



Center for Integrative Oncology and Survivorship

Future/Chronic Side Effects of Breast Cancer Treatment

There may be late (future) or chronic (persistent or long-term) risks from the treatment that you received. Many of these are very rare, and we do not recommend routine monitoring unless indicated below. Based on your history, possible chronic or future side effects include ...

Surgery

Serious chronic or late effects from surgery are rare. Lymphedema most often occurs in women who have a full axillary node dissection and radiation (the risk is around 25% for this group). Lymphedema may start 6 to 8 weeks after surgery or after radiation. Or it can start very slowly after your cancer treatment is completed. You may not notice symptoms until 18 to 24 months after treatment. Sometimes it can take years to develop.

If you think you are experiencing problems with swelling at the site of your surgery, please notify your healthcare provider. A referral can be made for evaluation and treatment by the physical therapist who is lymphedema certified. At GHS Cancer Institute, we also offer lymphedema classes for preventive education.

Women also may notice discomfort or unusual sensation in the breast or chest wall after surgery. A Danish study suggested that this reaction is fairly common, especially in women who have had axillary lymph node dissections (ALND) or radiation (Gartner et al., JAMA, 2011).

If you are bothered by these sensations, please discuss them with your breast cancer care team. We can help you determine whether these symptoms are of concern and may be able to suggest tips for managing bothersome symptoms.

Chemotherapy

General side effects, regardless of drug given:

Women who are PRE-menopausal before chemotherapy can become POST-menopausal (and thus infertile) as a result of chemotherapy. This effect is more likely to occur the closer a woman is to 50. Women already POST-menopausal before chemotherapy are not affected this way.

Generally, most of the immediate side effects of chemotherapy (nausea, low blood counts) improve fairly quickly after the treatment stops. Fatigue (low energy) may take somewhat longer to resolve, especially if you receive

radiation or surgery after chemotherapy. Exercise can be very beneficial in improving problems with fatigue.

Doxirubicin (Adriamycin)

Some patients will develop weakness of the heart muscle (heart failure) because of taking this medication. Generally, this is not reversible, although medications can be used to improve heart function. Symptoms (shortness of breath, irregular heartbeat, or swelling of feet or ankles) are indications that this medication may be having an adverse effect. Symptoms also may appear after treatment has ended (sometimes many years later). If this occurs, alert your healthcare providers as these may be signs of injury to your heart. Note: We usually do not conduct routine monitoring of your heart function after you have received all of the medication cycles.

The risk of problems with the heart is related to the total lifetime dose of this drug, with a dose of 400 mg/m² being considered the upper limit of what is safe.

Very rarely, patients will develop a second cancer because of receiving this drug. This is generally a kind of pre-leukemia, myelodysplastic syndrome (MDS) that can evolve into an acute myelogenous leukemia (AML). Because we do not know how to prevent this and because it is very rare, we do not recommend any special labs to monitor for this development. Some symptoms include fatigue, very easy bruising or bleeding and infection. If you experience one of these symptoms, you should alert your healthcare providers.

Cyclophosphamide (Cytosan)

Chronic or late side effects as a result of cyclophosphamide are very rare with the dose used to treat breast cancer.

Paclitaxel (Taxol) or Docetaxel (Taxotere)

Some patients will develop persistent numbness, tingling or pain generally in the hands and feet. This condition is called neuropathy. Symptoms usually will occur during or shortly after you have received these drugs; they may not go away completely.

You should discuss these symptoms with your medical oncologist if they trouble you. There are medications that can help as well as treatments provided by the physical therapist that may ease the problem.

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Trastuzumab (Herceptin)

Some patients develop weakness of the heart muscle because of this medication. Generally, this effect is reversible. You will receive regular monitoring while you are receiving the drug to detect any problems developing. Typically, monitoring of your heart function after you have completed therapy is not necessary.

The long-term consequences of having received this drug still are being studied.

Carboplatin

The long-term side effects of this drug when used to treat women with breast cancer still are being studied. However, a study in men with testicular cancer (Powles et al., The long-term risks of adjuvant carboplatin treatment for stage I seminoma of the testis, *Annals of Oncology* 2007) does not suggest a long-term risk of second cancers from the drug.

Radiation

Radiation to the armpit can increase the risk of lymphedema. Your healthcare team will assess your condition at visits.

Some women experience permanent skin color changes or changes in size or notice that the radiated breast has become firmer than the other side. Your healthcare team will assess your condition at visits.

Serious long-term side effects from radiation include the following:

- The ribs on the treated side can become more fragile over time (5-20 years). You should follow the bone health guidelines that your healthcare team develops for you.
- There is a very small risk (less than 1%) of lung irritation and scarring. This effect generally shows up as a dry cough and increased shortness of breath. Your healthcare team will assess your condition at visits.
- Radiation to the left breast may lead to some parts of the heart being radiated. It is not completely clear whether this result will cause any increased problems in the long term with a kind of heart disease known as coronary artery disease.
- Very rarely, a woman will develop a kind of cancer known as a sarcoma because of receiving radiation. Your healthcare team will assess your condition at visits.

Endocrine Therapy

Women receiving endocrine therapy (sometimes known as hormonal therapy) may be at risk for certain serious problems.

Tamoxifen

Tamoxifen slightly increases the risk for developing uterine cancer (also known as endometrial cancer). This issue is more of a concern in post-menopausal women. Because of this risk,

you should have an annual gynecologic exam as long as you have an intact uterus and are taking tamoxifen. You should report any vaginal bleeding or spotting that seems different from a normal, regular period.

Tamoxifen also slightly increases the risk of developing a blood clot, such as a pulmonary embolism (a blood clot that travels to the lung) or a deep vein thrombosis (a blood clot in a large vein in the leg). Please discuss the symptoms of a blood clot with your healthcare team and what you should do if you develop these symptoms. To lessen this risk, you should not smoke cigarettes.

The following medications may affect the body's metabolism of tamoxifen. You may wish to review these with your doctor:

- Cymbalta (duloxetine)
- Paxil (paroxetine)
- Prozac (fluoxetine)
- Wellbutrin (bupropion)

Aromatase inhibitors (anastrozole [Arimidex], letrozole [Femara], exemestane [Aromasin])

Aromatase inhibitors (AI) increase the risk of developing low bone density or osteoporosis. These complications raise the risk for fractures. Your bone density should be monitored periodically. Monitoring typically is done with a test called a DEXA scan.

Women on an AI also should make sure that they get at least 1200 mg/day of calcium and 800 IU/day of vitamin D. It is preferred that your calcium intake come from your diet versus supplements. Vitamin D is harder to find in foods, so it can be received through dietary sources or supplements. We can provide a list of foods rich in calcium and vitamin D.

Regular weight bearing exercise is recommended.

It may be helpful to check your vitamin D level. Normal range is 30-74 ng/ML.

You may be given a medication to help slow bone loss if the DEXA shows that you already have or are developing significant bone loss.

Importance of Taking Endocrine Therapy

Studies suggest that many women do not take their tamoxifen or AI as often as they should. If you regularly are missing doses more than 3 days/month, you may be increasing your risk of recurrence.

Reasons why women do not take their medication include the following:

- Side effects
- Cost
- Forgetfulness

We may be able to help. Please discuss these problems with your healthcare team.