

## **Greenville Surgeon Performs Revolutionary Computer-Assisted Knee Replacement Surgery**

*Dr. Jack Thomas' new procedure offers less invasive, more accurate surgical option.*

Greenville orthopedic surgeon Jack Thomas, M.D. has performed at Presbyterian Hospital of Greenville, Texas what only a handful of surgeons across the country have been able to offer: Computer-assisted, less-invasive total knee replacement surgery.

The procedure, developed by global medical device maker Smith & Nephew, utilizes a proprietary computer and camera system to track the precise locations of bones relative to the instruments used during surgery. The application enables Dr. Thomas to make computer-guided cuts to within 1mm and 1-degree of perfect alignment, a rarity in knee replacement surgery. During a traditional procedure, the surgeon relies upon cutting blocks, invasive joint alignment jigs, and the general feel of the joint in the determination of implant placement.

“Implant alignment during knee replacement surgery is vital,” explains Dr. Thomas. “This procedure not only enables a higher degree of accuracy, but by eliminating certain steps required in traditional knee surgery, it is also a much less invasive technique.”

In addition, real time images of the instruments and the knee implant itself can be superimposed over the patient's bones on the computer screen. Surgeons using the software can therefore determine the fit and alignment of the new implants before ever making the first cut.

The new technique offers numerous patient benefits, including:

- The elimination of a rod inserted into the canal of the femur to assess alignment of the implant, thereby reducing the risk of fat embolism and taking the guesswork out of joint alignment.
- The opportunity for a surgeon to “see” how the implant will fit prior to actually shaving the ends of the bones, allowing the surgeon to determine the correct fit more effectively.
- Quantitative measurement of joint flexibility during surgery. Traditionally, surgeons determine the flexibility of the knee's ligaments by “feel” and estimate how much correction is necessary to achieve joint balance. Using the quantitative measurements offered by the computer system, surgeons can make very precise adjustments to the ligaments.

“This is the future of orthopedic surgery,” says Dr. Thomas. “And fortunately, residents in this area can stay close to home to receive this standard of care today. Contrary to common assumptions about cutting-edge procedures, a trip to Dallas is not required.”

Every year in the United States, approximately 350,000 total knee replacement surgeries are performed. Dr. Thomas' patients not only benefit from the advanced technology of

computer assisted surgery but also from his use of a technique that reduces the length of the surgical incision by as much as 50-percent. “Patients benefit tremendously from this mini-incision surgery,” explains Dr. Thomas of Greenville Orthopedic, “A smaller incision combined with less trauma to soft tissue—means there’s less post-operative pain and a faster return to physical activity. It gets them back on their feet much more quickly.”