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A Patient's Guide to Robotic Assisted (Unicompartmental) Knee Replacement Surgery

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Understanding Your Unicompartmental Knee Replacement Surgery

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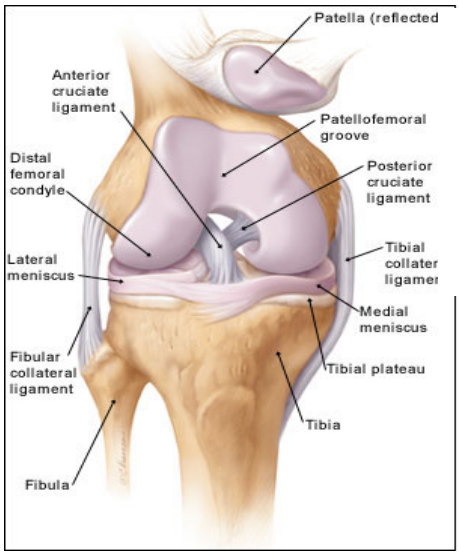
INTRODUCTION

A Knee replacement is an operation for serious **arthritis of the knee.** To understand your **unicompartmental knee replacement** you should first understand a little about the structure of the knee joint. The knee joint is a hinge joint between the thigh bone (the femur) and the shin bone (the tibia). It also incorporates the kneecap joint (the patella). Between these three bones the knee bends like a hinge but also rotates slightly to allow greater flexibility. Where the thighbone and shinbones meet, they are covered by a slippery material called cartilage. This allows the knee to glide easily when bending. The whole knee is held together with ligaments. Arthritis damages the surfaces where the three parts of your knee slide over each other. The worn cartilage no longer serves as a cushion and the damaged bones rub together, they become rough, with a surface like sandpaper. This hurts, and stops your knee bending the way it should. It also makes your knee weak and sometimes bends it out of shape (bowlegs or knock knee) . In your case, only one of the areas of your knee has significantly worn away. This means it is possible to replace just the worn part of the knee and leave the remaining healthy cartilage alone.This is a picture of a healthy knee, and to the right, a unicompartmental knee replacement.



BEFORE YOUR KNEE REPLACEMENT SURGERY

It important that, despite the discomfort in your knee, you remain as mobile and active as possible. This will maintain your muscle strength and improve the speed and quality of your recovery from the surgery. If you smoke, then this is an ideal opportunity to consider giving up. Smoking increases a number of potential complications following surgery and to gain the full benefit you should stop at least 6 weeks before your surgery.

The pre assessment visit before surgery

You will undergo a number of tests, x-rays and scans, and you will receive a clinical examination and have a consultation with me. I will make sure you understand the procedure its alternatives, benefits and most importantly any potential pitfalls or complications. You will then be asked to sign the Consent form. This is a document stating you understand what is involved and want to proceed with the surgery. You will receive a copy of this document.

The Night Prior to Surgery

You will be asked not to eat or drink anything for 6 hours prior to your surgery.

THE OPERATION

What type of anaesthesia is used in my Knee Replacement Surgery?

Most of our knee replacement patients receive spinal anaesthesia however, general anaesthesia is also used in certain patients. Your anaesthetist will discuss the type of anaesthesia used with you prior to surgery.

With spinal anaesthesia, the method we strongly recommend, a narrow catheter is placed between two bones of your spine. A controlled flow of anaesthetic goes through the narrow catheter, anaesthetising your body from the abdomen down so you will not feel anything during surgery. If you do not want to be awake during the surgery, you can, and most people also want, a sedative so that you are completely unaware of proceedings.

If you are undergoing general anaesthesia, you will first be put to sleep by intravenous medication. A mask or a breathing tube then gives an anaesthetic gas to keep you asleep.

What is involved in my Knee Replacement Surgery?

A unicompartmental knee replacement is a big operation. It generally takes 1 to 2 hours. I will use the MAKO robot to assist in performing the surgery. This achieves greater technical precision that we have ever been to achieve in the past. I will make a 6 inch incision over the front of your knee and a small incision on your thigh and shin. I will remove the damaged / arthritic ends of the thighbone and shinbone and then replace these with a metal knee that has a polyethylene bearing to replace the cartilage and allow low friction between the components. I will only replace the damaged areas of bone, either between the shin and thigh bone (a traditional unicompartmental knee replacement) or between the kneecap and thigh bone (a patellofemoral replacement). The components are held in place by a medical glue we call cement.

Explain to your relatives / friends that you will be away form the ward for up to 4 hours. The theatre schedule is flexible and no specific time can be given to you as to when in the day your surgery will occur but I hope to keep your waiting to a minimum. After surgery is completed you will be moved to the recovery area in the operating department for a short time. You will then be transferred to your ward bed where your relatives and friends will be allowed to be with you.

Is there much Pain with Knee Replacement Surgery?

Normally following your surgery you will experience a little pain. If following the surgery you are experiencing severe pain, please inform the nurse. The nurse will notify the Doctor who will then make an assessment and provide you with appropriate pain medication. We aim to keep your pain scores below 4 out of 10.

RECOVERING FROM YOUR KNEE REPLACEMENT SURGERY

- A dressing and tight bandage will be over your whole leg. The bandage will be removed after 48 hours and the dressing changed at this stage if there is any staining. Normally this is left untouched and will be changed on the day prior to your discharge. It may be necessary to change the dressing earlier, particularly if you have some minor bleeding form the wound.
- I will use a stitch or clips to close your incision. This will need to be removed at 10-14 days following the surgery.
- An IV (intravenous infusion) will be giving you fluid into your arm.
- Vital signs will be taken which consist of blood pressure, pulse, respiratory rate and temperature
- You can normally drink fluids and eat as soon as your appetite returns.
- We aim to get you mobile on the day of your surgery. You should expect to go home the following day. Please remember that each person is different so times will vary, if you are older, in poor physical condition, or not very mobile it may take longer to recover from your surgery.
- **Please note that after Knee Replacement Surgery it is not recommended to drive for 4-6 weeks. You must be able to perform an emergency stop before attempting driving.**

REHABILITATION AND PHYSIOTHERAPY

Your participation in physical therapy is essential to the success of your surgery. The more committed and enthusiastic you are, the quicker your improvement and recovery will be. You will receive extensive physiotherapy during your stay in the hospital, and we will make sure you are safe and mobile prior to your discharge. A physiotherapist will visit you on the day after surgery and will start to instruct you on the exercise program. You will receive physiotherapy each day following the surgery and we strongly encourage you to achieve three goals before discharge.

Be able to lift your leg straight off your bed.
Achieve a full straightening of the leg
Be able to bend the knee to at least 70 – 90 degrees

The physiotherapist will guide you through your recovery. Please take note of the ward staff and physiotherapists advice when you commence your mobilisation for the first time. These sessions are normally one on one with a physiotherapist but **I would encourage you to practice and continue your exercises in between visits**. If it is deemed necessary for you to have outpatient physiotherapy, this will be organized prior to your discharge home.

ALTERNATIVES, BENEFITS AND POTENTIAL PROBLEMS

ALTERNATIVES

Do I need this operation ? Lots of people have arthritis in their knees and only a small number need a knee replacement. Unicompartmental knee replacement surgery is very successful in eliminating pain form the arthritic knee. When your pain has reached a level where your knee wakes you from sleep, restricts your mobility, or stops you from doing things you used to do, such as working, going out with friends and family, gardening, housework or shopping you are suitable for a knee replacement surgery. It will reduce / eliminate your pain and improve your mobility.

- If you have reached this stage the only alternatives to replacement surgery are continued non surgical treatment with pain killers, weight loss, walking aids and physiotherapy.
- Occasionally injection therapy is offered but this usually only provides temporary relief of pain.
- If you choose not to have this operation, your arthritis will not get better but the disease usually progresses very slowly, often over many years. Your pain and stiffness may even ease a little with time. Having arthritis can make your life more difficult, but it's unlikely to make it shorter.

If you are younger (< 50 years old) or have less severe arthritis, alternatives which may exist include keyhole surgery to wash out the knee (Arthroscopy) or breaking and re-setting your bone to change the alignment of your leg (osteotomy). Not all patients are suitable for these procedures although but I would be happy to discuss them with you.

Why don't I just have a total knee replacement ? Until 15 years ago this would have been the traditional choice of surgery. Developments in material science and our understanding of knee arthritis and normal knee motion have allowed the development of partial knee replacements. The outcomes from unicompartmental knee replacements are superior in terms of the function of the knee and they appear to have a longer life span than a traditional total knee replacement. An added advantage is that your stay in hospital is shorter, your pain is less, recovery is quicker and overall functional outcomes better than in a full knee replacement. Should your unicompartmental knee replacement wear out and need re-doing, the operation to convert it to a total knee replacement is simpler and more successful than re-doing a worn out total knee replacement.

BENEFITS

Knee replacement surgery is continually evolving however is very successful in treating the pain of arthritis. It is important to note that although successful at eliminating your pain, it is not an operation to give you back a 'normal' knee. The main aim is to provide a painless knee with adequate movement for the majority of daily activities. Success of knee replacement surgery depends upon many factors of which rehabilitation is of utmost importance. The most perfectly performed surgery can be quickly undone by inappropriate or unsupervised rehabilitation, particularly in the early stages following surgery.

POTENTIAL COMPLICATIONS

These are uncommon, but do occur occasionally.

Bleeding into the knee joint / wound may require draining in the immediate postoperative period. You may also require a blood transfusion.

Bruising around your knee, thigh or calf is common and not of great significance.

Thrombotic disease. Blood clots in the legs (3%) and in the lungs (1%) can occur. We take precautions to minimise the risks of these and after the surgery will give you medication to thin the blood slightly. We will also ask you to wear anti-thrombotic stockings for a few weeks following your surgery. Becoming active and mobile soon after the surgery will also reduce your risks. If these clots do occur you will be prescribed Warfarin (a blood thinning medication) to take.

Infection (3%) may result in redness / heat in the skin of the knee or discharge from the wound. DO NOT TREAT WITH ANTIBIOTICS until you have contacted your surgeon.

Nerve injury (0.1%) may result in weakness of your calf muscle leaving you with a 'dropped foot'. This is usually temporary and only very rarely permanent.

Loosening. This is an artificial joint. It has a finite life span and although techniques and implants are constantly evolving the recognised life span of most knee replacements is 15yrs in 90% of patients. If the replacement wears out you may experience further discomfort and require a revision (re-do) procedure.

General medical / anaesthetic problems. This is a big operation and will put strain on your lungs and heart. A small number of people have serious problems such as a heart attack, a stroke, or a bad chest infection soon afterwards. These things are more likely to happen if you already have heart disease, or a bad chest. It is a good idea to stop smoking before an operation because smoking makes all these problems more likely.

QUESTIONS

If you have questions about your surgery please ask one of my team at the pre-assessment clinic or once admitted for surgery. If you have questions about your rehabilitation please contact your **physiotherapist**.

If you have any problems, especially if you experience any excessive skin redness, persistent wound discharge, excessive swelling, or severe pain during or after exercise, call Mr Houlihan-Burne's secretary on the numbers given on the front of this pack.

Call your **GP** if you develop calf pain and tightness, shortness of breath, or if you develop a fever and feel unwell.

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