



Can a Mammogram Give You Cancer? A Breast Surgeon Fact-Checks the Viral Claims

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Social media has made it easier to share health information - and just as easy to spread fear. Posts warning women that mammograms are "dangerous," that mammograms "do not save lives," or that mammogram radiation "causes breast cancer" are often written with absolute certainty. The evidence is far more reassuring and far more nuanced.

Mammography is not a perfect test. It can miss cancers, especially in dense breasts. It can produce false-positive results, additional imaging, benign biopsies, anxiety, and overdiagnosis. It also uses a small amount of ionizing radiation. Women deserve honest information about all of those limitations.

But acknowledging limitations is not the same as claiming mammograms are ineffective or broadly dangerous. Major evidence reviews conclude that screening mammography can reduce the risk of dying from breast cancer. The radiation risk is not literally zero, but it is very small compared with the number of breast cancer deaths screening is projected to prevent.

Let us separate viral rhetoric from measurable evidence.

Viral claim #1: "Mammograms do not save lives"

The evidence: Randomized trials and population studies have shown reductions in breast cancer mortality associated with mammography screening.

The evidence review supporting the U.S. Preventive Services Task Force states that trials have established that screening mammography can reduce breast cancer mortality risk. Earlier USPSTF evidence summaries found that, among women ages 50-69, randomized trials showed approximately a 19%-22% relative reduction in breast cancer deaths among women invited to screening. European observational studies reported relative reductions of approximately 25%-31%.

Those percentages are relative reductions, not a guarantee for any individual woman. The absolute benefit varies with age, baseline risk, screening interval, tumor biology, treatment advances, and whether a woman consistently participates in screening and completes recommended follow-up.

It is also true that improvements in breast cancer treatment have helped lower mortality. Screening and treatment are not competing explanations. Earlier detection can find some cancers before symptoms appear, when treatment may be less extensive and the opportunity for cure may be greater. The CDC states that regular mammography can lower the risk of dying from breast cancer and remains the best way to find breast cancer early for most women of screening age.

The scientifically accurate message is not "mammograms save everyone." It is that screening mammography reduces breast cancer mortality at the population level, while the size of the benefit differs among women.

Viral claim #2: "Radiation from mammograms causes breast cancer"

The evidence: Mammography uses low-dose ionizing radiation, so it is inaccurate to say the theoretical risk is zero. It is equally misleading to discuss that small risk without comparing it with the benefit of finding breast cancer earlier.

A typical mammogram has an average effective dose of approximately 0.4 millisieverts, according to FDA radiation-dose information. For perspective, people receive roughly 3 millisieverts per year from natural

background radiation, although exposure varies by location and other factors. The FDA states that the risk of harm from mammography radiation is very small compared with the benefits of early breast cancer detection.

One USPSTF-commissioned modeling study estimated the lifetime effects of annual digital mammography for 100,000 women from ages 40-74. The model projected:

- Approximately 968 breast cancer deaths averted through early detection
- Approximately 125 radiation-induced breast cancers
- Approximately 16 deaths from those radiation-induced cancers

In that model, approximately 59 breast cancer deaths were averted for every radiation-induced breast cancer death. These are modeled estimates, not directly observed outcomes, and the risk varies with radiation dose, number of images, breast size, screening frequency, and age at initiation. Still, the scale of the comparison matters: the modeled mortality benefit was substantially larger than the modeled radiation harm.

Radiation should always be used thoughtfully. Mammography facilities must meet federal quality standards, and imaging teams should minimize unnecessary views while obtaining images of diagnostic quality. But avoiding indicated mammography because of viral claims about radiation can exchange a very small theoretical risk for the real risk of a delayed breast cancer diagnosis.

Viral claim #3: "If mammograms worked, nobody would be diagnosed between screenings"

The evidence: No screening test detects every cancer.

Some breast cancers are difficult to see because of dense tissue, tumor location, subtle imaging features, or aggressive biology. An interval cancer is diagnosed after a negative screening examination and before the next scheduled screening. The existence of interval cancers demonstrates the limits of mammography; it does not prove that screening has no value.

Mammograms may identify masses, architectural distortion, and tiny calcifications that cannot be felt. The CDC notes that mammography can sometimes identify breast cancer as much as three years before it can be felt. Detecting many cancers earlier is clinically valuable even though the test cannot detect every cancer.

This is also why breast awareness matters. A new lump, bloody or clear nipple discharge, skin dimpling, nipple inversion, redness, swelling, or another persistent change should be evaluated even if the most recent mammogram was normal. A screening mammogram is designed for someone without symptoms; a new symptom may require diagnostic mammography, ultrasound, MRI, biopsy, or another targeted evaluation.

Viral claim #4: "A callback means the mammogram harmed you"

The evidence: Most callbacks do not result in a cancer diagnosis, but follow-up is how radiologists clarify an area that cannot be fully evaluated on the screening images.

A callback may lead to additional mammographic views, ultrasound, short-interval follow-up, or biopsy. This can cause real anxiety, inconvenience, and expense. False-positive results are an acknowledged harm of screening, particularly with more frequent screening and among younger women with denser breast tissue.

However, a false-positive result does not mean the mammogram caused cancer. It means an area looked sufficiently different or uncertain to require clarification. Comparing prior images, using high-quality breast-imaging facilities, and ensuring prompt follow-up can reduce uncertainty and prevent incomplete care.

Viral claim #5: "Thermography or ultrasound is safer and can replace mammography"

The evidence: Neither thermography nor screening ultrasound has been established as a replacement for mammography in average-risk women.

The FDA warns that thermography should not be used instead of mammography. Thermography measures patterns of heat and blood flow near the skin; it does not provide the same anatomic information and may miss early cancers, including cancers that appear primarily as calcifications.

Ultrasound is valuable for evaluating specific findings and can be used as supplemental imaging in selected women, but it is not a universal replacement for mammography. Ultrasound can also generate false-positive findings and does not reliably show all mammographic abnormalities.

For women at high risk, breast MRI may be recommended in addition to mammography. The correct imaging plan depends on age, breast density, genetic and family history, prior biopsies, symptoms, and calculated risk.

What mammography can and cannot do

Mammography can:

- Detect many breast cancers before they can be felt
- Identify suspicious calcifications and subtle tissue changes
- Shift some diagnoses toward earlier stages
- Reduce breast cancer mortality across screened populations
- Provide comparison images that reveal change over time

Mammography cannot:

- Prevent breast cancer from developing
- Detect every breast cancer
- Determine with certainty that every abnormality is malignant or benign
- Replace evaluation of a new symptom
- Eliminate the possibility of callbacks, false positives, overdiagnosis, or additional testing

That is not failure. It is the reality of medical screening: benefits and harms must be weighed, and the test must be used for the right person at the right time.

My recommendation as a breast cancer surgeon

For women at average risk, I recommend annual screening mammography beginning at age 40. Women at increased risk may need to begin earlier or add breast MRI. Screening after age 74 should be individualized according to health, life expectancy, risk, and personal preferences.

This recommendation reflects my clinical judgment after more than 20 years of caring for women with breast cancer. It is not identical to every national guideline. The USPSTF and the 2026 American College of Physicians guidance favor biennial mammography for many average-risk women, while other professional organizations allow or recommend annual screening during various age ranges.

Women should understand those differences and participate in the decision. What they should not do is abandon evidence-based screening because an alarming video presented a theoretical risk without context.

Before delaying or canceling a mammogram, ask:

- 1 Is this claim supported by a peer-reviewed study or a public-health authority?
- 2 Does it report absolute risk, or only use frightening language?
- 3 Does it compare the risk of radiation with the risk of delayed detection?
- 4 Is the speaker qualified to interpret breast-imaging and cancer-outcome data?
- 5 Is someone selling an unproven alternative test?

Move beyond fear and into informed action

Mammography deserves honest discussion, not blind promotion and not viral fear. Women should know that the test has limitations, but they should also know that decades of evidence support its ability to find many cancers earlier and reduce breast cancer deaths.

Beyond October™ provides year-round breast health education that helps women move beyond awareness, question misinformation, understand their risk, and take informed action.

Continue learning with April Spencer, M.D., through the Beyond October™ breast health video series and community on YouTube:

https://youtube.com/@draprils Spencer?si=h78bGbUb_crPjiu6

From Breast Health to Best Health™

Medical note

This article provides general education and does not replace individualized medical advice. Discuss your screening schedule, symptoms, breast density, family history, and personal risk with a qualified healthcare professional.

References

- 1 U.S. Preventive Services Task Force. Screening for Breast Cancer: Evidence Report and Systematic Review. JAMA. 2024. [USPSTF evidence review](#)
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- 5 National Cancer Institute. Mammograms. Updated December 2, 2025. [NCI mammography overview](#)
- 6 Centers for Disease Control and Prevention. Screening for Breast Cancer. [CDC screening information](#)
- 7 U.S. Food and Drug Administration. Breast Cancer Screening: Thermogram No Substitute for Mammogram. [FDA thermography warning](#)

Frequently Asked Questions

Can one mammogram cause breast cancer? A mammogram uses a small dose of ionizing radiation. No medical exposure is described as having literally zero theoretical risk, but the risk from a single mammogram is extremely small. Federal health authorities conclude that the benefit of indicated mammography outweighs the radiation risk for women of screening age.

Does radiation accumulate when I have a mammogram every year? Radiation exposure accumulates over time, which is why mammography equipment and facilities are regulated and doses are kept as low as reasonably achievable. Even when repeated screening is modeled over decades, estimated breast cancer deaths prevented substantially exceed estimated radiation-induced deaths.

Can breast compression spread an existing cancer? There is no credible evidence that the brief compression used during mammography spreads breast cancer. Compression reduces motion and separates overlapping tissue, improving image quality while helping limit the radiation dose.

Why do some women still die of breast cancer after regular mammograms? Mammography cannot detect every cancer, and some tumors are biologically aggressive even when found early. Screening reduces population-level mortality; it cannot guarantee survival for every individual.

What if I have dense breasts? Mammography may be less sensitive in dense tissue, but it remains important. Ask for a complete risk assessment and whether 3D mammography, MRI, ultrasound, or another supplemental approach is appropriate for your overall risk.

Can thermography replace my mammogram? No. The FDA warns against using thermography as a substitute for mammography. Relying on an unproven replacement may delay diagnosis.

Should I skip a mammogram if I am pregnant or breastfeeding? Do not ignore a new breast concern. Tell the imaging facility if you are pregnant or breastfeeding so the appropriate diagnostic plan can be selected. Necessary breast imaging can often be performed safely with individualized precautions.

When should I begin screening? For average-risk women, April Spencer, M.D., recommends annual mammography beginning at age 40. Women at increased risk may need earlier mammography and/or MRI. Your plan should be based on a formal risk assessment and shared decision-making.