

CUSTOM KNEE REPLACEMENT

MRI technology helps achieve more precise, bone-sparing results



Marc D. Connell, M.D., Sports Medicine, Arthroscopy and Joint Replacement Specialist, with Washington Orthopaedics and Sports Medicine (WOSM)

“My patient Robert Cullen is a great example of custom knee replacement. His recovery has been remarkable,” reports orthopedic surgeon Marc D. Connell, M.D.

“We used sophisticated magnetic resonance imaging (MRI) technology and computer assistance to refine our process and allow a more customized total knee replacement,” Dr. Connell explains. The process begins with an MRI about a month before surgery. The imaging provides three-dimensional data used to create personalized positioning guides customized to each patient’s unique anatomy. Surgeons use these MRI-assisted guides to plan the position and alignment of total knee implants before performing the procedure.

“I’m very impressed with the application of this technology,” Dr. Connell notes. “These patient-specific guide systems allow

us to make much more precise incisions and remove less bone. Sparing bone is a definite advantage, especially in younger patients who might need further surgery decades later. I perform many total knee replacements for young, active, vigorous people in their 50s and 60s. The more bone we can maintain and preserve for potential procedures in the future, the better the patient will be served over the course of their lifetime.”

“Sibley has been at the forefront of arthroplasty—surgery to realign or reconstruct joints—since its advent 40 years ago,” says Dr. Connell. “In fact, Sibley was among the very first Washington, D.C. hospitals to make total joint arthroplasty a routine procedure. It’s a very high-quality, high-volume reconstructive orthopedic hospital.

Patients in this region are well-informed and know the difference that level of experience makes.”

“Maintaining and preserving bone is better for patients long-term.”

Marc D. Connell, M.D., Orthopedic Surgeon

“The latest advances in technology, anesthesiology, surgical technique and rehabilitation let us perform knee replacements that consistently restore function and allow patients to recover faster and more easily than ever before.”

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PATIENT STORY

“Dr. Connell performed custom knee replacement on my right knee in February 2014 and on my left knee in March 2015. I had the surgeries after decades of arthritis in my knees finally became so painful that I could no longer go up and down stairs normally, walk the golf course, ride my bike for very long or even walk to a neighborhood restaurant. At the beach I had a hard time getting out of the water because my knee would give way. I was losing my mobility.

After each surgery, what I noticed immediately was that my knee didn't hurt the way it had for so long. I only needed minimal pain medication for the first month, then none at all. I could put weight on my leg and feel the difference in my knee from the very beginning.

Dr. Connell, his staff and the team at Sibley are very good at what they do, and very kind as well. Dr. Connell always took as much time with me as I wanted and answered all my questions. Sibley's staff was top notch. Their nurses were superb professionals—efficient, caring, patient and cheerful.

I also think you have to take responsibility as a patient. I did strengthening and range-of-motion exercises for several months before my surgery. After the procedure, I was diligent about following the rehab regimen, first with a physical therapist at home and then every day at the gym. I still do those same exercises two or three times a week. It pays off.

After two or three months, I was riding my bike again and walking 18 holes on the golf course. Five months after surgery, I took a 25-mile bike ride. I spent a day in the fall walking for hours carrying photography equipment and nothing bothered me. I actually think it's improved my golf game a little bit!”

Robert Cullen, patient

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“After total knee replacement on both knees, I can do everything I want with no pain.”

Robert Cullen, patient
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