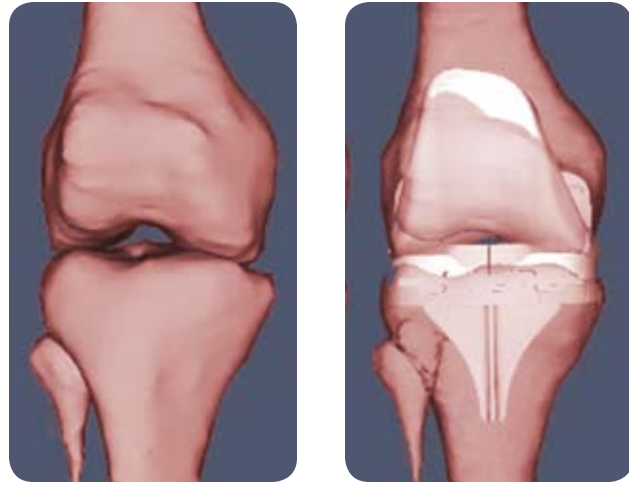


Custom Fit Total Knee Replacement



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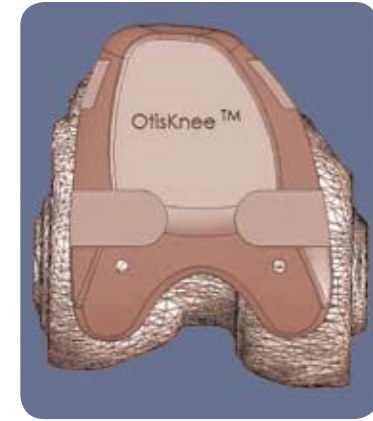
Custom Fitting *A New Concept in Total Knee Replacement*

An exciting new technology called OtisKnee® now makes it possible to perform a knee replacement by placing the components in the exact anatomic position appropriate for each individual patient. Never before has it been possible for a surgeon to repeatedly and accurately place the new knee so that it precisely reproduces normal knee anatomy. Developed by OtisMed, Corp. (www.customfitknee.com), the OtisKnee® allows creation of custom bone




cutting guides from a preoperative MRI scan of the patient's knee. In the operating room, the surgeon uses one guide to make precise cuts on the end of the thigh bone (femur) and another guide to make precise cuts on the shin bone (tibia). The extreme precision of the cutting allows the surgeon to accurately place the knee component in the proper position at the end of the bone.

For the past 30 years prior to the OtisMed



technology, surgeons have made the bone cuts from measurements taken in the operating room with a variety of standard, non-custom tools. These

measurements then placed the new knee in a predetermined mechanical alignment that usually did not reproduce that patient's unique anatomy. All adjustments were made during surgery and were approximate and unpredictable. While knee replacement by the traditional method has in general been considered successful, there are some patients that have not been completely satisfied with the way their new knee functions or feels. The new knee may feel too tight or, in many instances, too loose or unstable. Alignment issues are further complicated by the need to balance the soft tissues (ligaments and muscles) surrounding the knee, an additional challenge for even the most experienced surgeon. These issues and challenges are dramatically reduced with the OtisMed technique. 

For More Information

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Custom Fit

Total Knee Replacement

New Revolutionary Procedure

- More Rapid Recovery
- More Normal Feeling Knee
- Computerized Custom Guides
- Implant Designs for Women

Limited Availability of This New Technology

Custom fit knee replacement with OtisKnee® was developed by OtisMed, Corp. (www.otismed.com), in concert with Stephen M. Howell, M.D., an orthopaedic surgeon in Sacramento, California. As of March 2009 over 15,000 custom fit knees have been implanted by over 300 surgeons nationwide.

“This is the biggest advance in knee replacement surgery in the last 25 years.”

Dr Howell implanted the first custom fit knee in January

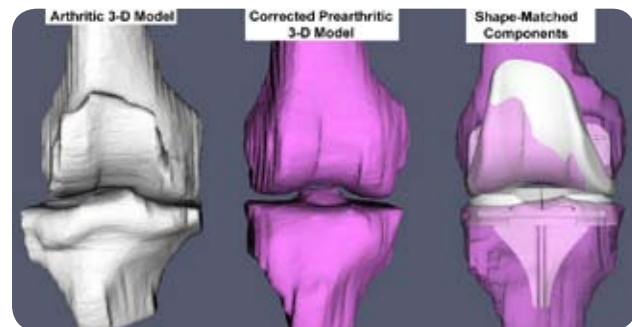
2006 and has now performed over 700 of these total knee replacements. The surgical technique has generated a great deal of interest from many other surgeons around the country. An award winning DVD of the surgical technique was featured at the American Academy of Orthopaedic Surgeons 2008 annual meeting (<http://www4.aaos.org/product/productpage.cfm?code=18102>). A publication by Dr Howell entitled ‘Results of an initial experience with custom-fit positioning total knee arthroplasty in a series of 48 patients’ can be viewed on the following website (<http://www.orthosupersite.com/icontent.asp?pid=obj>)



Frequently Asked Questions

How does the Custom Fit OtisKnee® work?

OtisKnee is based on OtisMed’s patent pending, proprietary *Shape-Match®* technology and requires just a few steps, before and during surgery.



Step 1: Prior to surgery, an MRI is performed to take very precise measurements of the patient’s arthritic knee.

Step 2: OtisMed’s proprietary computer software creates a 3-D image of that knee. It then virtually corrects the deformity to return the knee to its prearthritic state.

Step 3: A computerized 3-D image of the components to be used in the patient’s surgery is then *Shape-Matched* to the anatomically correct virtual knee model. This helps determine the correct implant size and placement, based on the patient’s own normal (non-arthritic) knee anatomy.

Step 4: Using all of this information, special cutting guides are then created for the surgeon to use during the procedure. These patient-specific cutting guides, which are accurate to within a few millimeters, indicate to the surgeon exactly where to make bone cuts so that the knee replacement is customized for the individual patient.

The result: OtisKnee® is not a custom knee implant; it is a technology solution that enables the knee replacement procedure to be customized to the individual patient.

What are the key benefits to the Custom Fit OtisKnee®?

OtisKnee patients and physicians have reported:

- Greater range of motion, immediately after surgery and throughout recovery
- Better flexion to allow for more natural kneeling
- Quicker return to every day activity (driving, shopping, golfing)
- Shorter operative time, which reduces time under anesthesia
- Less post-operative pain



I’ve heard about the “female knee”, a special knee replacement for women. Is this possible with a custom fit knee?

The knee implant used with the custom fit total knee system is a Biomet Vanguard Knee or a Stryker Triathlon knee, which has been manufactured with female shapes and sizes taken into consideration. There are eight different sizes to fit different anatomies. Combining the custom fit technology with these different sized components offers a superior and more individualized knee replacement to women (and men!!) than the more generic “female knee” advertised by others. The commercials and ads you may have seen emphasize the small size of the “female knee” replacement, but actually, the difference between that particular knee and most other replacements of similar size is often less than one millimeter. As a result, most orthopaedic surgeons do not feel that there is any significant advantage nor is it truly gender-specific.

How many custom fit knees have been done?

As of July 2008 over 8000 custom fit knees have been implanted by over 300 surgeons nationwide. Dr Howell implanted over 500 of these total knee replacements. He currently does all his total knees with this new technology.

Where else is OtisKnee® offered?

OtisKnee® is currently available at select premier joint replacement centers across the U.S. Surgeons performing the OtisKnee technique have reported:

- Faster, more streamlined surgery
- Far fewer instruments and implants needed in the operating room
- Ability to achieve reproducible results, patient after patient

Is the custom-fit knee covered by insurance?

Yes, this surgery is covered in the same way that your insurance would cover other types of knee replacement surgery. The guides are currently paid for by Methodist Hospital as part of its dedication to bringing the best available care to the community.

1. Howell SM et al. The shapes of the tibia and femur in the coronal plane are variable and unrelated: Implications for aligning the components in total knee arthroplasty. Clin Orthop Relat Res. In Press, 2009.

2. Howell SM et al. In vivo adduction and reverse axial rotation (external) of the tibial component can be minimized during standing and kneeling. Orthopedics. In Press, 2009.

3. Howell SM, et al. Results of an initial experience with custom-fit positioning total knee arthroplasty in a series of 48 patients. Orthopedics. 2008;31(9):857-63.