

Innovation in knee arthroplasty

# MYKNEE

Your 3D Printed  
Patient-Specific Solution!



## Suffering from knee pain?

If your knee pain limits your daily activities, affects your mood, your health and your general well-being...

**You're certainly not alone!**

## Are you considering Total Knee Replacement?

There are a number of solutions, surgical and non-surgical to treat your disease. Ask your doctor what is the most suitable treatment based on your age, activity level and expectations.

## MyKnee, a solution designed for you

MyKnee is a precision instrument which is tailored for each individual patient from a radiological image of their knee.

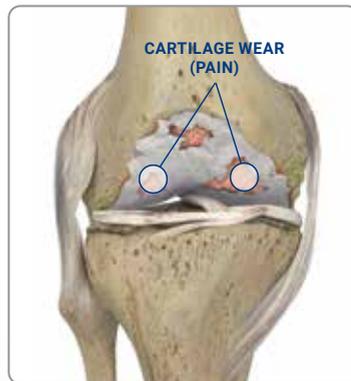
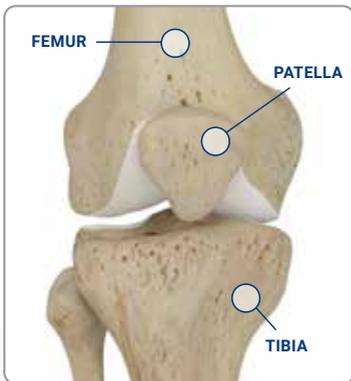
MyKnee technology was designed to achieve **MORE ACCURATE, FASTER AND LESS TRAUMATIC**, total knee replacement.



## What is osteoarthritis?

The knee joint comprises three bones: thigh bone (femur), shin bone (tibia) and kneecap (patella) the ends of which are covered by a smooth surface (cartilage) which allows movement.

The main cause of knee joint diseases is the wear of the cartilage: osteoarthritis. **This wear is perceived as pain.** In the case of advanced osteoarthritis your doctor may suggest that you undergo a total knee replacement.



## Why a Total Knee Replacement?

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Total knee replacement surgery substitutes the damaged bone and cartilage of the joint with polyethylene (a plastic material) or metallic components.

The main benefits of a successful total knee replacement are:

### 1. Reduction in knee pain

The pain will be rapidly and dramatically reduced.

### 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 won't be limited by pain and reduced mobility anymore!

## Why choose a MyKnee Total Knee Replacement?

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MyKnee technology enhances the benefits of a standard knee replacement by offering a **more accurate, faster and less traumatic procedure, through the use of surgical instruments tailored to each patient.**

### ■ MORE ACCURATE POSITIONING OF THE PROSTHESIS

MyKnee fits the shape of the knee accurately, allowing precise preparation of the bone to receive the prosthesis.<sup>[1,2]</sup> It has been proven that an accurate positioning of the prosthesis leads to an increased survival of the implant.<sup>[3]</sup>

### ■ LESS TRAUMATIC PROCEDURE

The conventional procedures require opening the medullary canal of the bone in order to achieve a safe positioning of the surgical instruments used to position the prosthesis. MyKnee eliminates the need of medullary canal violation by producing customised extra-medullary jigs. Clinical studies demonstrate that the blood loss and the risk of embolism significantly decrease if the medullary canal is left intact.<sup>[3,4,5]</sup>

### ■ FASTER SURGERY

The use of MyKnee technology is very simple and straightforward. It potentially allows the surgeon to reduce the operating time, thus decreasing the time under anaesthesia and the risk of infection.<sup>[6]</sup>

## Conventional procedures and MyKnee

The positioning of a knee prosthesis is performed using surgical instruments which prepare the bone to receive the prosthesis.

**CONVENTIONAL PROCEDURES:**  
the surgical instruments are the same for all patients.

**MYKNEE:**  
an innovative surgical instrument which **fits your knee accurately,**  
**because it is tailored for you.**

MyKnee instruments are manufactured with the innovative **3D Printing technology**. This solution offers a very accurate manufacturing process and the highest design flexibility to match your knee anatomy. This allows to realize instruments specifically tailored for your knee, still respecting high quality standards.

The MyKnee allows preparation of the bones to receive the prosthesis, respecting the characteristics of your anatomy.



Your 3D Printed  
Patient-Specific Solution

  
PATIENT MATCHED TECHNOLOGY  
IN KNEE REPLACEMENT

DESIGNED FOR YOU,  
BY YOU!

**Bibliographic references:**

<sup>[1]</sup> Koch P, Müller D, Pisan M, Fucentes S, Radiographic accuracy in TKA with CT-based patient-specific cutting block technique, Knee Surg Sports Traumatol Arthrosc. 2013 Oct;21(10):2200-5. <sup>[2]</sup> Anderl W et al, CT-based patient-specific vs. conventional instrumentation: Early clinical outcome and radiological accuracy in primary TKA, Knee Surg Sports Traumatol Arthrosc. 2014 <sup>[3]</sup> Ritter MA. et al. Postoperative alignment of total knee replacement: its effect on survival. Clin Orthop. 1994; 299:153-156. <sup>[4]</sup> Kalairajah Y. et al. Blood loss after total knee replacement: effects of computer-assisted surgery, JBJS Br. 2005 - Nov;87(11):1480-2. <sup>[5]</sup> Kalairajah Y. et al. Are systemic emboli reduced in computer-assisted knee surgery?: A prospective, randomised, clinical trial. JBJS Br. 2006 Feb;88(2):198-202. <sup>[6]</sup> Peersman G. et al. Prolonged Operative Time Correlates with Increased Infection Rate after Total Knee Arthroplasty. Hospital for Special Surgery Journal 2006 -Feb;2(1):70-2.

## The MyKnee adventure

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### 1. Obtain an image of your knee

The surgeon will organise for you to have a 3D scan (CT or MRI) of your Hip, Knee and Ankle.

### 2. Replication of your knee and creation of MyKnee

Using the 3D scans, Medacta will create a 3D model of your knee and your personalised surgical instruments.

### 3. Surgeon analysis of the planning

Your surgeon will adjust the settings of your MyKnee plan to match your anatomy, planning the position of your final knee implant.

### 4. Preparation for surgery

Prior to surgery, your surgeon will receive the 3D printed MyKnee instruments and the 3D bone model which are specific for your knee. These instruments will be used to perform the surgery.

### 5. ...enjoy your new knee!!!





If you have any concerns about your new knee  
don't hesitate to contact your doctor and, finally...

**...enjoy your new knee!**

For further information visit the website:  
**[myknee4me.com](http://myknee4me.com)**

*"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

*"I'm looking forward to having my new knee and stop feeling pain"*  
M.B., USA

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