

Foot & Ankle Center of Illinois Brings Advanced 3D Imaging to Region

Submitted by Foot & Ankle Center of Illinois

The development of X-Ray technology has played a major role in diagnostics for medical practitioners ever since it was introduced in the late 1890s. In most cases, standard X-Rays still continue to be used for initial diagnosis; however, when images are not adequate for diagnosis, other systems are used. These include CT Scanners (X-Ray Computed Tomography), MRIs (Magnetic Resonance Imaging), ultrasound imaging, or nuclear medicine imaging.

Traditional CT scanners typically require a patient to lie still on a table during the scan while they are non-weight bearing. The American Orthopedic Foot and Ankle Society recommends standing, weight-bearing imaging when possible to get the most accurate assessment of the functional bony anatomy of the foot and ankle. Deformities of the forefoot, midfoot, and hindfoot have been shown to be more visible in a standing position.



The pedCAT™ creates TRUE in-office 3D weight bearing images of the foot & ankle in just minutes

The pedCAT™, TRUE 3D weight-bearing imaging device was introduced during 2012 and recognized as one of the top ten innovations by *Podiatry Today*. Unlike traditional CT scanners, the pedCAT™ allows the patient to stand, making one revolution around the patient to capture the entire region of interest.

This technology, known as cone beam volumetric tomography (CBVT), will aid doctors in diagnosing and treating conditions including but not limited to fractures, subluxations (misalignment) and dislocations, midfoot injuries, bunions, flat feet, sprains, arthritis, and diabetic-related complications. This CT is ideal for pre-planning, post-operative planning, diagnosis of fractures, and evaluation of arthritic joints, bunion deformities, ankle instability, foot alignment, and sesamoid position and condition. Physicians benefit from this technology because it provides a full view of the foot and ankle and interactions of the bones, ligaments, and joints.

The Foot & Ankle Center of Illinois is the first practice in the region to offer this new advanced diagnostic imaging to patients.

According to Dr. John Sigle, founder of the Foot & Ankle Center of Illinois, "Having an in-office, state-of-the-art imaging system has allowed us to reinvent our approach to surgical planning. Scans are taken in a matter of minutes.

Scans provide a more targeted diagnosis. We use these three-dimensional replicas to pre-plan implant surgeries, assuring a higher rate of accuracy when screws, plates, and replacement joints are placed inside the foot. We can also use scans to better assess arthritic joints and detect bone erosion caused by diabetes. Advanced imaging enables us to provide the right diagnosis at the right time resulting in better health outcomes and lower costs."



"The pedCAT™, TRUE 3D weight-bearing imaging device is an advanced computer imaging system that aids in complicated deformity correction."

According to Dr. Grant Gonzalez, DPM, "The pedCAT™, TRUE 3D weight-bearing imaging device is an advanced computer imaging system that aids in complicated deformity correction. We are able to more precisely plan and perform hindfoot reconstructions, flatfoot, and multi-planar corrections with more accuracy. Pre-planning permits us to reduce surgery time as we are able to execute a surgical plan more effectively; we can simplify the most challenging portions of a difficult case, making the process more efficient and more predictable."

Dr. Sigle also uses this computer-guided surgical planning system on all total ankle replacements, bunions, and hallux rigidus (stiff big toe) procedures.

"We always have the best interest of our patients in mind with regards to radiation exposure," said Dr. Gonzalez. "One of the reasons we chose the pedCAT™ was based on minimal radiation levels that are significantly lower than traditional CT scanners."

According to the Ludlow, J. *International Journal of Diagnostic Imaging*, 2014, a standing CT exposes you to about two to six micro Sieverts of radiation. To put this in perspective, the average American is exposed to about eight micro Sieverts of radiation a day from his or her environment. A passenger on a flight from Los Angeles to New York is exposed to about 40 micro Sieverts of radiation. Peer-reviewed studies state the radiation dose of a standing CT is insignificant and should not be a deciding factor when determining if a patient needs a scan.

New imaging CT scanners are being used to address complicated conditions to provide more precise images and data for diagnosis and surgery. Being able to measure and evaluate foot deformities in three dimensions rather than two transforms diagnosis and drives better surgical outcomes. If you are seeking consultation for foot or ankle deformity, contact the Foot & Ankle Center of Illinois at 217-787-2700. The Foot & Ankle Center of Illinois is conveniently located in Springfield, Decatur, Taylorville, Shelbyville, Sullivan, and Carlinville. Visit myfootandanklecenter.com to view a short video of The Curve Beam pedCAT™, TRUE 3D weight bearing scanner.

There are numerous options to end heel pain. If you are seeking more information or would like to schedule a consultation to end your heel pain, call the Foot & Ankle Center of Illinois at 217-787-2700. We have clinics located in Springfield, Taylorville, Decatur, Carlinville, Shelbyville, and Sullivan. Visit myfootandanklecenter.com to obtain information for stretching exercises you can do at home. Also, view a short video on Cutting Edge MLS Laser Therapy and listen to physician and patient testimonials about this new technology.



Both feet are scanned simultaneously in a weight-bearing position



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