



Surgery to Reduce Risk of Breast or Ovarian Cancer

If you feel you are at high risk of breast or ovarian cancer, you may have wondered if you should consider preventive surgery. The first thing to know about such surgery is that it is not urgent.

Even if your lifetime risk is high, your immediate risk is low. You have time to consider the advantages and disadvantages risk reduction surgery might have for you, and time to consider alternative methods of prevention.

For most women, surgery to reduce the risk of breast or ovarian cancer would not be appropriate because only a small fraction of women in the United States has a high enough risk for these diseases to benefit from surgery.

Your options for preventing breast cancer and for catching it at an early, more curable stage also include lifestyle changes, surveillance, and taking tamoxifen (chemoprevention):

- Positive **lifestyle** factors linked with lower risk of breast cancer include limited use of alcohol, a diet low in fat and high in fiber and antioxidants, regular exercise, and maintaining a healthy body weight. These lifestyle choices are good for almost anyone, and they may make a significant difference in breast cancer risk.
- **Surveillance** is careful monitoring to detect cancer early, and includes monthly breast self-exams, regular mammograms, and examinations by a trained professional.
- For women at high lifetime risk, **tamoxifen** can prevent or delay the appearance of breast cancer, but it also has side effects that can outweigh its benefits for some women. (See handout on “Breast Cancer Chemoprevention.”)

Preventive Mastectomy

Removal of one or both breasts by surgery to reduce the risk of breast cancer is called preventive or prophylactic mastectomy. The aim of this surgery is to remove as much of the tissue at risk as possible. In a total mastectomy, the entire breast including the nipple is removed. This is the most common surgery for prophylactic mastectomy. Subcutaneous mastectomy, which spares the nipple, is also sometimes performed, but there may be concerns about leaving the nipple and associated breast duct tissue.

Even a "total" mastectomy cannot remove all breast tissue, and cancer can still occur in the tissue remaining after this surgery. However, recent data shows that prophylactic mastectomy reduces breast cancer risk by about 90% in women whose risk is high, and a similar proportion of breast cancer deaths is prevented.

Women who have a high risk of breast cancer may include those who have a family history with several close relatives who had breast cancer before age 50, or who have a known alteration in a cancer-predisposing gene such as BRCA 1 or BRCA 2. Women with alterations in these genes may have a lifetime risk of breast cancer of 50% to 85%. Genetic counseling is recommended for those who feel they may have a family history. Women who have had lobular carcinoma in situ may also be at high risk.

It is important to discuss with your radiologist and your surgeon how easily your breasts can be surveyed with mammography and a physical exam. Breast cancer is most easily detected at an early stage when breast tissue is not dense and mammograms are easy to read. Cancers are more likely to remain hidden to a later stage in dense or lumpy breasts, or breasts with calcifications or other features which make mammograms difficult to interpret.

If you are at high risk and wish to have children and breastfeed, you may wish to delay a decision about preventive mastectomy until your family is complete. Even if you decide to have this surgery, it is probably safe to have it after pregnancy and nursing.

If you are considering a mastectomy to reduce your chances of breast cancer, you need to learn about your actual risk with professional assistance. You should also learn about the risks and consequences of the surgical procedure, psychological effects, options for breast reconstruction, and other prevention alternatives. With this knowledge, and knowing your own feelings, you can decide whether and when preventive mastectomy might be right for you.

Preventive Oophorectomy

Ovarian cancer is a rare disease, occurring in about 1 woman in 50 (2%). Some women with a family history of ovarian cancer, for example women who have alterations in the BRCA 1 or BRCA 2 gene, have a higher risk: 15% to 40% for the BRCA 1 and about 20% to 30% for the BRCA 2 alteration. Their risk is highest after the age of 45, although cancers can occur at a younger age. Current surveillance methods for ovarian cancer include pelvic ultrasound, CA-125 blood testing, and pelvic exams. It is an unfortunate fact that today's screening methods cannot be counted on to catch ovarian cancer at an early stage.

If your risk of ovarian cancer is high, you are over 35, **and you have completed your family**, you may wish to have your ovaries removed to reduce risk of ovarian cancer. This surgery is called preventive or prophylactic oophorectomy or ovariectomy. It may reduce risk of ovarian cancer by about 45%. By reducing estrogen levels, it may reduce risk of breast cancer as well – by as much as 50% in women who carry a gene mutation. Unfortunately, some women who are at high risk of ovarian cancer are still at risk of an abdominal cancer similar to ovarian cancer (called peritoneal carcinoma) even after having their ovaries removed.

Preventive oophorectomy can be done in several ways. The organs removed can include the fallopian tubes and uterus as well as the ovaries. They can be removed through the wall of the abdomen, or through the vagina, and laparoscopic techniques, in which instruments are inserted through a small incision near the navel, may also be used. You can discuss possible options with your physician or surgeon.

Prophylactic surgery which removes the ovaries causes immediate menopause and menopausal symptoms. Symptoms of menopause can include hot flashes, insomnia, mood swings, vaginal dryness, and increased risk of osteoporosis and heart disease due to reduced estrogen levels. Taking estrogen can reduce many of these symptoms, but estrogen may increase risk of breast cancer slightly, and is controversial in women who have had breast cancer or are at high risk. There are many non-hormonal methods for dealing with menopause. (See handout on “Menopause without Hormones.”)

Questions?

Your questions are important. Ask your provider which set of numbers below should be used so you can reach your health care provider if you have questions or concerns.

Seattle Cancer Care Alliance (SCCA)
Call: 206-288-1000

Martha Rivkin Center for Ovarian Cancer Research
Call: 206-215-6200 or 800-328-1124

To schedule an appointment in the high-risk clinic at the SCCA
Call: 206-288-2166

UNIVERSITY OF WASHINGTON
MEDICAL CENTER
UW Medicine



Cancer Center

Box 356043

1959 N.E. Pacific St. Seattle, WA 98195
206-598-4100

Summary

Preventive surgery is permanent. It merits careful, unhurried consideration after you have discussed your risks and options with your medical professionals. When you know your actual risk of breast and/or ovarian cancer and your options for lowering your risk, their likely benefits to you and their possible drawbacks, you will have the information you need to carefully decide what methods of risk reduction are right for you.

Glossary

Antioxidant – A chemical that reduces oxidation. Some antioxidants are believed to reduce cancer risk.

Calcifications – Calcium deposits which show as dense spots in breast X-rays.

Estrogen – A hormone important in female reproduction. In excess, it may increase risk of breast cancer.

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

Mastectomy – Surgical removal of the breast.

Menopause – The time in a woman's life when menstrual periods stop. It typically occurs at about 50 years of age.

Oophorectomy (ovariectomy) – Surgical removal of one or both ovaries.

Ovary – The part of the body that produces eggs and much of the body's estrogen.

Radiologist – A specialist in the use and reading of X-rays, including mammograms.

To Learn More

More information is available at the UW Breast Care and Cancer Research Center Web site: <http://www.uwbreastcare.org>.

Seattle Cancer Care Alliance is a collaboration of Fred Hutchinson Cancer Research Center, UW Medicine, and Seattle Children's