Removing a woman’s breasts by surgery to lower her risk of breast cancer is called a “risk-reducing mastectomy.” You may also see it called a “prophylactic mastectomy.” In the general population, nearly one out of eight (12.5 percent) women who live to be 90 years old will develop breast cancer.\(^{(1)}\) Although this number may sound high, it also means that seven out of eight (87.5 percent) of women who live to age 90 won’t get breast cancer. Most women do not have a high enough risk of this disease to justify risk-reducing surgery. Even women with a very high risk of breast cancer do not always choose risk-reducing mastectomy.

Other options for preventing breast cancer or for finding it at an early, more curable stage include lifestyle changes, surveillance, and chemoprevention. These topics are covered in more detail in “Lifestyle Changes to Reduce Risk of Breast and Ovarian Cancer,” “Breast and Ovarian Cancer: Screening and Detection,” and “Breast Cancer Chemoprevention.”

Risk-reducing mastectomy may be reasonable to consider if:

- Several of your close relatives (sister, mother, grandmother, aunt) had breast cancer before age 50, or ovarian cancer at any age.

- You have a harmful change, called a mutation, in a cancer-predisposing gene such as BRCA1 or BRCA2.
If you have been diagnosed with lobular carcinoma in situ (LCIS), your doctor may suggest a risk-reducing mastectomy. However, this surgery is not the standard treatment for LCIS. Although risk-reducing mastectomy may be considered in special cases, care of LCIS usually involves having mammograms and breast exams by a qualified healthcare provider more often, and possibly chemoprevention.

**Risk-Reducing Mastectomy**

There are several kinds of tissue in the breast, but most breast cancer starts in the milk ducts. The goal of a risk-reducing mastectomy is to remove as much of this milk duct tissue as possible. The most common surgery for a risk-reducing mastectomy is a simple (complete) mastectomy. The entire breast, including the nipple, is removed. In a subcutaneous (nipple sparing) mastectomy, the nipple is not removed. This can also be done for a risk-reducing mastectomy, but leaving the nipple and its associated milk duct tissue might not be as successful at preventing breast cancer.

Unfortunately, having a risk-reducing mastectomy does not guarantee that a woman will not get breast cancer. It’s impossible to remove all the milk duct tissue, even with a complete mastectomy. Milk ducts attach to the skin in many tiny places, and these attachment sites can’t be removed unless the skin is removed. Cancer may still occur in these attachment sites. However, recent studies show that risk-reducing mastectomy lowers breast cancer risk by about 90 percent in women whose risk is high, and a similar proportion of breast cancer deaths are prevented.\(^1\) Risk-reducing mastectomy is the most effective way to lower the risk of breast cancer.

If you are thinking about having a mastectomy because you believe you have a high risk of breast cancer, answers to these questions may be helpful:

**What is my actual risk of developing breast cancer?**

Studies show that most women believe their risk of breast cancer is much higher than it actually is.\(^2\) Having a family history of breast or ovarian cancer may increase your risk, as can certain personal factors. Specialists at the Cancer Genetics Clinic at University of Washington Medical Center, or at the Breast and Ovarian Cancer Prevention Program at the Seattle Cancer Care Alliance can help you understand your actual risk.

**What are the other ways I can prevent breast cancer or find it early?**

Your other options include lifestyle changes, surveillance, and chemoprevention. These topics are covered in more detail in “Lifestyle Changes to Reduce Risk of Breast and Ovarian Cancer,” “Breast and...
Breast and Ovarian Cancer Prevention Program
Surgery to Lower the Risk of Breast Cancer

Ovarian Cancer: Screening and Detection,” and “Breast Cancer Chemoprevention.” These other options may not suit you. For example, talk with your doctor about how easily your breasts can be checked with mammograms and physical exams. Cancers are more likely to remain hidden to a later stage in dense breasts, breasts with several calcifications, or other features that make mammograms difficult to interpret.

What are the risks of having a mastectomy?
Overall, a risk-reducing mastectomy is considered a low-risk surgery. As with any surgery, the risks of a mastectomy include an infection developing in the surgical wounds, heavy bleeding (but only rarely leading to a transfusion), problems with anesthesia, fluid collecting underneath the wounds, and scar formation. There may be areas of soreness or numbness on the chest and inner arm, but this usually fades over a period of months. But unlike a mastectomy for treating cancer, a risk-reducing mastectomy does not cause loss of strength, since chest muscles are not removed. And it does not lead to swelling of the arms, because lymph nodes are not removed. A breast surgeon can help you better understand your risks.

What effect will it have on my self-esteem and my sexuality?
Many cultural messages imply that large breasts are more feminine and sexually attractive. Women who have had mastectomies often go through emotional changes after their surgery. Having a mastectomy is a loss, and women mourn their loss in different ways. Overweight women who carry extra weight across their shoulder blades may not be happy with how they look and feel afterwards. Try to discuss this issue openly with your husband or partner, to figure out how this surgery will affect them.

What about breast reconstruction?
There are many options for reconstruction to choose from before having a mastectomy. These include doing nothing, wearing breast prostheses (worn inside a special bra or attached to the chest wall), or having a surgical breast reconstruction. Breast reconstruction does not create a new, normally working breast. Instead, the goal is to create breast form with a shape and texture that you want.

Some women find that a surgical breast reconstruction improves their body image and self-esteem, and they feel more comfortable wearing low-neck clothing. Some disadvantages include those of a second surgery (pain, recovery time, time away from work for doctor’s appointments, cost, possible complications). Also, some ways of doing reconstructive surgery lead to weak abdominal muscles. Women who
smoke and women with obesity or high blood pressure face other risks from breast reconstruction.

If you decided to have a surgical breast reconstruction, you would have more choices to make, such as whether to use an implant made of artificial material or use your own tissue, moved from another part of your body. You would also need to choose whether to have a reconstruction immediately after the mastectomy, or to wait. Talking about these choices with a plastic surgeon who specializes in breast reconstruction may help you with these decisions. Many women find that seeing “before” and “after” pictures is also very helpful.

*When is the best time for a risk-reducing mastectomy?*

If you are at high risk and wish to breastfeed your children, you may want to delay risk-reducing mastectomy until your family is complete. Discuss with your healthcare providers the benefits of breastfeeding verses your short-term risk of getting breast cancer. You may decide your risk of developing breast cancer in the near future is too high to wait. Most importantly, wait until you are completely sure that risk-reducing surgery is the right choice for you. Some women do not initially think a risk-reducing mastectomy is the right choice for them, but find that they still worry too much about their breast cancer risk, even when they do regular screening.

*Conclusion*

Risk-reducing surgery is permanent. It is worth careful, unhurried consideration after you have discussed your risks and options with your healthcare providers. Once you have answers to the questions listed above, it will be easier to decide if and when risk-reducing mastectomy is right for you. It is a very personal decision, and no one answer is right for every woman.

*Glossary*

**Calcifications** – Calcium deposits that show as grouped tiny white dots in breast X-rays.

**Mammogram** – a low-dose X-ray of the breast, used to screen for and diagnose cancer.

**Mutation** – a harmful change in a person’s DNA, the chemical that genes are made of.
Questions?

Call 206-616-5241

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC Clinic staff are also available to help at any time.

Breast and Ovarian Cancer Prevention Program
206-616-5241

To Learn More

Breast and Ovarian Cancer Prevention Program
Seattle Cancer Care Alliance: 206-616-5241

Cancer Genetics Clinic
University of Washington Medical Center: 206-616-2135

Breast Health Center
University of Washington Medical Center-Roosevelt: 206-598-5500

Seattle Cancer Care Alliance: 206-288-1024; www.seattlecca.org

Y-Me National Breast Cancer Organization: 312-986-8338 or 800-221-2141; www.y-me.org

National Breast Cancer Coalition: 202-296-7477 or 800-622-2868; www.natlbcc.org

The Susan G. Komen Breast Cancer Foundation: 972-855-1600; www.komen.org

FORCE (Facing Our Risk of Cancer Empowered): 954-255-8732; www.facingourrisk.org

Young Survival Coalition: 212-206-6610; www.youngsurvival.org

References

