

Finally. World's *first* ultra-low-dose x-ray imager reduces radiation by up to 90% compared with conventional x-rays, thanks to a...

Nobel Prize-Winning Physicist, Dose of Common Sense

GEORGES CHARPAK served in the French resistance and was imprisoned by the Nazi-controlled Vichy government in 1943. Soon, he was deported to the Nazi concentration camp at Dachau, Germany, where he remained until the camp was liberated in 1945. Some 47 years later, Dr. Charpak was awarded the Nobel Prize in Physics. His seminal work in "particle detector" technology is the foundation of a breakthrough imaging technology: 'EOS', the world's first ultra-low-dose x-ray technology for the musculoskeletal system.

"Radiation can be dangerous," says Dr. Charpak. "We must *not* continue exposing human beings at the rate we're going. It's common sense: Why keep doing it when we don't have to?" His FDA-cleared invention, EOS, is now available in the U.S. from Atlanta-based biospace med, and the timing couldn't be better.

On May 20, 2008, Rep. Sue Myrick, R-N.C., along with Reps. Lois Capps, D-Calif., Steve Israel, D-NY, and Deborah Pryce, R-Ohio, co-chairs of the Congressional Cancer Caucus, introduced legislation, "H. Res. 1216", in the House of Representatives seeking to reduce the radiation dosages now used commonly in the imaging of children. The first EOS installation at a U.S. healthcare facility comes on the heels of this House resolution.



Gordon D. Donald, III, MD is Managing Member and Director of Spinal Surgery for Eatontown, N.J.-based New Jersey Spine Group, LLC. Dr. Donald specializes in reconstructive spinal surgery: scoliosis, spinal deformity, and spinal tumors, as well as degenerative disorders and herniated discs.



Eugene F. Hession, DC is a chiropractic physician and Co-Director of Nonoperative Care at New Jersey Spine Group. Dr. Hession specializes in spinal disorders, neck pain, back pain, sciatica and spinal rehabilitation. He is the former Team Chiropractic Physician for the New York Giants football team.

"I believe that every healthcare institution in the U.S. that currently images patients with conventional x-rays should consider adopting this technology as soon as possible."

"No doubt, EOS is going to have an immense impact on how we take care of patients, particularly those with spinal deformities—for example, children who have scoliosis."



EOS: Upright Imaging, Less Radiation

DIRE NEED

Eatontown, N.J.-based New Jersey Spine Group, LLC (www.nj-spine.com) is the first healthcare facility in the United States to install the EOS orthopedic x-ray imager. Many institutions are expected to follow. And why not? EOS can capture full-body images of adults and kids in a weight-bearing (i.e., standing upright) position, along with a *dramatic reduction* in radiation dose—up to 10 times less than a conventional digital x-ray and up to 1000 times less than a CT (Computed Tomography) scan.

"EOS can benefit patients of all ages," says Gordon D.

Donald, III, MD, founder, Managing Member and Director of Spinal Surgery for New Jersey Spine Group.

"EOS is especially helpful in any situation where patients want to limit their exposure to radiation, and also where long-length, weight-bearing images are needed," says Dr. Donald. "EOS represents a significant, breakthrough medical technology. I believe every healthcare institution in the U.S. that currently images patients with a conventional x-ray will want to adopt this remarkable technology as soon as possible.

"Furthermore, because EOS uses considerably less radiation than a conventional x-ray, EOS is a particularly important advancement for children with pediatric scoliosis, a condition involving a curvature of the spine that usually requires repeated x-ray exams, perhaps as many as 20 to 25 radiological exams during the course of their clinical follow-up," adds Dr. Donald.

"Given the clinical evidence that EOS is safe and effective, and given the prospect of near-term legislation mandating less exposure to radiation among children, I can't imagine that every hospital and other healthcare facility doing a serious amount of imaging won't embrace the EOS technology real soon," says Dr. Donald. "I mean, why wait?"

WHAT'S NOT TO LIKE?

The x-ray based EOS system is designed to obtain digital full-body images while a patient is in either a sitting or standing position. This allows a physician to view the patient's skeletal structure in a "weight-bearing" position. The result is a more accurate assessment of balance, posture and bone alignment for orthopedic, general radiology and pediatric applications.

According to Dr. Donald, EOS has numerous advantages over current imaging technology, including speed and safety. He points out, for example, that a spine-only exam can be performed in five to 10 seconds with EOS, and a full-body scan in only 25 seconds. "Including positioning of the patient, we can complete the entire procedure in just a few minutes," says Dr. Donald.

This will be great news to the approximately 28.6 million people in the U.S. (source: American Academy of Orthopedic Surgeons) who suffer some type of musculoskeletal injury each year. Before any treatment can be considered for orthopedic pain, injury or disease, an accurate diagnosis must be made.

Several technologies are used to image *hard* and *soft* skeletal tissue, including x-ray, CT, and magnetic resonance imaging (MRI). X-ray technology is designed more for hard tissue (bones), whereas MRI is often used to diagnose soft-tissue injuries such as torn ligaments and cartilage in the knee, damaged rotator cuffs, and herniated disks in the spine. An x-ray exam, such as with EOS, is typically used as the primary exam and also in the routine follow-up exam.

In addition to the dramatic advantage of markedly less radiation exposure, another incentive for quick adoption of EOS is that it is designed to fit into an existing radiographic suite.



Marie Meynadier, PhD
President and CEO
biospace med
Paris, France

"For more than 100 years, x-rays have been providing vital information to clinicians. Unfortunately, conventional x-ray imaging delivers a significant dose of radiation to the patient. EOS solves this problem."



Richard diMonda
Vice President, Strategic Marketing, Global
biospace med, Atlanta

"EOS represents a whole new paradigm for the safe and effective imaging of patients of all ages, and we are therefore looking forward to rolling out this revolutionary technology throughout the U.S."

House bill proposes regulation of child radiation dosing

A resolution supporting efforts to reduce the radiation dose used in imaging of children was introduced on May 20, 2008, in the U.S. House of Representatives.



"The New Jersey Spine Group strongly supports this effort to lower the amount of radiation exposure in the imaging of children."

"EOS represents a dramatic way for us to differentiate our healthcare institution in our crowded market," says John Reidelbach (above), Director of Business Development for New Jersey Spine Group, LLC.



Joanne Testa
Practice Administrator,
New Jersey Spine Group, LLC

"EOS allows x-ray imaging to be performed at a much lower dose than digital x-ray, with very high contrast. This makes EOS well-suited for pathologies such as scoliosis, as well as spinal implants and hip and knee replacements—which our doctors believe should lead to improved patient outcomes."

"(EOS) has multiple advantages over current imaging technology, including speed and safety."

And, there are no consumable costs associated with EOS other than the standard gown worn when the patient is scanned.

Although EOS is a new technology, it can utilize existing reimbursement codes because it makes x-ray images.

"That makes EOS very attractive for early adopters of

the technology like us," explains Joanne Testa, Practice Administrator for New Jersey Spine Group.

"And once the initial capital investment is made, EOS has a relatively low operating cost. This makes it financially attractive, especially to high-use facilities. I really have no doubts that EOS is going to be quite appealing for orthopedic imaging applications," adds Testa.

DOSE OF COMMON SENSE

"It has been well documented that the amount of radiation people are receiving from medical x-rays is increasing dramatically, and this includes children, unfortunately," says biospace med CEO, Dr. Marie

Meynadier. "Reliable data show an increased cancer risk, especially among young females who may have a regular need for conventional x-ray monitoring. This is most unacceptable," adds Dr. Meynadier, "because it doesn't have to be this way. We need to take a different approach, particularly with children, whose tissues are more radiosensitive. They receive a larger effective dose for a given level of radiation and have a longer time to develop cancers resulting from repeated radiation exposure. A dose of common sense demands we do all we can to reduce radiation, and we are very proud that EOS will play an important role in making this happen." ■