## Radiation and breast cancer risks.

With the recent flurry of discussion of radiation risks following the nuclear meltdown in Japan, it seems like an ideal time to review the issue of radiation exposure and the risk of breast cancer. We know from studies of the late-term effects of the atomic bombing of Hiroshima and Nagasaki during WWII that there is a very small increase in risk of developing breast cancer among the population of women exposed to this high dose of radiation.

Given the known association between radiation exposure and the risk of cancer, it is understandable that many women are concerned about the risk of radiation exposure associated with their yearly mammograms. There are two basic issues in determining such risks. The first is the issue of dose of radiation. The actual dose of radiation associated with mammography is very low. The total lifetime dose for women who start having yearly mammograms at age forty and repeat it every year is so low that the risks of it causing a breast cancer are almost negligible. However, there are major, potentially lifesaving benefits associated with yearly mammography starting at age 40 years. Thus, the benefits far outweigh the risks for the over 40 year population.

The second issue is age. Women under 20 years are at greatest risk for radiation induced breast cancers. After age 30, the risk of radiation induced breast cancer drops significantly and by age 40 years is so small that it can be considered to be insignificant.

The issue of radiation in younger women is a very important one that usually does not receive the attention it deserves. For example, women who have had chest wall radiation for the treatment of Hodgkin's disease are at significantly higher risk for breast cancer. This risk is highest for women who received treatment before the age of 20 years. The risks also apply to women who were radiated as children or young adults for other malignant or benign conditions such as thymomas or enlarged tonsils.

Another group of women who are at increased risk for developing breast cancer are woman who were treated for scoliosis as children or young adults. Many of these scoliosis patients had multiple chest X- rays around the time of puberty, at which time the developing breast is most vulnerable to the kind of radiation damage that leads to increased breast cancer risk.

Women who have had radiation exposure before the age of 30 should be aware of their high-risk status and inform their physicians. These women should consider being followed at a high risk clinic where a more comprehensive assessment can be made of their individual risks. High-risk women should be aware of specific steps to both reduce their risks for getting breast cancer, and to take steps to insure that if breast cancer is in their future, that it is identified at an early stage. One of the most successful early detection technologies is the MRI.

I hope you have found this review to be helpful. If you have any questions, you can Ask The Doctor your question, or you can contact us.