

U.S. OLYMPIC & PARALYMPIC TRAINING CENTER COLORADO SPRINGS

Official Orthopaedic Medicine Provider



JASON WEISSTEIN, MD, MPH, FACS BRINGS STRYKER'S MAKO ROBOTIC-ARM ASSISTED JOINT REPLACEMENT SERVICE TO COLORADO SPRINGS

Innovative robotic technology enables personalized total knee and partial knee replacement procedures at St. Francis Medical Center

Colorado Springs, Colo., October 22, 2019 – Colorado Center of Orthopaedic Excellence (CCOE) surgeon <u>Dr. Jason Weisstein</u> is one of the first Joint Replacement and Limb Salvage Specialists in Colorado Springs to offer robotic knee replacement with Stryker's Mako System. Dr. Weisstein has been involved with robotic technology for orthopedic joint replacement since 2011. This highly advanced robotic technology transforms the way joint replacement surgery is performed, enabling surgeons to have a more predictable surgical experience with increased accuracy.^{1,2,3,4}

The demand for joint replacements is expected to rise dramatically in the next decade. Knee replacement surgery in the United States is estimated to increase by 673 percent by 2030.⁵ Yet studies have shown that approximately 20-30 percent of patients are dissatisfied after conventional surgery.⁶

"With Mako, we can provide each patient with a personalized surgical experience based on their specific diagnosis and anatomy," said Dr. Jason Weisstein. "Using a virtual 3D model, Mako allows me to create each patient's surgical plan before entering the operating room. During mako robotic surgery, we can validate that plan and make any necessary adjustments while guiding the robotic-arm to execute that plan. The addition of Mako to CCOE's orthopedic service line further demonstrates our commitment to provide the community with outstanding healthcare."

The Mako total Knee and partial knee applications are knee replacement treatment options designed to relieve the pain caused by joint degeneration due to osteoarthritis. While some patients with extensive arthritis may be candidates for a total knee replacement, there are others who have only a limited amount of arthritis in their knee and may be candidates for partial knee replacement where two-thirds of the knee is virtually untouched. These patients recover more quickly and typically experience less pain because a less invasive surgery is performed. Studies have shown robotic-arm assisted partial knee replacement to be two to three times more accurate than manual partial knee replacement procedures.^{7,8,9}

About Colorado Center of Orthopaedic Excellence

Colorado Center of Orthopaedic Excellence (CCOE) is Colorado Springs' Premier Choice for Patient-Centered Orthopedic Care. Our seven board-certified orthopedic specialists work as a multi-disciplinary team to diagnose and treat the body's delicate framework: bones, muscles, and joints. Whether pain is caused by disease or an injury, our orthopedic surgeons, podiatric surgeon, sports performance specialists and physical therapists provide patients the relief to get back to doing the things they love. Find us at <u>ccoe.us</u>, on <u>Facebook</u> and <u>Twitter</u>.

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⁹ Lonner JH, John TK, Conditt MA. Robotic arm-assisted UKA improved tibial component alignment: A pilot study. Clin Orthop Relat Res. 2010;468(1):141-6.

IMPORTANT INFORMATION

Hip and Knee Replacements

Hip joint replacement is intended for use in individuals with joint disease resulting from degenerative and rheumatoid arthritis, avascular necrosis, fracture of the neck of the femur or functional deformity of the hip.

Knee joint replacement is intended for use in individuals with joint disease resulting from degenerative, rheumatoid and post-traumatic arthritis, and for moderate deformity of the knee.

Joint replacement surgery is not appropriate for patients with certain types of infections, any mental or neuromuscular disorder which would create an unacceptable risk of prosthesis instability, prosthesis fixation failure or complications in postoperative care, compromised bone stock, skeletal immaturity, severe instability of the joint, or excessive body weight.

Like any surgery, joint replacement surgery has serious risks which include, but are not limited to, pain, bone fracture, change in the treated leg length (hip), joint stiffness, hip joint fusion, amputation, peripheral neuropathies (nerve damage), circulatory compromise (including deep vein thrombosis (blood clots in the legs)), genitourinary disorders (including kidney failure), gastrointestinal disorders (including paralytic ileus (loss of intestinal digestive movement)), vascular disorders (including thrombus (blood clots), blood loss, or changes in blood pressure or heart rhythm), bronchopulmonary disorders (including emboli, stroke or pneumonia), heart attack, and death.

Implant related risks which may lead to a revision of the implant include dislocation, loosening, fracture, nerve damage, heterotopic bone formation (abnormal bone growth in tissue), wear of the implant, metal sensitivity, soft tissue imbalance, osteolysis (localized progressive bone loss), audible sounds during motion, and reaction to particle debris. Hip and knee implants may not provide the same feel or performance characteristics experienced with a normal healthy joint.

The information presented is for educational purposes only. Speak to your doctor to decide if joint replacement surgery is appropriate for you. Individual results vary and not all patients will return to the same activity level. The lifetime of any joint replacement is limited and depends on several factors like patient weight and activity level. Your doctor will counsel you about strategies to potentially prolong the lifetime of the device, including avoiding high-impact activities, such as running, as well as maintaining a healthy weight. It is important to closely follow your physician's instructions regarding post-surgery activity, treatment and follow-up care. Ask your doctor if a joint replacement is right for you.

¹ Nawabi DH, Conditt MA, Ranawat AS, Dunbar NJ et al. Haptically guided robotic technology in total hip arthroplasty: a cadaveric investigation. J Engineering in Medicine. 2012;227(3):302-309.

² Illgen R. Robotic assisted total hip arthroplasty improves accuracy and clinical outcome compared with manual technique. 44th Annual Advances in Arthroplasty Course. October 7-10, 2014, Cambridge, MA.

³ Anthony I, Bell SW, Blyth M, Jones B et al. Improved accuracy of component positioning with robotic-assisted unicompartmental knee arthroplasty. J Bone Joint Surg Am. 2016;98-A(8):627-35.

⁴ Hampp EL, Scholl LY, Prieto M, Chang T et al. Robotic-arm assisted total knee arthroplasty demonstrated greater accuracy to plan compared to manual technique. MAKTKA-AJA-9 12509

⁵ Kurtz S, Ong K, Lau E, Mowat F et al. Projections of primary and revision hip and knee arthroplasty in the United States from 2005 to 2030. J Bone Joint Surg Am. 2007;89:780-5.

⁶ Christiaan Keurentjes J, Fiocco M, So-Osman C, et al. Patients with severe radiographic osteoarthritis have better prognosis in physical functioning after hip and knee replacement: a cohort-study. PLOS One. 2013; 8(4): 1-8.

⁷ Dunbar NJ, Roche MW, Park BH, Branch SH et al. Accuracy of Dynamic Tactile-Guided Unicompartmental Knee Arthroplasty. Journal of Arthroplasty. May 2012. 27(5): 803-808.e1.

⁸ Lonner, JH. Robotic-arm assisted unicompartmental knee arthroplasty. Seminars in Arthroplasty. 2009;20(1): 15-22.