

YOU EXERCISE REGULARLY and follow a healthy diet — habits that help keep your body in top shape inside and out. Yet while you can use the mirror to judge your physical attributes, how do you know what's really going on inside? Numerous diseases are predetermined by your genetics, and no amount of exercise can protect you forever. Fortunately, we can take advantage of technological advances in science and medicine. A new diagnostic tool called Electron Beam Tomography (EBT) helps shine a light on your internal workings. The question is, are you willing to accept what you find?



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TESTING ONE, TWO, THREE

AN EBT, OR "BODY SCAN" as it is more commonly called, takes a series of 5mm-thick images and reconstructs your body. A full body scan takes 80–100 images, and a heart scan runs 33–40 images. At Harbor-UCLA Medical Center in Los Angeles, the process begins simply enough. I'm asked to drink an iodine and Crystal Light mix. From there, it's on to the scan.

The procedure itself is quite simple. Unlike a CT scan or an MRI, where you are crammed into an enclosed contraption (often too small for a full-sized bodybuilder — IFBB pro Ernie Taylor got stuck in one), the body scan is performed on a mechanized table that moves you through a hoop of electron beams. It's much more like lying on a magician's table than it is an *Altered States* experience.

In the process, you are exposed to about as much radiation as you would be when having a set of dental X-rays. The radiation technologist, Sivi Carson, attaches three electrodes — one to each of my wrists and one to my torso.

Over the course of 10 minutes or so, the machine performs three scans — one of my upper torso, one of my lungs, and one of my heart. While visions of *The Texas Chainsaw Massacre* come to mind as the table moves me back and forth through the hoop of electron beams, the process is painless. "Take a deep breath. Blow it out. Take another deep breath and hold it," Carson says for each of the three images. During the first two scans, I move through the mechanism smoothly. The third time, when it's scanning the heart, the table

starts and stops every second or so. The table actually moves with your heartbeat, so the image shows your heart at the same point in the cardiac cycle.

THE HEART OF THE MATTER

IN MY CASE, GETTING THE RESULTS was a three-step process. Ten minutes after the scan, I met with Carson as preliminary images arrived as computer files. Shortly after that, I met with Matt Budoff, MD, board-certified cardiologist and assistant professor of medicine at the UCLA School of Medicine. About 10 days later, I received a full written report after specialists in the image fields had reviewed the results.

Carson provides the first measure of relief. "It looks like you have no calcification in the heart," she says. "Calcification shows up as white spots in the arteries." She contrasts the images of my 40-year-old heart with those of a 40-year-old man with a shocking amount of gunk in his arteries. Dr. Budoff confirms Carson's results, and so does the specialist's report,

giving me a score of zero for calcification. The heart score measures the total volume of plaque buildup in milliliters. Most men under the age of 40 score zero, and of the 21,000 people tested, all men over age 75 showed at least some calcification.

"While a low score doesn't eliminate the possibility of coronary disease, it does show reduced risk," Dr. Budoff says. If you have no calcified plaque, it's still possible that you might have soft plaque, which is undetectable by the test, or heart arrhythmia, either of which can cause a "coronary event," a quaint euphemism for your personal Big Bang.

In addition, Dr. Budoff points out that a small amount of hard plaque can have negative consequences just as large amounts can. "One of the dangers is that the plaque will come loose in the artery and cause a heart attack. It's a misconception in both the medical community and lay population that you need a high percentage of blockage to have a heart attack," he says. "You can have only a 20% blockage, and if that plaque breaks off or ruptures, it can cause a heart attack. The presence of plaque is more dangerous than the percent of the blockage. That's why people can have a treadmill test that shows no problem, yet they can die of a heart attack shortly thereafter."

THE LUNG AND THE SHORT OF IT

DR. BUDOFF POINTS OUT that my lungs aren't as clear as they might be. Have I ever smoked, he asks. No, I just live and breathe in Los Angeles, a risk factor in itself. Later, the specialist's report will

WEIGHING IN

Weigh the pros and cons of body scans before you schedule your own.

PROS

- » Fast and easy
- » Provides a fairly accurate look at your health
- » Allows you to catch potential diseases early on
- » Provides funding and data for human research (when done at not-for-profit institutions)
- » Good to detect potential heart, lung, liver and colon problems

CONS

- » Somewhat costly
- » Involves minor radiation exposure (EBT)
- » May cause a false sense of security or an unnecessary scare
- » It may fail to detect pancreas, skin, kidney, intestine, prostate and ovary problems

returns the following finding: "Lung: Scar right middle lobe. Three mm nodule right upper lobe. A follow-up chest exam in six months may be considered." Is this cause for panic? "Not necessarily," Dr. Budoff says. "Many people have small nodules in their lungs. They're like polyps, and they're typically benign. We don't really worry about these nodules unless they are at least 5 mm in diameter." The recommendation for a six-month follow-up exam is highly conservative, he assures me. Nevertheless, you can trust that I will get one.

SCANNERS: WHO SHOULD GET ONE?

JUST BECAUSE THE TECHNOLOGY EXISTS doesn't mean that you need to take advantage of it. Since few people under age 40 have any calcifications, people in this category should probably only seek out a body scan if they smoke or have diabetes, hypertension or high cholesterol, or if they have high-risk genetic factors. One thing to keep in mind is that lung cancer is undetectable until it has progressed to a certain stage, but a

of the blockage. That's why they can die of a heart attack."

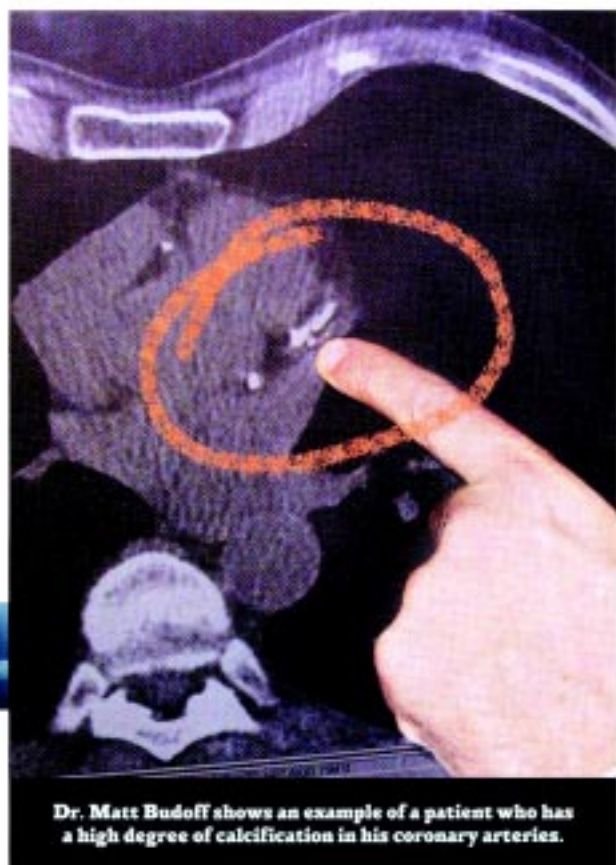
body scan can help you beat this deadly disease. If you smoke or have a family history of lung disease, you might seek out a body scan at a younger age.

Finally, take your personality into account. How will you react if you're given a clean bill of health? Don't use this as an excuse to indulge in less-than-desirable lifestyle choices. This can jeopardize your health and place you in a higher-risk category for the very problems you're trying to detect and avoid.

How will you react if you find a potential problem? It's M&F's contention that knowing is always better than not knowing, but that's a personal decision you have to make. We believe that learning of a potential problem, even if nothing ever comes of it, is worth the stress.

INSURANCE VS. ASSURANCE

COMPARED TO PROCEDURES covered by insurance, scans can be expensive. Most people have to pay for them out of pocket, which can set you back about \$400–\$900. "Most insurance companies don't pay for body scans because they're considered a screening test," Budoff says. In theory, Budoff says that early detection could be a way for insurance companies to save money, but the companies view it differently. "The average per-



Dr. Matt Budoff shows an example of a patient who has a high degree of calcification in his coronary arteries.

son is on an insurance plan for only about three years. If the test turns up a problem, the insurance company incurs a lot of expense for the scan and the follow-up," he explains. "The average person would probably be on another insurance plan by the time any undetected problem might have occurred. In other words, very few insurance companies want to make the original investment because your next insurance company is the one that's likely to benefit from that expense."

While this procedure can be very effective at detecting certain health problems, prevention and treatment are still your responsibility. Nothing can help you overcome or avoid a serious health problem the way a healthy lifestyle that includes good nutrition and adequate exercise can. It also relies on one thing that many bodybuilders overlook — the initiative we must take in seeking out proper health care for prevention and early detection of any adverse conditions. **M&F**

Steve Stiefel is a staff writer for FLEX magazine.

BODYSKAN

Jim Stoppani, M&F science editor, takes the Body-Scan Challenge



1) The technician attaches electrodes to monitor the beating of Jim's heart.



2) The table moves in sync with the heartbeat to capture the heart at the same stage.



3) Jim discusses the results of his body scan with UCLA's Dr. Matt Budoff.



4) Jim's years of lifting and healthy eating pay off with a clean bill of health.