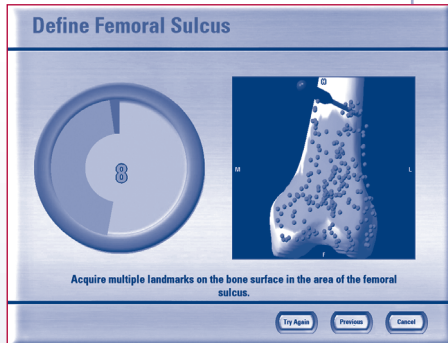
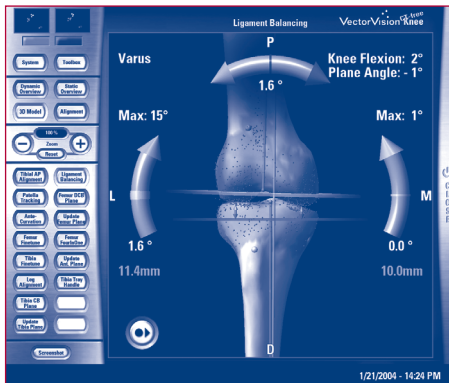


## Image-Guided Minimally Invasive Orthopaedic Surgery



Available at just a few academic medical centers throughout the country, Penn Orthopaedics performs new high-precision, computer-guided surgical navigation or image-guided surgery (IGS) to improve accuracy for total hip and knee replacements.

VectorVision® from BrainLAB gives Penn surgeons an exact three-dimensional, computer-generated model of the patient's anatomy during minimally invasive hip and knee replacement operations. Before the surgery is over, doctors can fine tune the placement of the prosthesis and even study mobility and range of motion.

Advantages extend beyond the operating room. Using the state-of-the-art system, many patients see results better than traditional procedures – smaller incisions, shorter recovery times, and potentially fewer rehabilitation sessions.

VectorVision® also eliminates the need for cumbersome CT scans and X-ray exposure, simplifying a patient's care.

### Case Study

Mrs. M is a 71 year-old female with significant pain in her left knee. In recent months the pain reached the point where her quality of life suffered significantly. Previously an active person, Mrs. M was no longer able to play with her grandchildren or participate in normal daily activities. Knee replacements are a challenge for many active patients because fixation and wear take their toll leading to a revision in a high percentage of patients after approximately 10 years. With this fact, Mrs. M could be facing one or even two revisions in her lifetime.

To address the wear problem, Mrs. M received a total knee replacement with advanced low-wear materials. The second and very important challenge of optimizing the placement of the components to increase her range of motion and stability, was enhanced by the use of computer-guided surgery. Mrs. M's bone position was registered in the operating room and through the use of computer-guided surgical navigation equipment; the knee replacement components were placed with greater accuracy. Mrs. M returned to routine daily activities two weeks following surgery, and within a month, was able to resume playing with her grandchildren.

*Penn Presbyterian Medical Center is proud to be a BrainLAB Center of Excellence – the only one in the Philadelphia region.*

## Outcomes\*

- A patient-specific bone model allows for a treatment plan to be created intra-operatively, giving greater control over the surgical outcome.
- With the ability to verify and optimize bone resections intra-operatively, margins of errors are discovered and corrected during surgery.
- VectorVision® can assist the orthopaedic surgeon in increasing a person's mobility, independence and self-esteem in less time than other surgical options.

\*Source: BrainLAB

## Our Team of Faculty

Our board-certified orthopaedic surgeons are committed to treating individuals according to their specific needs. Many patients are candidates for non-surgical joint preservation techniques, including osteotomies or cartilage resurfacing procedures.

Members of our staff serve on the editorial boards of the *Journal of Arthroplasty*, the *Annals of Internal Medicine* and the *University of Pennsylvania Orthopaedic Journal*.

### **Jonathan P. Garino, MD**

Director, Joint Replacement Center  
Penn Presbyterian Medical Center  
215-349-8696  
fax: 215-349-5928

### **Craig L. Israelite, MD**

Assistant Professor of  
Orthopaedic Surgery  
Penn Presbyterian Medical Center  
215-662-3351  
fax: 215-349-5928

### **Charles L. Nelson, MD**

Assistant Professor of  
Orthopaedic Surgery  
Penn Presbyterian Medical Center  
215-349-8689  
fax: 215-349-5128

## Access

Patient appointments are scheduled within two weeks as follows:

**Penn Presbyterian Medical Center**  
39th and Market Streets  
1 Cupp Pavilion  
Philadelphia, PA 19104  
*Monday - Friday*

**Penn Medicine at Cherry Hill**  
409 Route 70 East  
Cherry Hill, NJ 08034  
*Tuesdays*

**Penn Medicine at Radnor**  
250 King of Prussia Road  
Radnor, PA 19087  
*Fridays*

To refer a patient and/or consult with a doctor:

Call PENNLine: 1-800-635-7780 or contact one of our surgeons directly.

Please contact your UPHS physician liaison with any concerns or problems you may experience when referring your patient.

## Locations

Penn Presbyterian Medical Center  
Penn Medicine at Cherry Hill  
Penn Medicine at Radnor

