

Here is a good article by a breast imaging specialist discussing in a quick overview, mammography and the pro-mammography and anti-mammography points of view, and thermography. Towards the end of the article he discusses the benefits of breast thermography. I believe this is an good overview of the topic and one worth reading. I have highlighted the start of the thermography section, but please educate yourself by reading the entire article.

Mammography vs. Thermography Debate 2013

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What's Not Being Said

by Thomas Hudson, MD

As a physician, radiologist, and breast imaging specialist, I've watched the screening mammography debate closely for some time now. Interestingly, it's become fairly predictable; a study is published claiming to show that screening mammography isn't helpful, and may even be harmful, followed by rebuttals from the other side explaining in great detail why the study is flawed, and therefore not valid. Once you know the players it becomes even more predictable. If you tell me who wrote the article and what journal published it, I can fairly reliably tell you whether it's pro or con about mammography without even reading the article. As time goes by, I'm struck more by what's not being said in this debate than what is being said, and would like to address some of those things here.

The first important point is that medical research is not the final word on reality. Like medicine itself, it's as much an art as it is a science, and the science is based largely on statistics. Relying too heavily on statistics is dangerous because they can be mathematically correct and grossly misleading at the same time. A perfect example is a recent study from Europe showing no decrease in breast cancer mortality in those women undergoing screening mammography—a seemingly straightforward study and a “victory” for the antimammography forces. But a rebuttal from the other side claimed that if the data were analyzed differently, the study would have shown a 20% decrease in mortality, thus proving mammography's benefit. Who's correct? How is the average person without a PhD in statistics supposed to know, especially when those *with* the PhD can't agree?

The main caveat is to be careful about any single research study. Research is an approximation of reality—it isn't reality itself. Reality has too many variables. No research study can control them all. Concerning screening mammography, about two-thirds of the studies show a benefit in terms of decreased mortality, and about a third don't. Additionally, *direct* data show that there has been a 30% decrease in breast cancer mortality in the U.S. since the advent of screening mammography. The broadest indication is that screening mammography, though imperfect, saves lives. Not everyone agrees.

A term that's become a catch phrase in this debate is “over diagnosis,” meaning that screening mammography finds cancers that if left alone would never grow enough to kill the patient. A study published in the New England Journal of Medicine late last year claimed that 30% of cancers diagnosed by screening mammography are in this category and recommended that no one have screening mammograms *at any age*.

I have several issues with this rationale, the first being that from my perspective it isn't “over diagnosis,” it's over TREATMENT. Screening mammography has its issues, but let's not make it responsible for

everything. Many non-aggressive cancers *are* overtreated, but that isn't the fault of the test that diagnosed it. I do believe that there are cancers that will never grow enough to kill the patient, but I don't believe that anyone can know which ones they are (other studies have estimated "over diagnosed" cancers at between 1 and 54%). Nor can it be figured out statistically by analyzing large groups of women and measuring tumor sizes. Once a tumor in an individual is treated, it's treated, and we can never know what would have happened had it been left alone. Once again we're dealing with statistics, which can sometimes override common sense.

Even if the recent NEJM article is correct, and 30% of cancers are "over diagnosed", what about the other 70%? The logic behind the over diagnosis argument seems to be, "we're treating some cancers too aggressively-so let's stop looking for them altogether." If you don't screen at all, you don't find the non-aggressive cancers, true enough-but you don't find the aggressive ones either.

And what about breast thermography? Before recommending that we not screen for breast cancer at all, shouldn't women be told about this option? Thermography is a lesser known, but increasingly popular screening test that works by imaging thermal patterns on the skin. A thermogram doesn't do the same thing as a mammogram. It doesn't "see" tumors. It is a physiologic test measuring subtle differences in skin temperature that can be *associated* with an underlying tumor (as well as other pathology).

For many reasons, thermography isn't recommended as a replacement for mammography. But a thermogram has some advantages that a mammogram doesn't, including the ability to detect physiologic changes in a cancer while it's still in the cellular phase-sometimes years before it is detectable mammographically.

Thermography can also detect lymphatic congestion and hormonal imbalances as well as monitor dietary changes. It can assess breast cancer risk, which is also something mammography cannot do. In short, thermography is a tool to monitor *breast health*, not just a way to find disease. *And* there is no radiation or breast compression involved. It's not a replacement for mammography because mammography has some important advantages that thermography doesn't, but it's a useful adjunct. And in women who don't wish to have mammograms it's a great option-one that certainly should be mentioned by those advocating no breast screening at all.

Thermography, with its ability to assess risk and monitor breast health, leads to perhaps the most important point that's never mentioned in this debate, which is that breast cancer risk is largely modifiable. Only 25% (and probably less) of breast cancer cases have any genetic component, which means that 75% of risk has to do with other factors; diet, stress, and environmental factors being among the most important. I discuss these in detail along with other ways to decrease your breast cancer risk in my book, *Journey to Hope*.

The point of all of this is that screening tests, though important, are imperfect. It may make sense to have them, but it doesn't make sense to rely on them completely. Let's have the debate, but let's not get lost in it. It's all too easy to forget about the forest when you're busy examining the trees.