

## Breast Cancer Following Treatment for Childhood Cancer: Are You at Risk?

You have successfully been treated for cancer during childhood or adolescence and are now moving forward with your life—so the last thing you want to be reminded about is the risk of developing another cancer during adulthood. For a variety of reasons, the risk of cancer increases for everyone as they age. Depending on the specific treatment you received for childhood cancer, you may be at increased risk for developing breast cancer. It is important to understand that risk, so that you can take steps to protect your health.

### What are the risk factors?

Several studies have shown that **women treated with radiation to the chest for cancer during childhood, adolescence, or young adulthood** have an increased risk of developing breast cancer as they get older, compared to women their same age in the general population. The risk of secondary breast cancer is **related to the dose of radiation**. People treated with higher doses of radiation have the highest risk. Researchers are studying this problem to better understand the risk factors and find ways to prevent secondary breast cancer.

There are other **known risk factors** for developing breast cancer that apply to all women, not just those who have received radiation to the chest.

These additional risk factors include:

- Early menstruation (before the age of 12)
- Late menopause (after age 55)
- Never having a baby or having a first baby after the age of 30
- Having a close relative with breast cancer
- Being overweight
- Having an inactive (sedentary) lifestyle (not getting regular exercise)

Other possible risk factors associated with developing breast cancer include:

- High fat diet
- Drinking too much alcohol
- Never breastfeeding
- Smoking
- Birth control pills
- Hormone replacement therapy taken for long periods of time

### When is breast cancer likely to occur?

The risk of secondary breast cancer begins to increase between five and nine years following radiation therapy and continues to rise thereafter. This means that if a woman develops breast cancer following chest radiation for childhood/adolescent cancer, it usually happens at a much younger age (usually 30 to 40 years old) than in women who develop primary breast cancer (usually age 50 or older).

### What can I do to protect my health?

Most women who received radiation therapy to the chest during childhood, adolescence, or young adulthood will **NOT** develop breast cancer. However, if you received radiation to the chest, it's important to understand that the risk is higher for you than it is for women your age who never received radiation. So, the best way for you to protect your health is by taking steps to closely monitor your breasts. That way, if a cancer develops, it will be detected in its earliest stages, when treatment is most effective. It is also important to tell your healthcare provider about your cancer treatment history, including the dose of chest radiation that you received. You should arrange for your healthcare provider to obtain a written summary of your cancer treatment (see related Health Link: "Introduction to Long-Term Follow-Up").

### What monitoring is recommended?

If you received radiation therapy to the chest at a dose of 20 Gy (2000 cGy/rads) or higher\* during childhood, adolescence, or young adulthood, you should:

1. Perform monthly breast self-examination. Report any lumps or changes to your healthcare provider right away.
2. Have a clinical breast exam performed by your healthcare provider—at least once a year until you reach age 25—then every 6 months thereafter.
3. Have a yearly mammogram and breast MRI (magnetic resonance imaging test) starting at age 25 or 8 years after you received radiation (whichever comes last).

\*Note: If you received total body irradiation (TBI), your TBI dose should be added to this total.

*If your healthcare provider is not familiar with these monitoring recommendations for women who have received chest radiation during childhood, adolescence, or young adulthood, we encourage you to share this Health Link with them, and tell them that additional information is also available at [www.survivorshipguidelines.org](http://www.survivorshipguidelines.org).*

### What if I had a lower dose of radiation to the chest (or had total body irradiation)?

For those treated with lower doses of radiation therapy to the chest (less than 20 Gy or 2000 cGy/rads), or for those who had total body radiation (TBI), there still may be an increased risk, but the risk is lower compared with those who received 20 Gy or more of radiation. If you received chest radiation at a dose below 20 Gy, or if you received TBI, you should ask your healthcare provider if breast cancer screening should be started earlier for you than for people who never had radiation.

### Is there anything else I can do to minimize the risk?

The following lifestyle changes may help reduce the risk of developing breast cancer, and will also help you to stay as healthy as possible:

- Eat more fruits and vegetables (at least 5 servings a day are recommended).
- Exercise at least 30 minutes per day on most days of the week.
- If you are overweight, lose excess weight.
- Limit your intake of alcohol to no more than one drink per day.
- If you smoke, quit.
- If you have a baby, try to breastfeed for at least four months.
- If you need hormone replacement therapy or birth control pills, discuss the risks and benefits with your healthcare professional.

- Limit your exposure to potentially harmful chemicals and pesticides. Use protective equipment if you are exposed to chemicals in your workplace.

If you have questions regarding your risk of developing breast cancer, and how you can best protect your health, be sure to discuss this with your healthcare provider.

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Additional health information for childhood cancer survivors is available at  
[www.survivorshipguidelines.org](http://www.survivorshipguidelines.org)

**Note:** Throughout this *Health Links* series, the term “childhood cancer” is used to designate pediatric cancers that may occur during childhood, adolescence, or young adulthood. Health Links are designed to provide health information for survivors of pediatric cancer, regardless of whether the cancer occurred during childhood, adolescence, or young adulthood.

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