Innovation in knee arthroplasty

MYKNEE®:
the operation tailored for you!
MyKnee® is a precision instrument which is tailored for each individual patient from a radiological image of their knee.

The MyKnee® technology potentially enables the intervention of knee arthroplasty to be more accurate, faster and less traumatic.

- **More accurate positioning of the prosthesis**\(^{[1,2]}\)
- **Less traumatic procedure**\(^{[3,4]}\)
- **Faster surgery**\(^{[5]}\)

Clinical studies of reference:


This brochure has been produced to help you feel safe and confident about your operation. Questions you may have regarding the surgery and post-operative recovery, are addressed.
MyKnee®: THE OPERATION TAILORED FOR YOU!

Designed for you, by you!

PATIENT MATCHED CUTTING BLOCKS
INTRODUCTION

The knee is the largest and most complex joint of our body. It has a very difficult function: carrying our body weight. Therefore, it is not surprising that the knees are the joints which are most vulnerable to injuries or developing degenerative joint diseases, such as gonarthrosis (arthritis of the knee).

One of the consequences of any joint disease is pain.

Statistics show that roughly one third of the American population over the age of 45 suffer knee pain. Knee pain limits your daily activities, affects your mood, your health, and overall, your general well-being!

You want to get rid of the pain and you can!

There are a variety of surgical and non surgical solutions to treat your disease. Your physician will advise the most suitable treatment, according to your age, activity level and expectations.

Knee pain and stiffness caused by advanced arthrosis is severely limiting and your physician may suggest you undergo a total knee replacement.
KNEE ANATOMY
The knee joint is comprised of three bones: the thigh bone (femur), the shin bone (tibia) and the kneecap (patella). When you flex or straighten your leg, the thigh bone turns on the shin bone, while the kneecap runs along the end of the thigh bone. The leg movement is driven by the thigh muscles, the biggest one being the quadriceps, located in the front of the thigh.

The thigh and shin bones are connected by ligaments, which give stability to the knee joint. The surface of the kneecap, thigh bone and shin bone, where the bones come in contact, is coated with a smooth tissue called articular cartilage. The cartilage, together with a substance called synovial fluid, prevents the bones from rubbing against each other and causing damage.

ARTHROSIS OF THE KNEE (GONARTHROSIS)
In case of arthrosis, the cartilage deteriorates and the bones start rubbing directly against each other. The result is joint pain, which worsens day by day, and limits motion. Knee replacement is a common treatment for severe arthrosis.

Successful knee replacement can result in dramatic pain relief and improvement in the knee joint function.
2 - TOTAL KNEE REPLACEMENT

WHAT IS TOTAL KNEE REPLACEMENT?

Total knee replacement surgery aims at substituting the bone and cartilage of the joint damaged by arthrosis with plastic and metallic components.

The surfaces of the thigh and shin bones are replaced with high-resistant metallic components, called the **femoral component** and **tibial baseplate**.

Between the femoral component and the tibial baseplate, a **plastic insert** is implanted. It replaces the cartilage function allowing the thigh and shin bone to slide on each other. All materials used in a total knee replacement are highly biocompatible.

WHY TOTAL KNEE REPLACEMENT?

With almost 50 years of history, total knee replacement surgery is a very common and safe procedure for the treatment of severe arthrosis. Approximately 1,000,000 knee replacements are performed annually worldwide. The main benefits of a successful total knee replacement are:

1. **Reduction in knee pain**
   The pain will be rapidly and dramatically reduced, usually eliminated.

2. **Recovery of mobility**
   With less effort, you will regain close to the original mobility of your knee.

3. **Improvement in quality of life**
   Your everyday activities and your social life will no longer be limited by pain and reduced mobility!
TIBIAL BASEPLATE
Metal
3 - CONVENTIONAL PROCEDURES
The positioning of a knee prosthesis is achieved using surgical instruments which prepare the bone for implanting the prosthesis.

**CONVENTIONAL PROCEDURES**

In conventional procedures, the surgical instruments are the same for all patients.

Conventional instrumentation doesn’t allow the surgeon to tailor the surgical procedure to the patient.

**MYKNEE®: THE INNOVATION**

MyKnee® is a surgical instrument which fits your knee accurately, because it is tailored for you.

Medacta®, analyzing a diagnostic image of your leg, provides your surgeon with an instrument tailored specifically for your knee.

MyKnee® technology allows preparation of the bones for implanting the prosthesis, respecting the characteristics of your anatomy.
4 - WHY CHOOSE A MyKnee®
MyKnee® is an instrument tailored for every patient beginning with an image of the knee.

**MYKNEE® TECHNOLOGY POTENTIALLY ASSURES THE FOLLOWING RESULTS:**

1. **More accurate positioning of the prosthesis**
   MyKnee® fits the shape of the knee accurately, allowing precise preparation of the bone for implanting the prosthesis\(^1\). Each phase of the operation is planned by the surgeon prior to the operation by analysis of a tridimensional model of the knee and taking the patient’s condition into account. It has been proven that an accurate positioning results in increased survival of the prosthesis\(^2\).

2. **Less traumatic procedure**
   Conventional procedures require damaging anatomic structures (e.g. medullary canal) in order to position the surgical instruments used to implant the prosthesis. MyKnee® preserves these structures, allowing a dramatic decrease of blood loss and risk of embolism\(^3,4\).

3. **Faster operation**
   The use of the MyKnee® technology is very simple and straightforward. It potentially allows the surgeon to reduce the operating time, thus decreasing the time under anesthetic and the risk of infection\(^5\).

**Benefits of MyKnee®**

The MyKnee® technology allows for a more accurate, faster and less traumatic total knee replacement, by the use of a surgical instrument tailored for the patient.
5 - THE **MyKnee** ADVENTURE
MyKnee® is a surgical instrument which fits your knee accurately.

1 Get an image of your knee
   The surgeon will ask you to have a diagnostic scan (CT or Magnetic Resonance) of your leg.

2 Replication of your knee
   Medacta® will create a plastic 3D model of your knee using the image from the diagnostic scan in order to select the best implant for you.

3 Creation of MyKnee®
   Using the model of your knee, Medacta®, together with your surgeon, creates your personalized surgical instrument.

4 Preparation of surgery
   Prior to the surgery, your surgeon will receive the MyKnee® instruments and a plastic replica of your knee. This will be analysed to prepare accurately for your knee operation.

5 ...enjoy your new knee!!!
Before undergoing your total knee replacement, your doctor will prescribe a complete physical examination to assess your condition and to ensure that there are no factors that could interfere with your surgery.
TESTS

Your doctor may ask you for blood and urine tests and possibly a cardiogram, prior to your surgery.

CHECK YOURSELF

1 Check your skin
If your knee and leg have any skin infections or irritation, contact your orthopedic surgeon prior to surgery: he or she will tell you how best to prepare your skin for surgery.

2 Check your teeth
The incidence of infection after knee replacement is very low, however infection can occur if bacteria enter your bloodstream. Therefore, you should contact your dentist to have your teeth checked before your surgery.

MEDICATIONS

Prior to surgery, provide your surgeon with a complete list of the medications you are taking, including doses and times. He or she will inform you if you need to stop or change any medication.

SPECIAL EQUIPMENT

Special equipment, such as support stockings and crutches, may be needed: you can rent or buy it in specialized shops.
WHAT TO DO IN THE HOSPITAL

TAKE WITH YOU
THE DAY OF YOUR OPERATION

The surgical procedure will take approximately 1 to 2 hours.

It will be preceded by pre-surgical preparation and followed by monitoring in the recovery room.
The time away from your room will be longer than the operation due to time needed for your preparation for surgery, administration of anesthesia and monitoring as you recover from the anaesthetic. Special care is taken to relieve pain after the surgery. Do not hesitate to call, even in the middle of the night, to obtain relief. Regular checks will be made by the nurses.

AFTER THE OPERATION

Specialized personnel will, from day one after the surgery, take care of your recovery by defining the most suitable rehabilitation program for you and accompanying you through the gradual recovery process.

Rehabilitation can be started the day of the operation, subject to your doctor’s approval. You may progress to weight bearing activities as tolerated and may discontinue assistive devices as your comfort level improves.

1 A complete list of your routine medications including doses and times.
2 Your x-rays and all papers for hospital admission including a copy of insurance cards (if requested in your country).
3 Any equipment (crutches, stockings, etc.) ordered for you by your doctor.
LONG TERM CARE OF YOUR NEW KNEE

Follow your orthopedic surgeon’s instructions carefully to minimize any potential complication which can affect your recovery and your implant lifetime. These complications, however, are quite infrequent and some simple rules can dramatically reduce their likelihood.

DON’T FORGET

1. Lead a healthy and active life.

2. In case of fever, throat inflammation, pulmonary inflammation or similar, tell your physician that you have a knee implant.

3. Undergo regular general checkups.
If you have any concerns about your new knee, don’t hesitate to contact your physician and, finally, ...

...enjoy your new knee!
My experience:
Clinical studies of reference:

"Thanks to Medacta for this new technology"
F.R., Switzerland

"I could walk the next day. Sure, there is a basic pain, but it is nothing compared to my last surgery. Also the therapy three years ago has been more painful. As I can bend my knee much better and can also take the stairs, I have no problems"
E.O., Austria

"Now I'm feeling very well and the quality of my life is improving, I'm happy again"
E.B., Austria

"I'm looking forward to having my new knee and stop feeling pain"
M.B., USA
For further information visit the website:

www.myknee4me.com