

Mammograms -- Are They Safe? Are They Effective?

American women are bombarded with dire warnings to make sure they get mammograms for early cancer screening. Some suggestions are to start as early as age 40 and, by age 50, most women should be getting one a year. Other women may have multiple mammograms per year recommended to them by their doctor. For instance, one woman was told to get mammograms 4 times every year because she had a bad case of fibrous cysts in her breasts that her doctor was monitoring. But there is a controversial debate about the safety of mammograms that has been going on for many years. Mammograms are basically x-rays to the breast involving ionizing radiation. (Nuclear bombs also emit ionizing radiation.) The procedure involves severe compression to the breast tissue each time a film is taken.

For screening purposes, it is common for a woman to receive a total of four x-ray films taken per visit to a mammogram clinic. This involves two angles of each breast filmed, resulting in a total of four films typically taken per visit. But, if something suspicious shows up, it is not uncommon to have extra films taken for clarification, resulting in more ionizing radiation administered to the breast tissue and more physical and possibly damaging compression.

I believe there are three main reasons NOT to get mammograms for cancer screening purposes:

- 1) **THE RADIATION REASON**
(The radiation involved may CAUSE cancer.)
- 2) **THE COMPRESSION REASON**
(The severe tissue compression involved may induce metastases if a tumor already exists.)
- 3) **THE INEFFECTIVENESS REASON**
(Mammography is an extremely INEFFECTIVE diagnostic tool involving high numbers of false positives and false negatives. It requires follow-up invasive surgical biopsy for certainty.)

1) THE RADIATION REASON

Most official sources on breast mammography assure women that the level of radiation administered in a mammogram procedure is perfectly safe. You will commonly read that it involves less radiation than a dental x-ray, and some sources say less than a chest x-ray. This is misleading and inaccurate information.

Looking at two different ways of measuring radiation, for example, mammograms definitely involve MORE radiation than common chest x-rays. There are numerous ways

of measuring radiation. One way is to measure “rads,” which reflect the amount of radiation absorbed by the tissue being targeted. You could look at this as the “intensity” of the radiation, so-to-speak. An average chest x-ray delivers only .00007 rads. A single mammogram film, on the other hand, delivers .1 - .2 rads. If you round these figures and say that a chest x-ray is approximately .0001 rads, and you consider that two mammogram films are usually taken of each breast (i.e., the same tissue gets radiated twice), then that means that a breast would receive about one-thousandth of a rad during a chest x-ray as apposed to about one-quarter to one-half a rad during a mammogram. This means that a mammogram procedure can be 250 to 500 times more intense than an x-ray. And if extra films are requested for clarification, a woman could be looking at receiving the equivalent number of rads as she would if she subjected herself to 1,000 chest x-rays each time she goes in for a mammogram!

However, rads may not always be the best way to measure the dangers of radiation. The size of body area radiated must also be taken into account. For instance, it is true that dental x-rays are particularly intense, but they only target a very small area of the body. (And much of that area involves tooth enamel, which is not as likely to develop into diseased tissue as other areas of the body.) Chest x-rays typically involve a larger body surface area than mammograms. Thus, another way to measure radiation is in terms of “mrems.” Mrems (millirems) refer to the total “whole-body exposure” to radiation involved in any given procedure. This appears to be a more accurate way of understanding the radiation issue, because But even when looking at mrems, we see mammograms to involve more radiation exposure than chest x-rays. The average chest x-ray measures between 6 and 18 mrems, while the average mammogram film measures between 40 and 80 mrems. (One official source says the average chest x-ray is 10 mrems and the average mammogram is 30 mrems.) Given conservative estimates and taking into account that 4 mammogram films are typically taken, that means that a woman would usually receive 120 mrems when she receives mammography for screening purposes, while she would only receive about 10 mrems for a doctor to check out her lungs with a chest x-ray. Dental radiographs are indeed more using this measurement, coming in at about 250 mrems each, which is why more and more sources are no longer saying that mammograms are less radiation than chest x-rays but are still saying they are less than dental x-rays.

But, some scientists are now reporting that there is NO safe level of radiation. Thus, saying that a mammogram involves less radiation exposure than a dental x-ray does NOT make it safe. Plus, there are two very important considerations that are usually ignored by sources claiming mammography to be safe: 1) The first ignored issue is that, next to fetal tissue, breast tissue is the most radiosensitive tissue in the body. In other words, for any adult, their breast tissue is the one part of their body that is most easily damaged by ionizing radiation. 2) The second ignored issue is that chest x-rays and dental x-rays are not usually recommended on a yearly basis -- whereas mammograms ARE often recommended annually for women over a certain age.

The damaging effects of radiation to the body are known to be cumulative over time. Thus, with women being told to get mammograms annually, one can't just look at whether the amount of radiation per mammogram procedure is safe. One must also look at what

kind of damage might be caused by a build-up of radiation to the breast tissue over a 10 or 20-year period. Many researchers believe that the radiation exposure from mammograms can actually CAUSE breast cancer, just as frequent chest x-rays or frequent dental x-rays may cause cancer of various types. This thesis is hard to prove in studies, but it reflects common sense and what we have known about radiation since the early 1900s. One cancer specialist, Charles B. Simone, M.D., who trained in radiation oncology and worked as an investigator for the National Cancer Institute, stated that “By some estimates one in 10,000 women screened get breast cancer as a result of mammography.” And this is simply an estimate of the *average* risk. For those women who have continue to receive mammograms over many years, the risk of causing breast cancer in themselves is bound to be higher.

2) THE COMPRESSION REASON

Another raging debate is over *how* mammograms are administered. In order to get a clear picture of inner breast tissue, a technician must position the patient’s breast in a vise-like device, then *squeeze* the breast to an almost inhuman degree. Make no mistake, the physical compression is severe. The breast is first compressed in one direction, then for the second angle, it is compressed in another direction. The main concern over this is that some medical experts believe the compression force may rupture any existing cancer cells that are contained in a localized mass, and cause some malignant cells to be released into the woman’s bloodstream, thereby promoting metastatic cancer. For any woman this might happen to, it would be a disaster. A localized tumor that grows over time to where a woman can detect it through self-examination, but stays contained, is much more easily cured than a mass caught earlier but caused to spread throughout the body due to compression.

This is the very reason why doctors are advised to examine breast lumps gently – they don’t want to be rough with them for fear of causing any cancer cells to break off. Also, anecdotal stories indicate that some people appear to develop cancer at the site of severe pressure trauma. For instance, I spoke to one woman was in a car accident and suffered bruising to her breast from her shoulder strap seat belt. Later, she developed a breast tumor in the very area she had been bruised. Another woman I know had a bad fall where her jaw impacted the ground very hard. Later, she developed a mass of non-Hodgkin’s lymphoma cancer right on that spot of her jaw. It would be wrong to assume that all impact injuries will cause cancer, but there is evidence that some may contribute to tumor growth or development. Though there are no definitive studies on this, common sense indicates reason to be wary of subjecting breast tissue to extreme physical compression.

3) THE INEFFECTIVENESS REASON

Last but not least, mammograms are simply *not very good* at what they are supposed to do. They are supposed to be able to detect cancer. They are touted as the BEST early detection test available. One would think that a good early detection test might be at least 80%

accurate. But mammograms are more than 80% INACURATE! First of all, they can't detect cancer at all – never could and never will. They can only “suspect” it. This is because mammograms are only able to detect *dense tissue*. If an area of dense tissue is detected, the mammogram cannot indicate whether that dense tissue is a malignant mass, a benign mass, fibrous tissue, a calcium deposit, or scar tissue. Thus, the woman who gets a “positive” reading on her mammogram must always be sent to an oncologist for follow-up testing to determine if she actually has cancer or not. The main way an oncologist can then determine if she has breast cancer or not is by an invasive surgical procedure such as a needle biopsy.

Now, one might think that the above is all very acceptable -- that is, until one hears the figures. Only about 5% of all mammogram procedures done for screening purposes show up positive results. Out of those 5% positive results, ABOUT 80% ARE FALSE POSITIVES. This means that about 80% of the woman sent to an oncologist for follow-up needle-biopsy find out they don't have cancer at all! Moreover, about 10-15% of all mammograms done for screening purposes produce FALSE NEGATIVE results. (Meaning they don't find anything to suspect as cancer.) Thus, about 1 in every 7 women who get a screening mammogram are told they are “clear” of anything suspicious looking in their breasts while they actually have malignant breast cancer growing inside them that the mammogram they just took didn't see!

One has to wonder if putting so many women through the emotional trauma of receiving a false positive mammogram result is worth it. Not to mention the physical trauma of the needle biopsy they are forced to endure, which may also involve great pain.