

# I face a known risk from cancer and an undetermined risk from the scan used to detect it. Which is worse?

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We all have certain numbers we'd rather not think about: weight, age and, for me, in addition to breast cancer risk, how many MRIs might be too many.

What's worse — a known risk for breast cancer (mine is 42 percent) or an undetermined risk for the diagnostic tool used to detect it?

The tool I'm referring to is magnetic resonance imaging (MRI) with gadolinium contrast. Gadolinium is a rare earth metal whose presence highlights certain abnormalities, aiding in the diagnosis of many organ, musculoskeletal and soft-tissue diseases.

Because of my elevated risk for breast cancer, I've had six of these MRIs over the past eight years. An MRI, alternating with mammograms and sometimes ultrasounds, every six months, is part of the American Cancer Society's recommended protocol for those with a greater than 20 percent lifetime risk of breast cancer.

In 2017, the Food and Drug Administration announced that it was investigating the health effects of "gadolinium remaining in patients' bodies, including the brain, for months to years after receiving these drugs." While the FDA considered the benefits to outweigh any potential risks, it added a warning requiring that patients be given a medication guide before receiving a gadolinium-based contrast agent.

The FDA also said that since some patients may be at a higher risk for gadolinium retention, including "those requiring multiple lifetime doses, pregnant women, children and patients with inflammatory conditions," health-care professionals should consider the retention characteristics while choosing an agent.

Retention was once thought to affect only individuals with poor kidney function. Not anymore. It is unclear what gadolinium retention means, especially in the long term.

I had something new to worry about, in addition to breast cancer.

My risk of getting it is composed of multiple factors, including breast density.

I have dense, tightly woven breast tissue. Doctors refer to my breasts as “busy” and “complex.” My MRIs, like my mammograms, resemble satellite images of rush-hour traffic: white on white on white. Despite the lowered hormones because of menopause, my ultrasounds still appear like gel inside a lava lamp, black cystic orbs of varying diameters suspended in pulsing gray waves.

Fibrocystic or dense breasts raise a woman’s risk of developing cancer, when compared with fatty breasts. The risk also increases with higher density, according to the National Cancer Institute.

Dense breasts also make detection of abnormalities much more difficult, as the FDA acknowledged in March. The FDA proposed that mammogram providers be required to inform women with dense breast tissue that interpreting their screening tests could be harder because of it. The agency also recommended that women discuss getting additional tests for cancer with their physicians.

I’ve been called back to the breast center more than a dozen times since my early 20s for additional images following routine mammograms (I’m 57 today). Even with close-up views and extra ultrasounds, I’ve ended up having cysts aspirated and drained, and multiple biopsies — five to be exact. All benign, except the last: a lumpectomy, to excise atypical, albeit noncancerous, cells.

As Lisa Guerra, my breast cancer surgeon with a practice in Newport Beach, Calif., said, “busy, proliferative breasts form more things. [They] could potentially create spots even if they are benign.”

An MRI looks at blood flow patterns — mammograms and ultrasounds do not — and can help pinpoint malignancies in the early stages.

“An MRI is far more sensitive to detecting what could not be possible to detect on an ultrasound or a mammogram,” said January Lopez, Director of Breast Imaging at Hoag Hospital in Newport Beach, Calif. “The three tests are best used in concert,” she added.

MRIs are viewed in layers or “slices.” Tests are done as the woman lies face down, her breasts inside twin “baskets” that open from within the table. Unlike for a mammogram, there is no compression. A preplaced IV delivers the contrast about 20 minutes in; five minutes later, the magnets stop, and the test is over. Aside from the noise, I prefer MRIs to mammograms and ultrasounds; there is no health-care professional at my side whose face I’m anxiously trying to read.

In the majority of breast MRIs, a cancer will show up as white on black — the black being normal fatty tissue. My MRIs continue to show my breast tissue to be heavily striated with white veiny streaks. Blood flowing here, there, everywhere?

Lopez had to study my first MRI for over an hour to orient herself to the prolific yet normal activity of my breast tissue. Most other MRIs, she said, will typically take only a few minutes to accurately read. This is what was meant by MRIs being sensitive.

Now that we had a baseline, the difficult part was over. Subsequent scans could be compared year over year, which is exactly what has been done.

Guerra calculates cancer risk using both the International Breast Cancer Intervention Study (IBIS) and the NCI calculators, she said, because each “looks at family history in a different way,” thus giving her “the extremes of values of where an individual’s true risk falls, maybe in between.” By the way, these calculators are used for women never diagnosed with breast cancer. After each test, my risk is recalculated. Normal results help lower risk, slowly, over time.

My true risk includes, but is not limited to, breast density. My heritage is Ashkenazi Jewish. I’ve never been pregnant. Those five biopsies — though none found cancer — get folded into an algorithm. Plus, four decades ago, my sister had breast cancer, stage 0, for which she had surgery and reconstruction. She was 38 (and I was 17). This year, she will be 79.

It’s likely her cancer came from a risk factor she knew nothing about.

Except for the Ashkenazi Jewish heritage, my sister had none of my risks. We had no “family history” until her diagnosis; genetic testing since does not show the gene.

Her unknown risk? The myriad X-rays she underwent during puberty in the 1950s for the diagnosis and treatment of scoliosis. At the time, the long-term effects of the X-rays were not known.

Today, radiation’s risks are well-documented. The American Cancer Society notes that “teenagers and young women who had many X-rays of the spine to monitor scoliosis have been found to have an increased risk of breast cancer later on.” It’s a question asked on mammogram intake forms.

Which brings me right back to those gadolinium deposits in the body, including the brain, the FDA is warning about. What might it eventually mean? Brain cancer? Dementia? Heightened anxiety? Sensory loss?

And what about all those immutable risks I know I have? Some women with similar risks choose prophylactic double mastectomy with reconstruction, which also makes MRIs a moot point; others postpone testing for fear of finding out something they don’t want to know. I understand both. I can think about the former (but not the latter), but I’m basically back where I started: Should I continue with MRIs?

Luana Marques, associate professor in the department of psychiatry at Harvard Medical School, and clinical psychologist at Massachusetts General Hospital, advises “sitting face to face with what is in front of you; being mindful, being in present moment,” talking to physicians, and reflecting on everything, multiple times, to cultivate a sense of agency and to connect with the ability to figure out what’s right — for you.

From the inside, the curving portrait of my breast is filled with static, something like white noise. This much I know: The MRI with contrast helps my doctors navigate this blizzard inside me.

My seventh MRI is approaching.

I’m trying not to worry.

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