

Breast Cancer: MRI and Early Detection



Many experts believe that mammograms save lives. But some healthcare providers say that mammograms are not enough for certain people at high risk for breast cancer. Studies suggest that MRIs may improve the early detection of breast cancer in people at high risk.

Current screening guidelines for women at high risk

According to the American Cancer Society, you are at high risk for breast cancer if any of these are true for you:

- You have a parent, brother, sister, or child (a first-degree relative) with a known BRCA1 or BRCA2 gene mutation. But you have not had genetic testing done yourself.
- You tested positive for genetic changes that increase the risk for breast cancer. These are the BRCA1 or BRCA2 mutations.
- Your healthcare provider estimates that you have a lifetime risk for breast cancer of 20% to 25% or greater. This is according to risk assessment tools based mainly on your family history.
- You had radiation therapy to the chest when you were between ages 10 and 30.
- You have Li-Fraumeni syndrome, Cowden syndrome, or Bannayan-Riley-Ruvalcaba syndrome. Or a first-degree relative has one of these syndromes.

If you're a person at high risk for breast cancer, you should ask your healthcare provider if you should have screenings more often, with a variety of tests, starting at a younger age. Breast cancer screening means checking for it in people who don't have any symptoms. For people at high risk, some experts advise a clinical breast exam every 1 to 3 years, and a yearly mammogram starting at about age 30. People at high risk should also have breast self-awareness. This means having a sense of what's normal for your breasts so that you can notice changes in how they look or feel and see a healthcare provider right away. The American Cancer Society advises that people known to be at high risk get a breast MRI and a mammogram every year, starting at age 30.

How MRIs work

Instead of the X-rays used for a mammogram, an MRI uses magnets, radio waves, and a computer to make many detailed pictures of the inside of the breast. A substance called a contrast agent may be put into a vein in your hand or arm. This helps to better outline the breast tissue and possible tumors.

MRIs can find tumors that are too small to feel and may not show up on a mammogram. But an MRI may miss some cancers that would be found on a mammogram. So it's important that high-risk people get both tests.

One reason MRIs may find these tumors is because high-risk people tend to be younger and have denser breasts. This means that the breast has less fat and more fiber-like connective tissue, which can block X-rays during a mammogram. An MRI is not affected by dense, fibrous breast tissue.

Risks of MRIs

It's important to weigh the pros and cons of MRIs for certain groups of high-risk people. Here are some of their risks:

- **MRIs may have a high rate of false positives** . A false positive means it looks like cancer but is not. MRIs are more sensitive. This means they are more likely to find tissue changes that turn out to not be cancer. This leads to more testing to find out if the changed area is cancer. These tests may include another MRI, other tests, or biopsies.
- **MRIs can be costly**. They need special breast MRI equipment and a radiologist trained in breast

imaging to interpret the images. Possible follow-up tests or biopsies add to the costs.

- **People may have an allergic reaction to the contrast.** The contrast agent is injected before an MRI can in rare cases cause an allergic reaction.
- **The MRI machine makes some people uncomfortable.** The narrow tube-like MRI machine may cause anxiety and discomfort especially in people who are claustrophobic. Some people also get anxious about having an injection for the contrast agent.

Before your MRI

Tell your healthcare provider or the technician doing your test if you:

- Have ever had an imaging test, such as an MRI or CT with contrast
- Are allergic to contrast agents or any medicines
- Have a serious health problem, such as diabetes or kidney disease
- Are pregnant or may be pregnant, or if you are breastfeeding
- Have any implanted device, such as a pacemaker or ICD or metal clips or pins in your body
- Have a fear of small, enclosed spaces (claustrophobia)

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