



- HOME
- NEWS
- SPORTS
- ENTERTAINMENT
- CLASSIFIEDS
- OPINION
- B...



A CT scanner employs X-rays and computers to generate cross-section views of the body, which can be put into a 3-D image for doctors to study.

Special to The Bee

- [E-mail](#)  
 [Print](#)  
 [Subscribe to print](#)  
 [Comment | Read \(1\)](#)

## Off the Cutting Edge

### Medical imaging machines that work with precision and speed take more Valley doctors and patients away from the scalpel.

By Barbara Anderson / The Fresno Bee

(Updated Tuesday, February 28, 2006, 9:01 AM)

Marcelino Segovia, 69, of Caruthers held his breath and stayed absolutely still so doctors could look inside his abdomen. In the span of 10 seconds, the examination was over — without an incision being made.

A scalpel wasn't necessary for this exploration of Segovia's belly. A new, high-powered computed tomography scanner at the Fresno-based Veterans Affairs Medical Center gave doctors a birds-eye view of his organs.

Diagnostic tests that used to entail exploratory surgery are becoming relics of the past. More and more, doctors in the central San Joaquin

Advertisements

**TOP JOBS**

**PRODUCTION** Our Fresno Snacks mfg. facility is currently...

**RESTAURANT MANAGEMENT** Red Robin, an upscale full...

**SECRETARY II** \$2,473-\$3,014 Monthly Opening with Tulare...  
Restaurant If it is happening in the Valley, it's...

**CUSTOMER SERVICE/ RAMP AGENTS** Great entry level opportunity...

**DRYWALL FINISHERS & METAL FRAMERS** Commercial work...

**PRODUCTION** Our Fresno Snacks mfg. facility is currently...

**Police Service Officer** \$3,240 - \$3,937/Mo Performs...

**TRUCK DRIVERS DEDICATED RUNS** LA to Sacramento Home...

**ADMIN ASSISTANT** Detail oriented admin assistant for...

**All Top Jobs**

**TOP ADS**

**HONDA Accord** 1994 rblt eng new paint \$3500/obo 559-393-3842...

**FORD E350 WAGONS '04 &**

Valley inspect organs, watch hearts beat, peer inside colons and scan brains using cutting-edge medical technology.

Faster equipment to scan bodies for disease also means that each year thousands of Valley residents spend less time in noisy, confining machines.

"What once was almost experimental and cutting-edge and avant garde five years ago, today is becoming common," said Charles Smith, medical director of radiology at Children's Hospital Central California in Madera County.

Tests that required Valley residents to go out of town three years ago are available here today, he says.

VA radiology technicians used a new, \$1.5 million 64-detector CT scanner to examine Segovia's abdomen for tumors. The machine produced detailed, three-dimensional pictures.

Segovia, who has leukemia, has had tests in the past that took several hours. Friday, he was on the CT table for a few minutes before the test started, and the test itself lasted only seconds.

"It was incredible," he says.

The scanner can take more than 3,000 X-rays in 27 seconds, capturing images of the body from the middle of the chest to the toes, says VA radiology technician Allan Gilbert.

CT scanners use X-rays and computers to generate cross-section views or slices of the anatomy. The 64-detector CT scanner takes multiple pictures at one time. "It's like 64 cameras going around and around in a circle," says Dr. Malcolm Anderson, chief of imaging services at the Fresno VA hospital.

The machine produces three-dimensional images with such precision that even blocked heart vessels can be mapped.

For some patients, this provides an alternative to an angiogram, in which a small tube is inserted into an artery in the groin and threaded up to the arteries in the heart so the vessels can be pictured.

Bill Boudreaux, 63, of Porterville has had a couple of angiograms. Each one required him to be sedated and remain in the hospital for several hours.

But recently, the 64-detector CT scanned his arteries.



Marcelino Segovia, 69, prepares for a CT scan at the Fresno-based Veterans Affairs Medical Center. At left is CT technician Allan Gilbert.  
Diana Baldrice / The Fresno Bee

'05, 12-14-15 pass 10...

ENGLISH Bulldogs AKC 10mos. male. Parents 3yrs, brindle...

YORKIE Pups AKC 2 Males, Tiny Vet checked, shots...

KERMAN, Gorgeous 4/2, blt 2003 xInt neighborhood...

HUGE 4/2, 4741 E Kavaland. Sec 8 ok \$1250/mo Call...

KAWASAKI KX250 1996 XInt Cond! \$2,000/obo Call (559)...

SALEM 26ft 1992 Travel Trailer, good cond, sleeps...

NISSAN Xterra SE 2000 Very Good Cond! Low Mileage,...

CHEV X-Cab 1999 Loaded, Clean, 80K. \$11,000/obo 559-706-4947...

All Top Ads

**MAD HAT Sale**

Now through Saturday!

**MAD MAD E**

View this week's

Click here for CRAZY COUPONS

g  
Gottsch

The new test took a few minutes, and he walked out of the hospital and drove home. "You just get up and go home — there's no grogginess," he says.

More hospitals in the Valley are getting the machine, the latest in the evolution of CT scanners on the medical market.

Kaiser Permanente Medical Center in Fresno could have a 64-detector CT operating by June, says Dr. Robert Bernstein, chief of radiology. The hospital is the next in line in the Kaiser system to get the machine, he says.

Children's Hospital Central California plans to install one of the scanners in the next 18 months, Smith says.

Besides getting higher-quality pictures with the scanner, the machine's speed can capture clear pictures even if a child squirms. It should reduce the number of children needing sedation to be scanned, he says.

Multi-detector CT scanners are becoming so routine that Smith shares this joke about their proliferation: "If the trend continues, there could be more CT scanners than Starbucks in Fresno."

But a CT scanner is only one diagnostic tool in a doctor's bag.

Magnetic Resonance Imaging machines allow close inspection of organs and are used for detecting everything from brain diseases to cancers. MRIs can provide more detailed pictures of soft tissues than those obtained using CT scans.

Sierra Imaging in Fresno has one of the most up-to-date, high-definition MRIs in the Valley.

The 3-Tesla imager at Sierra Imaging is twice the magnetic strength of the more commonly used MRIs, says Dr. Leyla Azmoun, a neural radiologist. MRIs use magnets and computers to create images of the body. The strength of an MRI is measured in teslas.

The more magnetic power, the better the resolution of the picture, Azmoun says.

State-of-the-art scanners that are available today in the Valley are faster than the versions typically used five years ago.

For most people, the less time inside an MRI tunnel, the better. "A lot of patients have problems with claustrophobia, and they don't want to be in an enclosed environment," Azmoun says.

On Friday, the California Imaging Institute installed a \$2 million, 3-Tesla MRI in its new building in northeast Fresno. The institute, a partnership between Community Medical Imaging and Community Medical Centers, is scheduled to open in April.

The machine has a 27,000-pound magnet with a strength of 30,000 times

Earth's own magnetic pull. It will allow radiologists to "do specialized brain imaging that right now patients are having to drive to UCSF or Stanford to have done," says Dr. Mariela Resendes, radiologist and managing partner of Community Medical Imaging.

At Sequoia Imaging Center, a division of Kaweah Delta Health Care District in Visalia, a new piece of equipment means patients with cancer no longer have to go to Fresno for a diagnostic test known as a PET scan.

Positron emission tomography scans can reveal the difference between healthy cells and cancerous cells and create computerized images of the abnormal areas for doctors to evaluate.

The PET scan has been running two days a week since October and already the center is scheduling 12 to 14 cases a day, says Reneé Lauck, imaging services manager.

"Most of the cancer physicians or the physicians in cancer centers know about it," she says. And other doctors are beginning to refer patients.

Valley doctors also refer cancer patients to Valley Metabolic Imaging, LLC., in Fresno, where a combination PET-CT scanner allows the overlay of images to detect small growths and precisely locate them inside the body.

The California Imaging Institute plans to include PET-CT, among the diagnostic tests it will offer beginning this spring.

Saint Agnes Medical Center is adding a 4-D ultrasound machine, one of the most recent medical institutions in the Valley to do so. The ultrasound will make it easier for doctors to see details in a fetus, including such abnormalities as cleft palate. The 4-D ultrasound machine should be installed by the end of March.

The equipment has been available in some university medical centers for the past two to three years, says Cindy Couto, Saint Agnes ultrasound supervisor.

"In teaching institutions, they're using it a lot ...," she says.

Saint Agnes also installed a SonArray about 10 months ago. The device for prostate cancer treatment allows radiation beams to be directed to precise locations. "This is the most cutting-edge of radiation therapy for early-stage prostate cancer," says Dr. Li Liu, attending radiation oncologist at Saint Agnes.

Very seldom do patients need referrals to medical institutions outside of the Valley, Liu says. "Equipment-wise, [the Valley is] right at the cutting-edge as far as cancer care is concerned."

And there's the CyberKnife at Community Regional Medical Center in downtown Fresno. The \$4.7 million robotic machine targets tumors and lesions using technology created for guiding cruise missiles. It too allows doctors to direct radiation treatment to specific sites, avoiding damage to healthy tissue and organs.

Radiologist Behzad Noorbehesht, co-director of MRI at Community Regional Medical Center, says doctors in the Valley have a range of high-tech diagnostic tests at their disposal.

"We are pretty sophisticated in terms of imaging and we're not a little, small town where you have to send people out for this."

*The reporter can be reached at [banderson@fresnobee.com](mailto:banderson@fresnobee.com) or (559) 441-6310.*

**FresnoBee.com**

**THE McCLATCHY**



## A walk down the aisle

© 2005, The Fresno Bee

[News](#) | [Sports](#) | [Business](#) | [Classifieds](#) | [Contact Us](#) | [Text Only](#) | [Subscribe](#)

[Your Privacy](#) | [User Agreement](#) | [Child Protection](#)

### Sponsored Advertisers

[Joint Pain](#)

[World Travel Guide](#)

[Si-Mexico Hotels and Resorts](#)