Forename……..

Surname……

Hospital Number……...

D.O.B……../…...…./……..……

Responsible surgeon……..…….

Job Title……..……

OPERATION: …… Robotically Assisted Knee Replacement
(Knee Arthroplasty)

PROCEDURE: The knee is an important hinge joint and as it is weight-bearing can be prone to "wearing out". Arthritis is painful and disabling and you and your surgeon may have decided that a knee replacement may be your best option.

A knee replacement is a surgical procedure, in which the injured or damaged running surfaces of the knee are replaced with artificial parts which are secured to the bone.

You will be seen by the surgeon before the operation. They will take this opportunity to draw (mark with a pen) on your leg. This is to make sure the correct leg is operated on. If you have any questions, this might be a good time to ask them.
An anaesthetic will be administered in theatre. This may be a general anaesthetic (where you will be asleep) or a local block (e.g. where you are awake but the area to be operated is completely numbed). You must discuss this with the anaesthetist.
A tight inflatable band (a tourniquet) may be placed across the top of the thigh to limit the bleeding. Your skin will be cleaned with anti-septic solution and covered with clean towels (drapes). The surgeon will make an incision (a cut) down the middle of the knee. The knee capsule (the tough, gristle-like tissue around the knee) which is then visible can be cut and the knee cap (patella) pushed to one side. From here, the surgeon can trim the ends of the thigh bone (femur) and leg bone (tibia) using a special bone saw. Some surgeons also remove the underside of the knee cap.
Using measuring devices, the new artificial knee joints are fitted into position. The implants have an outer alloy metal casing with a "polyethylene" bearing which sits on the tibia. A polyethylene button is sometimes placed on the underside of the knee cap.

When the surgeon is happy with the position and movements of the knee, the tissue and skin can be closed. This may be done with stitches (sutures) or metal clips (skin staples). The clips and stitches will need to be removed around 10 days after the operation.

Drains may be used, and if so can be pulled out easily on the ward in a day or two.

When you wake up, you will have a padded bandage around the knee. If you are in pain, please ask for pain killers. If you have pain, it is important that you tell somebody.
You will go for an X-ray the day after the operation and will be encouraged to stand and take a few steps.
You will be visited by the physiotherapy team, who will suggest exercises for you. It is important to do these (as pain allows).

As discussed at our consultation the use of the MAKO robot allows implantation of a knee replacement using computer navigation and robot guided bone cuts. In order to achieve absolute precision of implant positioning, prior to surgery a CT scan is required to define the exact 3D anatomy of the hip, knee, ankle, and long leg alignment. This allows a precise 3D-model of your knee to be constructed. During the operation small additional incisions are made in the thigh and shin bone to attach navigation pins through the bone that are visualised by the robot. These navigation pins are removed at the end of the operation. These steps increase the accuracy of the implantation which traditionally relies on the surgeon using jigs and alignment rods that are inserted into bone and aligned alongside bone. By not drilling into the thigh bone canal to insert an alignment rod blood loss is theoretically reduced. The robot assisted bone cuts are more accurate than those made without a robot. The robot cannot cut beyond the margins defined by the surgeon, and therefore safety is ensured in this manner.

Mr Young was first involved in Navigation & Robotics on his fellowship in Brisbane, Australia, in 2014. He has been using Robotic knee replacements in his UK practice since 2020, and is delighted to now be offering the MAKO system to his patients at KIMS Hospital. The robot is a new device to KIMS Hospital and therefore there will be a learning curve for the surgeon and Theatre team, but the robot is an adjunct to, rather than a substitute for, surgical experience and skill. To date, over 21,000 MAKO robotic assisted lower limb joint replacements have been performed in the UK.

ALTERNATIVE PROCEDURE: Knee replacements are usually performed on patients suffering from severe arthritis (although there are other reasons). Most patients are above the age of 55yrs.
Other alternatives include – Losing weight,
stopping strenuous exercises or work,
Physiotherapy and gentle exercises,
Medicines, such as anti-inflammatory drugs (e.g. ibuprofen or steroids),
Using a stick or a crutch,
Arthroscopy
Using a knee brace,
Cartilage transplant,
Knee fusion (arthrodesis)

Some of the above are not appropriate if you want to regain as much physical activity as possible, but you should discuss all possibilities with your surgeon.

RISKS

As with all procedures, this carries some risks and complications.

COMMON: (2-5%)

Pain: the knee will be sore after the operation. If you are in pain, it's important to tell staff so that medicines can be given. Pain will improve with time. Rarely, pain will be a chronic problem & may be due to any of the other complications listed below, or, for no obvious reason. Rarely, some replaced knees can remain painful.

Bleeding: A blood transfusion or iron tablets may occasionally be required. Rarely, the bleeding may form a blood clot or large bruise within the knee which may become painful and require an operation to remove it.

DVT:(deep vein thrombosis) is a blood clot in a vein. The risks of developing a DVT are greater after any surgery (and especially bone surgery). DVT can pass in the blood stream and be deposited in the lungs (a pulmonary embolism – PE). This is a very serious condition which affects your breathing. Your surgeon may give you medication to try and limit the risk of DVTs from forming. Some centres will also ask you to wear stockings on your legs, while others may use foot pumps to keep blood circulating around the leg. Starting to walk and moving early is one of the best ways to prevent blood clots from forming

Knee stiffness: may occur after the operation, especially if the knee is stiff before the surgery. Manipulation of the joint (under general anaesthetic) may be necessary

Prosthesis wear: With modern operating techniques and new implants, knee replacements last many years. In some cases, they fail earlier. The reason is often unknown. The plastic bearing is the most commonly worn away part

LESS COMMON: (1-2%)

Infection: You will be given antibiotics at the time of the operation and the procedure will also be performed in sterile conditions (theatre) with sterile equipment. Despite this infections still occur (1 to 2%). The wound site may become red, hot and painful. There may also be a discharge of fluid or pus. This is usually treated with antibiotics and an operation to washout the joint may be necessary. In rare cases, the prostheses may be removed and replaced at a later date. The infection can sometimes lead to sepsis (blood infection) and strong antibiotics are required.

RARE: (<1%)

PE: a Pulmonary embolism is the spread of a blood clot to the lungs and can affect your breathing. This can be fatal.

Altered leg length: the leg which has been operated upon, may appear shorter or longer than the other.

Altered wound healing: the wound may become red, thickened and painful (keloid scar) especially in Afro-Caribbeans.

Joint dislocation: if this occurs, the joint can usually be put back into place without the need for surgery. Sometimes this is not possible, and an operation is required, followed by application of a knee brace

Nerve Damage: efforts are made to prevent this, however damage to the small nerves of the knee is a risk. This may cause temporary or permanent altered sensation around the knee. There may also be damage to the Peroneal Nerve, this may cause temporary or permanent weakness or altered sensation of the lower leg. Changed sensation to the outer half of the knee may be normal.

Bone Damage: bone may be broken when the prosthesis (false joint) is inserted. This may require fixation, either at time or at a later operation.

Blood vessel damage: the vessels at the back of the knee may rarely be damaged. may require further surgery

Death: This very rare complication may occur after any major surgery and from any of the above.

Additional risks and complications of robot assisted surgery include:

CT scan radiation. There is radiation associated with the CT scan and this is many times that of a plain x-ray.

Infection of the navigation pin insertion site. This occurs very rarely, significantly less than 1% of cases. The infection will usually respond to antibiotics but may rarely require a return to theatre for treatment. Fracture at the navigation pin insertion site incidence is between 0.06% and 4.8%. This rare complication can occur during and following the surgery. It is likely such a fracture would require an additional theatre procedure to fix the bone. It may be necessary to abandon the use of the robot during the procedure and complete the knee replacement using conventional techniques.

I have read/ understand the procedure, risks and complications. I have asked any questions and raised any immediate concerns I might have.

I understand that I will have the opportunity to discuss the details of anaesthesia with an anaesthetist before the procedure

I understand that any procedure in addition to those described on this form will only be carried out if it is necessary to save my life or to prevent serious harm to my health

Signature…….

Print name……....

Date……./…./20…

2nd Confirmation…….....…… .Date……./…..20….

NAME of SURGEON (Capital letters)……..

SIGNATURE of SURGEON…….

POSITION……..

National Joint Registry
www.njrcentre.org.uk

"I have read and comprehended the Patient Information Leaflet and consent to my personal details being submitted to the National Joint Registry in the knowledge that they will only be disclosed in the public interest or in other circumstances permitted by law. I have been assured and understand that by declining my consent my care and treatment will not be affected in any way."

Signature……..Date……../……./20……..