E HEALTHY LIVING

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ARTSDAY

Cliburn notes

Some participants in the piano competition share their moments and memories. 12E

Food for thought

Can education help kids choose healthier food? A new study says yes. The new issue of *Pediatrics* magazine includes a three-year study of 595 children, half of whom attended nutrition classes. Those who took the classes ate more healthy food and less junk than kids who didn't. Everybody, however, still chowed down on too much pizza and not enough fruits and veggies. Dr. Elizabeth Nabel of the National Heart, Lung and Blood Institute, which sponsored the research and is starting a nutrition education program, says the study suggests "kids who learn to eat healthy during their adolescence will continue to eat healthy."

Michael Precker

INSIDE

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Deep-water running (yep, running) builds stamina and saves wear on your joints, says Fit in the City columnist Debbie Fetterman. 3E

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The Lunch Ladies are anything but frosty toward summer drinks from Starbucks. 5E

BALANCE

Friendship. You know it's good for your soul, but science is proving it's good for your health, too. 11E

FUNNY OF THE DAY

Taking a gamble

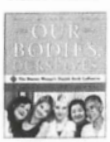
Beware online poker: Cool shades do not necessarily make a great player. **Fox Trot, 8E**

COMING UP

WEDNESDAY

Backyard fun: See how some new — and not so new — backyard toys succeed at beating summer boredom. **Texas Living: Kids Day**

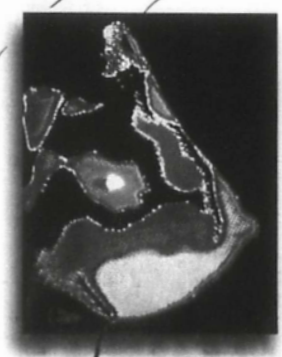
COMING NEXT WEEK



Knowledge and power

The classic book *Our Bodies, Ourselves* has empowered several generations of women. Read about one North Texas family's experience. **Healthy Living**

Picture imperfect



Picture tells a story: *Cancer cells show up white on a mammogram.*

Photo illustration: CHRIS MORRIS/Staff Artist, HOWARD SOCHUREK/Corbis

New technology and better oversight may hold the keys to more effective **breast cancer** detection

By ROBERT FREDERICK
Special Contributor

Breast cancer will strike more than 200,000 times this year and claim more than 40,000 lives, according to estimates from the American Cancer Society. So, if it hasn't already touched someone you know, it probably will. The key to beating breast cancer is early detection, and many experts say mammography is the best-known way for doing that.

HEALTH

But mammography isn't perfect. While the Food and Drug Administration has been taking regular steps since 1992 to improve mammography, many doctors think the FDA's latest step is in the wrong direction and will just lead to higher costs.

This highly regulated medical field is also receiving attention from a surprising source, the Department of Defense, which has been investing in new breast-imaging technology.

History

In 1992, Congress enacted the Mammography Quality Standards Act so that all women would have access to high-quality mammography for the detection of breast cancer in its earliest, most treatable stages. By 1994, the FDA had implemented regulations that required mammography facilities to become accredited by the American

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Improved diagnosis sought

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College of Radiology.

"Before that, accreditation was voluntary," says Priscilla Butler, senior director of the breast imaging accreditation programs at the ACR. "Since then, we've seen a tremendous improvement in image quality."

Current status

Meeting the federal standards requires frequent quality-control tests. Ms. Butler says, "Some of those tests are every year, some are twice a year, others are quarterly, and some of those tests are even daily." When the FDA began inspections of mammography facilities in 1995, about four out of 10 facilities were in violation of the federal law. Today, that statistic hovers at three out of 10.

"There are a fair number of tests that have to be done," says Dr. Charles Finder, associate director in the FDA's division of mammography quality and radiation programs. "It certainly is possible for even a good facility to miss one or two over the course of a year and generate a violation."

Most violations are not serious. Each year, Dr. Finder says, "about 2 percent of the facilities will have a level-one," or serious, violation.

Serious violations are found either during the inspection or are reported via other sources (including patient complaints), says Dr. Finder. Problems that remain uncorrected or are filed by a state body appear in a public report called the Mammography Facility Adverse Event and Action Report, available at the FDA's Web site.

Do your research

The report shows which medical centers have been fined, suspended or have had to shut down mammography services for failing to meet federal standards or higher state-specified standards, or both. In Texas, there are more such serious violations than in any other state. But that may be because the state's own FDA-approved accreditation body, the Texas Department of Health's Bureau of Radiation Control, also takes action against noncompliant mammography facilities.

Corrective actions are taken quickly. In some cases, the FDA also may require the facility to contact patients and advise them that their mammograms may be faulty.

The FDA recommends that women look for the MQSA certificate at their local mammography facility and check the expiration date. Free, searchable, up-to-date lists of certified mammography facilities are maintained, at the FDA's Web site.

Limits to technology

Facilities meeting strict federal regulations still face the limits of the X-ray technology used in mammography. "Mammography is not a perfect test," says Dr. Mark Helvie, division director of breast imaging at the University of Michigan. "It detects many cancers, but not all cancers," and sometimes mammograms indicate cancer when it is not present: a false positive.

"The biggest problem with mammography," says Dr. Helvie, "is for women with what we call 'dense' breasts: women who have a lot of fibro-glandular tissue that may camouflage a cancer on a mammogram." These tissues appear whiter on a mammogram, disguising tight clusters of tiny, irregularly shaped calcifications (also white on a mammogram) that are a likely sign of malignant cancer.

To improve diagnosis, researchers at the University of Michigan have developed a computer-aided breast-imaging system and ultimately hope to combine ultrasound and traditional mammography in one scan. "None of these systems, including the ones we've developed, are perfect," says Dr. Helvie. "They act as a second reader and they would aid the radiologist in showing things that may have been visually overlooked. Or, if we see something and we think it's very low suspicion and the computer would think it was higher suspicion," the discrepancy may trigger a higher evaluation.

Getting a second opinion

A computer as the second reader of a mammogram is still just an aid to a doctor, and many women may want a second opinion. By law, if a patient requests it, a medical facility is required to send original mammograms to another facility or hand them directly to the patient.

Last April, Susan, 46, made that request: "I literally took the films and the reports with me. I hand-carried them from office to office." The first radiologist said the mammogram indicated that Susan needed to get a biopsy to see if the lesion that appeared on the mammogram was cancer. "I took them to my gynecologist, and she reviewed them. I took them to my general practitioner, and he reviewed them. And I took them to a surgeon, who reviewed them."

At that point, everyone told Susan the same thing: the mammogram suggests something suspicious; get a biopsy. Susan says she went to a large research hospital, where the radiologist said a biopsy "could be done given my own anxiety, but she said this could wait another six months."

Susan, who asked that her last name not be used, elected to follow the advice of the many professionals who recommended she get a biopsy. The result: no cancer. While relieved, she is still frustrated by the process: "If there were a way of getting more accurate results where there wasn't this discrepancy between radiologists looking at the films, I would prefer to have another procedure."

Making improvements

In recent months, the Institute of Medicine of the National Academies and studies in the Journal of the National Cancer Institute have recommended changes in federal standards to improve physicians' interpretation of mammograms. But Congress, which reconsidered the law last year, is not expected to do so again until 2007.

This year, the FDA hopes to improve mammography through stricter interpretation of current regulations. That means an additional test for many mammography machines that may reduce the incidence of artifacts that appear on a mammogram.

"Artifacts can give you a white spot on the mammogram," says Dr. Katherine Hall of the Presbyterian Hospital of Dallas Women's Diagnostic and Breast Center. Artifacts happen for a number of reasons, and can, says Dr. Hall, "look very similar to calcifications," which indicate breast cancer. "When we see little white areas on the mammograms and we cannot ascertain whether they are from artifacts or from calcifications, then we get the patients back to do special additional views."

Radiologists at most large hospitals, including Presbyterian Hospital of Dallas, already perform the test the FDA requires. But many medical centers are not performing that test because many medical physicists who test mammography machines think it is unnecessary.

"Performing that test will not improve the quality of mammograms and will raise the cost of mammograms for every woman," says Dr. G. Donald Frey, professor of radiology at Medical University of South Carolina and chairman of the board of the American Association of Physicists in Medicine.

"The biggest cause of artifacts is film processing," explains Dr. Frey, not the mammography machine itself. He says the FDA's question is, "If the machine itself is producing artifacts, is there any possibility that we would miss those artifacts?"

The FDA thought "Yes," and the AAPM thought "No." As with many such disagreements, the FDA asked for evidence.

Dr. Frey says, "We did a survey to collect data, and we worked with the American College of Radiologists to analyze it." The result of the survey, he says, is that the additional test added nothing new. The FDA will review the data and is scheduled to announce its decision of whether to require the additional test at the end of September.

Alternatives?

Other physicists have been developing new breast-imaging machines. Working under a grant from the Department of Defense, physicists at Jefferson National Lab in Virginia announced in March a new mammography machine that uses Positron Emission Tomography, commonly known as a PET scan.

"The PET is breast-density blind," says Dr. Eric Rosen, a mammographer at Duke University Medical Center who is conducting the clinical trials of the lab's single prototype. "Instead of using anatomic detail" as traditional mammography does, Dr. Rosen says "it looks at the physiology of breast tissue versus cancer tissue to pick up abnormalities." Because cancer cells metabolize glucose faster than breast tissue, the cancer cells are easily seen on the PET scanner as bright spots. The radiation dose is about the same as that of a traditional X-ray mammogram.

This is the second such breast-imaging machine developed by the Jefferson Lab. The first uses Breast-Specific Gamma Imaging and is already available.

Why is the Department of Defense investing in breast-imaging projects? Dr. Mark Smith, a biomedical imaging physicist at Jefferson Lab, said technology is a key element in helping maintain the health of current military personnel retirees. The FDA's estimate of 33 million annual mammograms does not include those performed at Veterans Affairs facilities.

It is unclear how these new technologies will fit into the diagnosis of breast cancer.

For now, says Dr. Helvie, "I think we would all rather have a system for detecting cancer in which some patients have false-positives rather than missing the cancer in other patients."

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Take steps toward a cure for cancer

Beginning Sunday, participants in the Dallas/Fort Worth Breast Cancer 3-Day will walk a 60-mile route from Ameriquest Field in Arlington to Dallas City Hall to raise money for the Susan G. Komen Breast Cancer Foundation.

Net proceeds will be used to fund breast cancer research, education, screening and treatment programs, and to help fund the National Philanthropic Trust breast cancer fund.

Registration for the event is still open and costs $90. All participants are required to raise $2,100 and have an additional four weeks after the walk to submit the donation. Anyone may come to the designated "cheering stations" along the route on each of the three days: C.P. Waggoner Park in Grand Prairie (Friday), Northcrest Park in Dallas (Saturday) and Dealey Plaza in Dallas (Sunday). More information on the walk is available at www.the3day.org.

Robert Frederick

GERALDINE WILKINS-KASINGA/Los Angeles Times

A woman receives a mammogram at Brookhurst Community Center in Anaheim, Calif.