

## Robotic knee surgery takes a **step forward**

by Marcy Albin

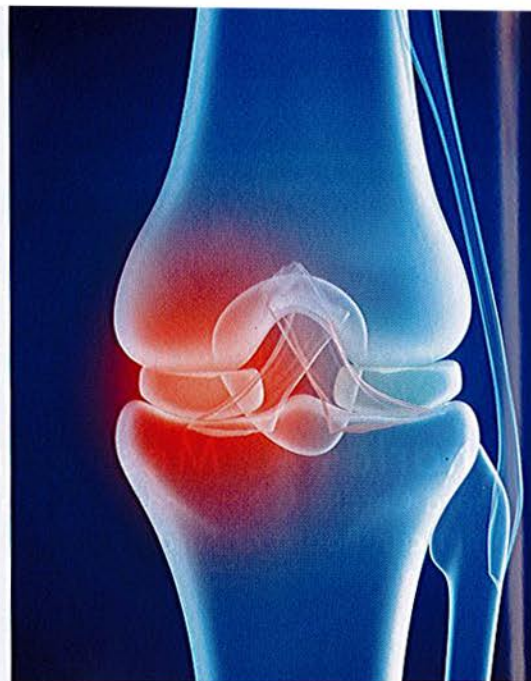
**As America's Baby Boomers evolve into senior citizens, one piece of evolution is likely: There will be a lot more arthritic knees that require implant surgery.**



One of those new and exciting alternatives to the old standard total knee replacement is MAKOpasty, or, Partial Knee Resurfacing. This is an innovative treatment option for adults living with early to midstage osteoarthritis (OA) in either the medial (inner), patellofemoral (top), or lateral (outer) compartments of the knee. It is powered by the RIO Robotic Arm Interactive Orthopedic System, which allows for consistently reproducible precision in performing partial knee resurfacing, by viewing through the tip of a scope.

During the procedure, the diseased portion of the knee is resurfaced, sparing the patient's healthy bone and surrounding tissue. An implant is then secured in the joint to allow the knee to move smoothly again. MAKOpasty Partial Knee Resurfacing can:

- allow optimal implant placement in order to result in a more natural knee;
- allow a speedier recovery, and a shorter hospital stay than traditional knee surgeries;
- can be done on an outpatient basis;
- offers less pain, and a faster return to daily living activities.



This newest surgery is much less invasive, requires less invasive procedures,

less cutting, and hence, faster healing. But, in the long run, does this mean it will be as successful to prevent the problem from re-occurring?

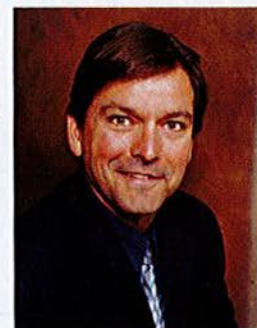
Existing data on knee replacements has demonstrated that patients prefer an ACL-preserving unicompartmental knee replacement (UKA) over a total knee replacement (TKA) and that they recover more rapidly.

Previously, there was a lack of visualization that prohibited the surgeons from being totally exact in their action, the amount of blood loss, the amount of pain, and recovery time.

The introduction of MAKOpasty enabled by a robotic arm technology for these unicompartmental knee replacements has revolutionized the overall approach to knee surgery and its resulting arthritis. The MAKOpasty involves more patient specific pre-operative planning, using a 3D model created from a CAT scan enabling intra-operative adjustments, prior to any bone re-design work, thus allowing for better leg alignment, better implant position, and a gap balance based totally on the patients own knee dynamics and kinematic profile.

This innovative procedure has documented improved surgical accuracy, better aligned implants, and less bone loss in procedures that are using this robotic arm technology.

Locally, the developer of this unique surgery is at HolyCross Orthopedics. Dr. Martin W. Roche, M.D., is the Founder at OrthoSensor, Inc. and serves as its Chief Medical Officer. Dr. Roche serves as Chief of Orthopedics and Director of the Holy Cross Orthopedic Institute, specializing in reconstructive knee surgery. He served as the original consultant, on the project, and was instrumental in bringing it to the public. [@](#)



Dr. Martin W. Roche, M.D.