

# A Heartsaver: The 64-Slice CT Scanner

It's amazing technology that's expected to revolutionize the way heart disease is diagnosed.

UCI's new 64-slice CT scanner can visualize the entire heart in less than 10 seconds, revealing blockages in blood vessels and other heart problems that are sometimes not easily detectable with other tests.



*Photo courtesy of Cardiovascular Imaging Center for Education and Research*

UCI's new 64-slice CT scanner enables doctors to examine the heart in unprecedented detail. Above, a three-dimensional reconstructed image reveals a high-grade narrowing (indicated by arrow) of the left anterior descending coronary artery, which supplies blood to a section of the heart.

"This technology will dramatically change the way coronary disease is assessed," says **Dr. Jagat Narula**, chief of cardiology at UCI Medical Center. "It is expected to eliminate the need for cardiac catheterization in many patients by giving doctors an accurate but noninvasive way to look into the heart." Cardiac catheterization involves threading a thin tube from an incision in the groin to the heart, where a contrast solution is injected and X-rays are used to identify the blockages in coronary arteries. The procedure takes about 45 minutes to perform—and several hours of recovery time.

A 64-slice CT scan, on the other hand, is less invasive and requires no preparation except for an intravenous injection of contrast solution—and no recovery time. "Patients can go shopping afterward," says Narula. The machine produces exquisitely detailed, three-dimensional images of the heart that can be viewed from every angle.

**Educating doctors.** CT technology has advanced so quickly that UCI and Toshiba recently teamed up to create the Cardiovascular Imaging Center for Education and Research—or CVICER, pronounced "quicker." In addition to sharing a strong focus on cutting-edge technology and research, they have another common bond: physician education. As a major university with an affiliated hospital, UCI is dedicated to providing the best education possible for its 600 resident

The 64-slice CT scanner is one of the most important advances in cardiology over the past few decades.

physicians, 400 medical students, and thousands of community doctors. "Most members of the Orange County medical community have either been trained at UCI, or rely on it as a medical education resource," says Narula. "UCI will provide physicians with the training they need to incorporate multi-slice CT technology in their practice."

**Early detection.** Many clinicians agree that multi-slice CT technology is one of the most important advances in cardiology in many years. "The education that CVICER provides to community physicians about 64-slice technology can improve the care of thousands of people in the greater Orange County area," says Narula. "The ultimate goal is to prevent heart attacks through the early detection of plaque deposits in coronary arteries."

Another important mission of CVICER is research. The UCI-Toshiba team will monitor patients whose probability of heart attacks is determined by a 64-slice CT scan. Individual treatment plans will be created for patients, and their progress will be monitored over an extended period of time. The study will assess the overall effectiveness of the 64-slice CT scanner in the management of coronary disease.

"Our hope is that CVICER will become an important resource for cardiologists, radiologists and referring physicians," says Narula. "We believe we can change the way doctors provide patient care, moving them over time preferentially from invasive to noninvasive practices."

Located on the UC Irvine campus, CVICER houses UCI's 64-slice CT scanner. For information on how to arrange for a scan, call 714-456-6699.

## More CT Facts

### The 64-slice CT scanner:

- Captures high-resolution images of the heart and coronary arteries so quickly that it freeze-frames the heart while it's beating, the lungs while they're expanding and contracting, and the blood as it circulates throughout the body.
- Provides the same information as a diagnostic coronary angiogram, in a noninvasive manner.
- Helps detect atherosclerosis (the disease process that causes heart attacks, strokes, and claudication) at its earliest stages.
- Can complete an entire heart scan in nine seconds while patients briefly hold their breath, making the test easier for the elderly, people with respiratory problems and those not able to remain in one position for longer periods of time.
- Is especially helpful for patients with chest pain, multiple cardiovascular risk factors, and those who need follow-up after coronary bypass surgery, angioplasty or coronary stent placement.
- Can accommodate larger patients.