

Men's Health

The
Ultimate
Health Test, p.116

SELF-CARE

By Joe Kita

I am staring at my potential killer. Given the chance, it could swiftly choke off my life. It's hiding deep within my circumflex artery, the blood vessel between my heart's left atrium and its right ventricle. It's a bright white speck of calcified plaque, cold and emotionless. "This could kill me?" I ask, pointing it out on the computer screen. "This little dot right here could kill you, yes," says Harvey Eisenberg, M.D. I watch as he taps at his keyboard and electronically pulls the plaque out of the vessel, enlarges it, enhances it three-dimensionally, then measures its volume and density. The tiny deposit, which had been no bigger than a pinhead, is now looming in the middle of the computer screen, rotating under the doctor's inspection.

"Your job," he deadpans, "is to get rid of that."

The Killer Inside Me

The waiting room at the HealthView Center for Preventive Medicine in Newport Beach, California is serene. I sit facing a Japanese wall fountain, water trickling down across bromeliads. At its base is a pool, the bottom of which is spotted with pennies. Like the patients before me, I pitch one in for good luck.

I am about to undergo a new and potentially revolutionary procedure. For 15 minutes, a modified electron-beam computed-tomography scanner (EBCT) will take hundreds of picture-slices of my body, working methodically from neck to hips, just like a CAT scan. Special software will then transform this data into three-dimensional images of my heart, lungs, spine, stomach, prostate, colon, and every other internal organ. The result: a virtual tour of my insides projected on a computer screen.

I'm scared. I'm 40 years old, and although I'm lean and physically fit, my total cholesterol is a stubborn 230, and my father died at age 62 of a heart attack. I worry I may have only a couple of decades left.

And shortly, I will know for sure.

When it's time for my exam, a white-coated technician named Nancy shakes my hand. There is no nurse to take my blood pressure, check my weight,

or press a cold stethoscope to my chest. No one even asks to examine the results of my last blood test. At HealthView, such things are obsolete.

Nancy ushers me into a beige, sterile-looking room and asks me to remove my belt and empty my pockets. There's no embarrassing open-backed gown to don. All my clothes stay on. The only prep work required is not eating or drinking for 6 hours prior, having three electrodes taped to my chest, and swallowing a cup of supercarbonated fluid to inflate my stomach.

Then I lie back on the scanner's tabletop surface and extend both arms above my head. Since small amounts of radiation will be emitted as the machine takes its snapshots, Nancy goes into another room and communicates via intercom. The tabletop slides slowly backward through a large ring. Unlike with some CAT scans or MRIs, there's no claustrophobic feeling. It's an open unit with a perfect forest scene on the ceiling for me to gaze at. I feel as if I'm looking up at heaven, which is not at all reassuring.

"Take a deep breath," says Nancy. "Blow it out. Now inhale again and hold."

The EBCT scanner screens my torso in three parts. I hold my breath for approximately 30 seconds during each. Then it takes two more,

slightly longer scans, this time stuttering its way back down my body. And that's it. I sit up and put my belt back on, and then Nancy escorts me to the doctor's office for the typical hour-long consultation.

Dr. Eisenberg is the brain of this operation, and, fittingly, his office looks like an air-traffic control center, only without the view. Computers clutter a wing-shaped desk, and behind them sits a wallful of video screens. The doctor himself is 60 years old but looks 10 years younger. That's a good sign.

A specialist in radiology, Dr. Eisenberg has been doing these physical exam/scans for 14 years. He's one of the largest providers, projecting 11,000 patients this year, or 30 to 40 per day. Tens of thousands of people have undergone the procedure, and many are alive today because of what was found. And he discovers something in everyone.

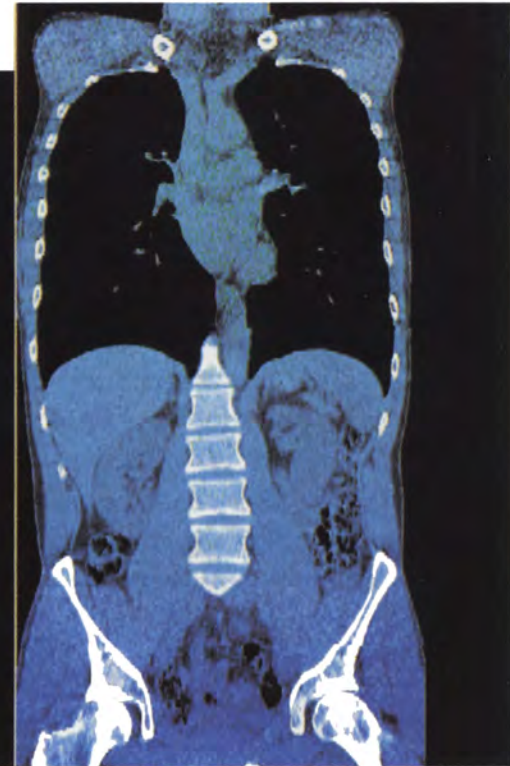
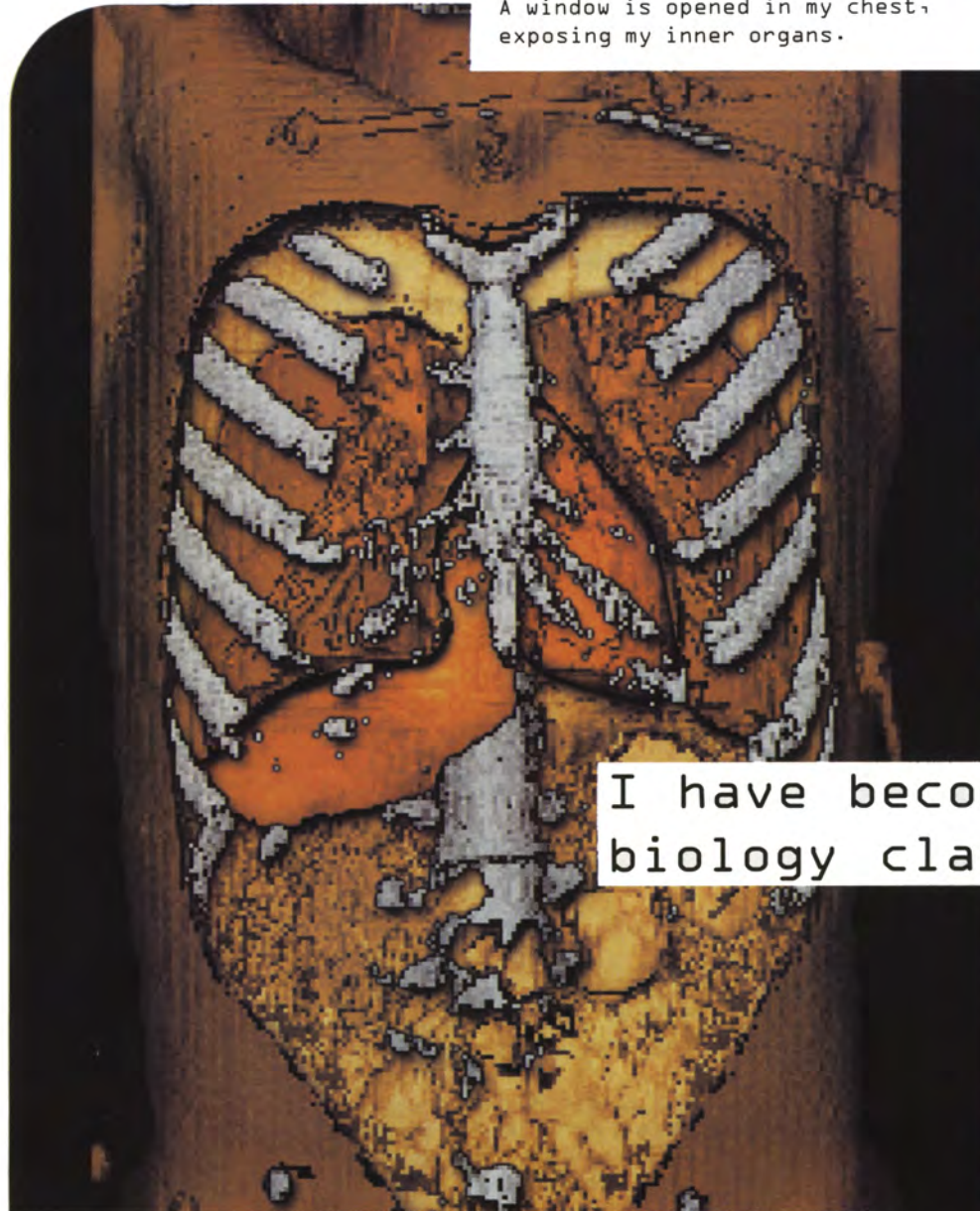
"I joke that I have a box of gold stars, and I'll put one on the forehead of the first person who gets through this without my finding something significant," he says. "I've yet to open the box."

Dr. Eisenberg insists, however, that this is as much a preventive procedure as it is a diagnostic one. Any symptomless abnormalities that are uncovered are likely to be in the formative stages, when they can be easily managed and eliminated. In fact, he claims that someone of my age who is scanned annually and follows recommendations could live into his 90s or 100s. That's 20 to 30 years longer than the average man's life span.

"The way medicine is practiced today is flat-out wrong," says Dr. Eisenberg. "Doctors are trained to wait for people to develop symptoms and then react. Yet what person would conduct his business by sitting and waiting for catastrophes to happen? That's called crisis management, and everybody knows it doesn't work.

"Your body is not this wonderful machine with bells that go off the minute something is wrong. With major killers like heart attacks and strokes, in most people the first symptom of disease is the heart attack or the stroke, and more than a third of them die of it."

A window is opened in my chest,
exposing my inner organs.



I have become the frog in
biology class. **Dissected**



Dr. Eisenberg recently scanned more than 350 physicians—cardiologists, family practitioners, surgeons, deans of medical schools—and he says not a single one didn't become excited about the process. Those in the medical world who remain skeptical argue that too much knowledge can be dangerous, especially for younger patients like myself. For example, a small growth uncovered in the lung could remain small and asymptomatic for life, or even disappear on its own. Yet once you're aware of its existence, you'll risk life-threatening surgery in order to remove it.

That argument agitates the normally subdued Dr. Eisenberg. "You tell *me* what disease you don't want to know about," he says. "The answer to cancer isn't in the billions we spend on exotic surgeries. The answer to cancer is finding it very early, when you can effectively deal with it in any number of ways. Let me show you something."

And with that, he begins tapping at his keyboard, summoning to his computer screen a

succession of virtual body parts. Each is an actual internal image, startling in its clarity, from a severely diseased patient who was supposedly perfectly healthy.

"This is a 53-year-old male who looks like Mr. America, in absolute top physical condition," he explains. "He had just come from Harvard's main teaching hospital, where he had a stress EKG, and a cardiologist gave him a clean bill of health. Yet look at all this plaque in his arteries. This is the kind of guy who just keels over, and everybody is amazed because he was so healthy."

"Now," says Dr. Eisenberg, shifting in his chair. "Let's take a look at you...."

Dr. Eisenberg begins with a survey of my body, a quick once-over to see if there are any obvious problems. It's difficult to accept that this image on the screen is me. I have become the frog in biology class. Dissected.

A window has been opened in my chest, and

One-millimeter slices
of my body flip by like
pages in a book.



A piece of plaque, no bigger than a pinhead, deep within my heart

we peer into that. One of the doctor's first observations is that I have very little internal body fat (11 percent to be exact). That's good for overall health, but it makes his job a bit more difficult. Fat appears as darkish areas on the scan, surrounding the organs and helping define them. "But it's still a good visualization," he assures me.

The two images on the opposite page that look like x-rays are actually 1 millimeter (mm) slices of my torso. (On the doctor's screen, they're black and white; they're colored here to show detail.) The doctor flips through these and others like pages in a book. Then he asks if I have any particular health concerns, and I mention my family history of heart disease. "We look at our parents and figure we're going down the same path," he says, "but that simply isn't true. No matter what we find, it can be readily dealt with, even if there's a bad genetic drive. So let's examine your cardiovascular system."

Dr. Eisenberg navigates the blood vessels of my body, steering through them like a veteran river guide. As he does so, he points out areas of interest while warning me of upcoming trouble spots. ("At the undersurface of the aortic arch is an area of high turbulence, where the blood swirls around a corner; it's typically where we first see plaque formation.") But I don't have any there, thank God.

He inspects my heart more closely, examining it now in 1 mm slices. And there, right at the origin of the circumflex artery, is a small white dot. It's instantly visible against its black-and-gray backdrop. The white is calcified plaque, an actual bit of formative bone. It represents an artery that's begun to harden.

"Plaque is made up of fat, collagen, muscle fiber, and bone," explains Dr. Eisenberg. "Once the calcium gets into the plaque, it anchors it. And the anchoring, together with the mechanical stress of blood flowing against it, can cause a fissure. Blood then clots around this crack, rises up to plug the artery, and causes a heart attack."

At one time, it was thought that only large plaques behave this way. "But two-thirds of the time, the plaque causing a heart attack is less than a 50 percent blockage," he says. "So the real risk predictor is not how big your plaques are, but how many plaques you have. The more surface area they cover, the higher the probability that one will rupture."

Dr. Eisenberg scores each of his patients based on how much plaque he finds. I have two lesions—the one near my heart and another of similar size in an artery feeding my pelvis. (Thankfully, there is none in the vessels leading to my penis, which would signal impending impotence.) Their combined volume is 3.2 MM³, giving me a score

of 1.1 on a scale of 1,000. But before I can rejoice, he looks me squarely in the eye and says I am now carrying a disease that I have to take seriously.

At first, I find this difficult to accept. I mean, my score was pretty damn close to perfect. But the doctor explains that disease isn't something you measure by degrees. You either have it or you don't. What's present in me is the beginning of a deadly process. In fact, my score is exactly average for a 40-year-old guy. And while my risk of heart attack is low, Dr. Eisenberg stresses that I want to have a score of zero. "That's normal," he says.

The most striking part of this analysis for me is how crude and undependable it makes cholesterol testing seem. "Standard cholesterol testing has only a 7 percent to 10 percent predictor value," says Dr. Eisenberg. "It's not very good. Two-thirds of people with high cholesterol don't develop heart disease, and most heart attacks occur in people with normal-range cholesterol."

The second eye-opener is that despite all the time I spend exercising (10 hours per week), it doesn't completely protect me. I've entered the risk game at age 40, just like every other male. I have developed a disease. "That's the great male misconception," says Dr. Eisenberg. "Physical fitness does not completely protect you from this disease. While there's no question that going from sedentary to some reasonable level of activity changes your cardiovascular risk, it just takes you part of the way. Proper nutrition and stress control play even bigger roles. I've seen a lot of athletes in here, guys at the peak of fitness, who are loaded with plaque."

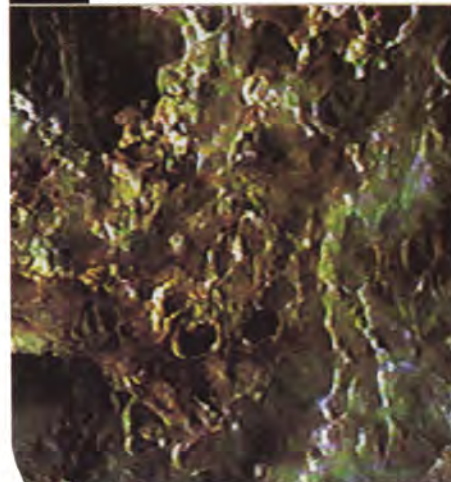
Now that mine has been quantified, my job is either to thwart its growth or to eradicate it. Dr. Eisenberg suggests a multipronged attack: (1) Eat a low-fat, whole-food diet rich in antioxidants; (2) keep my immune system strong by managing stress more effectively; (3) take a baby aspirin every other day to thin my blood so additional platelets



The airway tree in my lungs is clean. I've never smoked, and never will



A single bronchial tube is digitally cut open and examined.



The airfield of a smoker's lung appears in tatters.

won't aggregate around my lesions; (4) have my blood examined by a lipidologist to determine exactly how my body metabolizes fat and whether I should consider taking medication; and (5) continue to exercise, but use it as a stress-reducer rather than as disease armor.

"Untreated, plaques like yours grow at a rate of 20 percent to 250 percent per year," says Dr. Eisenberg. "But treated, they grow minimally, not at all, or even disappear. Now, let's take a look at your lungs."

I have never smoked a cigarette, and I am suddenly thankful for that. Dr. Eisenberg is scrolling through my lung field, one of the most complex structures in the body. The job is tedious, simply because there is so much of it. If you were to spread out its entire anatomy, it would cover a tennis court. But what really makes this process painstaking, at least for me, is that he's searching for cancer. Yes, cancer inside me. "I'm looking for a little blip," he explains. "I can see it right down to a half millimeter in size. On a chest x-ray, a tumor might have to be the size of my fist to produce a bulge in the border of the heart big

enough to notice. So we're talking up to a 3,000 percent increase in sensitivity to lung cancer with this technology. The chest x-ray fundamentally belongs in the Smithsonian."

I can't help but hold my breath as he performs this virtual bronchoscopy. What you see in the image on page 120 is my airway tree. He inspects the individual branches, cuts them open, and even examines the surrounding air fields at the cellular level. This last component resembles a fresh, moist sponge. He terms it "beautiful," but to give me some perspective, he calls up the same section from a patient of similar age who smokes. The sponge is in black tatters.

"That's the result of inhaling 4,000 substances, including cyanide and carbon monoxide," he explains. "Secondary smoke can do that, too. If you want to help somebody stop smoking, this is how you do it. You show them their lungs. Well, you're doing pretty well so far. Want to move on?"

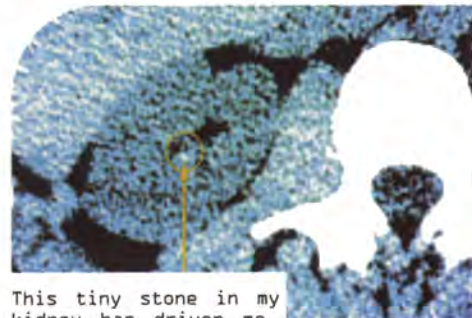
"Now we're in the abdomen," says Dr. Eisenberg, continuing his play-by-play. "This is your liver, and this sac hanging off the bottom is the gallbladder. That looks okay, as does your spleen. These V-shaped structures are your adrenal glands. I can tell by their size and appearance that they're functioning normally. Now here is the pancreas, which is a deadly organ ... [he pauses to inspect it, as I pray silently] ... but I see no signs of tumors.

"In this area, I'm also searching for abdominal aneurysms," he goes on. "About 15 percent of men over 50 get them, and they can be lethal. None here, though. Now I'm looking at your prostate gland, which is a little enlarged. It's in the upper limits of normal, but it bears watching. I don't need to put my finger in your rectum to feel that. I can see it. You should start getting an annual PSA test.

"Moving on to the colon, you can see how difficult it becomes to trace the intestine through this area. That's because there's a lot of residue in your bowel—feces. [He looks at me accusingly, but I swear I don't have to go.] If we had given you a cleansing prep, I'd be able to do a virtual colonoscopy."

Next, Dr. Eisenberg summons my stomach to the screen. Fortunately, it's emptier than other parts of me, and he is able to slice it in half and search for ulcers, cancer, and polyps. He finds nothing worrisome.

Finally, he zeroes in on my kidneys. They look good, except that toward the bottom of the left one, there's a bright white spot, similar to the plaque I saw previously near my heart. "That's a kidney stone," he says. "It's still small enough [less than a millimeter in diameter] that it should pass. But you'll need to drink a lot of fluid. If it



This tiny stone in my kidney has driven me to guzzle springwater.

The most important physician you'll ever have in your life is you.

grows larger and gets stuck, you'll think you've been kicked by a mule."

Without thinking, I reach for my cup of water on the desk and swallow hard.

We're inside my spine now, the last leg of what's been a truly fantastic voyage. And the detail here is perhaps the most unbelievable. After examining my spinal column from the outside and pronouncing it "healthy," Dr. Eisenberg splits it and looks inside. Not only can he measure the size of the spinal canal, but he can visually check for osteoporosis, which he says he finds just as often in men as in women.

"You're lucky," he says. "You were born with a really good spinal canal. These holes are gigantic, and there's nothing compromising the nerves. Your bones are solid blocks. There's no hollowing out. This is a healthy spine, and I don't see many of those."

But when he moves to a higher resolution and begins inspecting each vertebra, he detects some early signs of degeneration. Specifically, he notices a slight bulging in my bottom two disks.

"Despite the fact that your joints are normal, the ligaments around the joints are thickened," he explains. "This little bulging in here isn't normal. It's quite minor, and most people would say that's fine, but it isn't. The time to deal with it is right now."

Dr. Eisenberg guesses that I'm a runner, and he's right, usually 20 miles a week on pavement for the last 6 years. That pounding is what's causing the compression. To alleviate it, he suggests I switch to power walking or trail running, or have my stride analyzed by an exercise physiologist.

"So that's it," he says, turning away from the computer. "We'll give you follow-up materials and send referrals. But before you leave, you need to understand one thing: The most important physician you'll ever have in your life is you. The actions you take on a daily basis will mean far more to how long or how well you live than anything any physician can ever do. Hopefully, this



My colon, in all its glory. (We'll spare you the look inside.

A cross-section of my spine, showing a disk, joint, and ligament



visual imagery will motivate you. What I've done is put you in charge of your disease."

4 Weeks Later

My desk is littered with empty water bottles, and every time I pee, I pay way too much attention to my stream. Any twinge in my chest reminds me of that piece of plaque, and my lower back has seemed a bit crankier lately, even though I've stopped running on hard surfaces. I fear that such intimate knowledge might turn me into a hypochondriac, living not in ignorant bliss but in the constant shadow of death. It's going to be a long year before I go back, get rescanned, and see if I've made any progress.

Dr. Eisenberg isn't concerned. "It's important for you to be aware of your disease on a daily basis," he says, "because that's when you make decisions about diet, exercise, and stress control that ultimately affect it. I used to tell patients they needed to do x, or else y would happen, but they rarely did it. With this technology, I supply a different kind of motivation. Yes, it can be disturbing, but that's what makes it effective."

And he's right. I just have to learn to keep it in better perspective. One unquestionable benefit, though, is the deep satisfaction that comes from knowing I won't be dying of natural causes anytime soon. I was right to buy extended warranties on all those appliances.

This experience has also colored my opinion of every facet of disease detection. Cholesterol screening, digital prostate exams, stress tests—they all suddenly remind me of a carpenter knocking on a wall to find a stud. But that's about to end. Next year, Dr. Eisenberg will unveil his latest technology, one beyond even the capabilities of this one, and he plans to license it everywhere. Soon, we won't be guessing anymore. You'll know, just as I do, what's going on inside you.