replacement the damaged cartilage from the ends of the femur and tibia are removed and replaced with well-fitted metallic implants with a ‘plastic’ (polyethylene) spacer inserted between them. The undersurface of the patella is also replaced with polyethylene. Most of the major ligaments and tendons are left in place to allow for normal movement and good stability of the knee.

Joint replacements are not recommended in young patients (<50 years) because the average ‘lifespan’ of a prosthesis is 15-20 years. A worn out prosthesis can be replaced with a new one, however, the results may not be as good.
Although you can expect a significant improvement in pain and movement with a knee replacement, a knee replacement will not feel or move exactly the same as your old knee. Depending on the design of the prosthesis, you may notice a metallic ‘clunk’ while bending and extending your knee and kneeling down may be uncomfortable or difficult.
You will need to avoid high impact exercises like running / jumping in order to preserve the lifespan of your knee.

Should you decide on surgical management you will be admitted into the hospital on the morning of the surgery.
Please take note of the following:

- Ensure that you do not eat or drink anything on the day of surgery, unless otherwise instructed by Dr. Stewart or his receptionist. You can drink a small amount of water to take your chronic medication on the day of surgery.
- Remember to bring all your chronic medication with you for your hospital stay.

- If you are taking any “blood thinners” such as Warfarin, Ecotrin, Plavix or Xarelto - please inform Dr. Stewart of this and please consult with your physician or cardiologist who prescribed the medication. This medication needs to be stopped five days prior to surgery.
- Please ensure that you have received medical aid pre-authorisation prior to the day of surgery. It is your responsibility to contact your medical aid to obtain pre-authorisation. Please forward the authorisation number to admin@stewartorthopaedics.co.za at least one day before admission.

On the day of surgery you will be seen by an anaesthesiologist who will discuss the anaesthetic with you. The surgery takes approximately 2,5 hours. After the surgery you will overnight in hospital and physiotherapy will commence the following day.

After Surgery

After surgery you will wake up in the ward and your knee will be in a padded compression bandage. You will be given an above knee compression stocking which should be worn for 4 weeks once the compression bandage is removed.
A physiotherapist will see you in the ward after your surgery where they will teach you exercises which you are required to do at home approximately 3 - 4 times per day.
An X-ray will be done before leaving the hospital to check the position and alignment of the prosthesis.
You will be discharged from hospital between 3 - 5 days after the surgery provided your pain is well controlled. In the immediate post operative period you will experience some pain and discomfort in the knee which can last up to 6 weeks, however it should improve after the first 2 weeks. It may take up to 6 months before your knee is completely pain free.
You will be discharged with medication prescribed for the pain, please ensure that you take it as prescribed. Should you require additional analgesia then you can either contact Dr. Stewart’s rooms or your GP.
You will be given an Ice-pack during your hospital stay. Please ice your knee 5 - 6 times per day for a 20 min duration.

You will be allowed to shower or bath, however do not get the dressing wet - use a black rubbish bag sealed at the top or a silicone sleeve. When showering - put a plastic chair in the shower so that you do not slip. Be careful when getting in and out of the shower.

Driving - Driving is not recommended for the first 6 weeks after surgery. The only exception to this is if the surgery was performed on your left leg and you drive an automatic vehicle.

Follow up - Please make an appointment between 10-14 days after the surgery to see Dr. Stewart in the rooms for a wound inspection and to remove the stitches. Please do not remove your wound dressing until he has seen you. If the dressing comes loose then a similar wound dressing can be purchased from your nearest pharmacy.
Dr. Stewart will review your progress every 6-8 weeks for approximately 6 months, or longer if required.

Returning to work - Most patients will be able to return to light office work between 4 - 6 weeks after the surgery. If your job requires any form of manual labour then it is unlikely you will be able to return to normal duty. If you are required to perform these duties at work then you should discuss the availability of an alternative role at the workplace with your employer.

Complications

All surgeries carry the risk of potential complications. In most cases the decision to proceed with surgery is made because the advantages of surgery outweigh the potential disadvantages.
The risk of a significant complication associated with knee replacement surgery is approximately 5%, therefore, in order to make an informed decision the following complications are the most common:

Stiffness - Almost all patients will experience some degree of stiffness, mostly mild and lasting only a few weeks. Severe or prolonged stiffness can be prevented by strict adherence to the physiotherapy protocol.

Infection - All efforts are made to minimise the risk of infection, however, some patients, especially diabetics and smokers, are at an increased risk of getting an infection. In order to prevent the risk of infection the surgical procedure is performed in a sterile environment. Antibiotics are given at the time of the procedure and for 24hours afterwards and occlusive dressings are used until the wound has healed.
Post surgical infection may be a simple infection involving only the skin and wound edges, but sometimes it may involve the bone or joint. Despite adequate antibiotic treatment, a post surgical infection often requires additional surgical procedures in order to remove any infected tissue or fluid.

Deep Vein Thrombosis (DVT) - This term refers to a blood clot which forms in the deep veins of your leg. Risk factors include smoking, being overweight, the use of the oral contraceptive pill and prolonged periods of inactivity. Treatment of a DVT involves taking blood thinning medication for between 3 - 6 months to try and dissolve the clot. If a blood clot comes loose it may lodge in the lungs resulting in a pulmonary embolism which can have devastating results. During your hospital stay you will be given a daily injection (Clexane) to prevent a DVT. When you are discharged you will be given a tablet or an injection to take home with you which must be used for 4 weeks.

Fracture - This is a rare intra-operative complication but may occur after surgery if you fall while trying to get out of bed or walk around. It is important to follow the strict post-operative rehabilitation protocols to ensure that you are safe whilst walking with crutches or a walking frame.

Injury to a major blood vessel in the leg - An extremely rare complication. If the main blood vessel to your leg is injured during the surgery it would need to be repaired urgently by a vascular surgeon. Any major blood loss as a result of this may require a blood transfusion.

Nerve injury - This rare complication is usually a result of ‘bruising’ to the nerves and can result in some numbness, tingling or weakness of the foot or lower leg. In most cases it will resolve completely within 6 - 12 weeks. A nerve conduction study can be performed to assess the severity of the nerve injury.

Anaesthetic complications - Your anaesthesiologist will explain the most common potential complications.

Other rare or unusual complications which haven’t been discussed here can result from surgery or anaesthesia. If you are concerned about any specific complication or the advantages and disadvantages of the decision to proceed with surgery you can discuss these with me before the operation.

Step-down / rehabilitation

Often patients require additional nursing care and rehabilitation after discharge. A step-down facility acts as an intermediate facility between the hospital and your home, providing nursing care and physiotherapy to assist you before you are strong enough to go home. Most patients will be discharged to a step-down facility after a knee replacement. The ward clerk will assist you to get medical aid authorisation for step-down while you are in hospital. You have the choice of which step-down facility to go to.

Recovery

In order to ensure the best possible outcome following surgery, it is essential that you visit a physiotherapist regularly as well as complete a home based rehabilitation program on a daily basis. A physiotherapist and biokineticist play a vital role in ensuring that your knee returns to normal function. A complete recovery can expect to take in excess of 6 - 12 months.