

Risk Factors for Ovarian Cancer

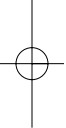
An Informational Guide

*Cancer Risk
Evaluation
Program*

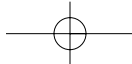
University of Pennsylvania

CANCER CENTER
University of Pennsylvania Medical Center





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Introduction

This booklet provides information about risk factors for developing ovarian cancer.

Throughout the booklet, words that might be new to you are shown in italics. Definitions for these and other terms related to ovarian cancer are listed on page 6. Other resources about ovarian cancer, its treatment and living with ovarian cancer in your family are listed on page 4.

Background

We currently know of more than 100 types of *cancer* arising from many different types of cells. All cancers have one thing in common: cells that grow abnormally and destroy body tissue. Ovarian cancer is a disease of abnormal cell growth arising from the cells of the ovary, leading to *tumor* formation. Ovarian cancer is the sixth most common form of cancer in women and the most common cause of gynecologic cancer deaths among women in the United States.

A number of hereditary and environmental factors are thought to contribute to ovarian cancer development. However, the causes of ovarian cancer are not completely understood.

Risk Factors for Ovarian Cancer

Many factors may contribute to a woman's risk of developing ovarian cancer. Known risk factors include:

Age

Risk for ovarian cancer increases with age. Most women with ovarian cancer are over age 40. Ovarian cancer risk increases until it peaks between ages 65 and 75, and then begins to decline. In the general population, the risk of developing ovarian cancer is 1 in 70, or 1.4%, by age 80.

Family History

The risk of developing ovarian cancer is increased among women whose close relatives have developed ovarian cancer. This risk is strongest if the ovarian cancer has occurred in multiple close relatives, such as a mother and/or sister. The occurrence of families with more than one woman affected with ovarian cancer suggests these cancers may be *inherited*. However, it is important to note that less than 10% of women with ovarian cancer have a significant family history.

A family history of breast cancer also may be related to an increased risk for developing ovarian cancer. This is because there are some genetic alterations that increase the risk of both breast and ovarian cancer. *BRCA1* and *BRCA2* are the first cancer susceptibility genes isolated that, when altered, have been found to place members of a family at increased risk for developing ovarian cancer. Alterations in *BRCA1* and *BRCA2* may be passed from parents to their children.

Reproductive Risk Factors

A slightly increased risk for ovarian cancer also has been observed in women who have never had children. Women who have had multiple full-term pregnancies are at a lower risk of ovarian cancer than women who have had only one child.

Women with a history of infertility have an increased risk for ovarian cancer. This risk is increased for women who have taken infertility drugs. However, the risk is not as great in women who have used infertility drugs and carried a pregnancy full term.

Dietary Fat

Several large studies have investigated the role of dietary fat as a risk factor for ovarian cancer. Currently, there is not enough information to conclusively link a diet high in fat with increased risk for ovarian cancer. The ability of a very low-fat diet to lower ovarian cancer risk has not yet been adequately assessed. However, limiting dietary fat consumption may be helpful for other reasons. A high-fat and low-fiber diet has been conclusively linked to an increased risk for colon cancer. A high-fat diet also may increase your risk for heart disease.

Talc

The use of talcum powder on the *perineum* may be associated with a small increased risk for ovarian cancer. That is because, until recently, most commercial talcum powders contained asbestos. The exact mechanism by which talc exerts an effect is not understood. Talc placed on the perineum may have access to the ovaries by way of the vagina, cervix, uterus and fallopian tubes. Talc particles have been found embedded in ovarian tissue.

Ovarian Cancer Risk Reduction

Birth Control Pill Use

Birth control pills are among the most extensively researched of all risk-reduction strategies for ovarian cancer. Most studies show that the risk of ovarian cancer can be reduced by the use of birth control pills. The longer a woman uses birth control pills, the lower her risk is for ovarian cancer. This decrease in risk will persist up to 10-15 years after the use of birth control pills is stopped. However, some studies suggest that prolonged birth control pill use (more than eight years) starting at a young age, or prior to first pregnancy, may be associated with a small increased risk for breast cancer. Researchers are continuing to monitor the rate of ovarian and breast cancer in women who use birth control pills.

Prophylactic Surgery

Prophylactic *oophorectomy* is the surgical removal of both ovaries to reduce the risk of developing ovarian cancer. It is important to note that, while prophylactic surgery probably reduces the risk of developing ovarian cancer, it does not eliminate the risk completely. It is estimated that between 5% and 15% of women at high risk for ovarian cancer based on their family history get a cancer in the abdomen that looks like ovarian cancer even after having their ovaries removed. This may occur more than 10 years after oophorectomy. The risk for ovarian cancer after prophylactic oophorectomy is probably highest for women who have an alteration in BRCA1, a cancer predisposition gene.

Women who undergo prophylactic oophorectomy may consider taking *estrogen* replacement therapy. The benefits of estrogen replacement therapy include a significant reduction in the risk for

heart disease and substantial protection against osteoporosis, a condition in which the bones become weakened and brittle. Women who take estrogen replacement therapy also have relief from hot flashes that often accompany menopause. However, estrogen replacement therapy may slightly increase a woman's risk for breast cancer. Each woman must therefore weigh the substantial benefits of estrogen against the small increased risk of breast cancer.

Breast Feeding

Women who breast feed their children have a slightly lower risk of developing ovarian cancer than those who bottle feed their children. The longer a woman breast feeds, the lower her risk is.

Resources

Many resources are available in the community for the purpose of providing information about ovarian cancer. The following list serves as a guide; more specific resources may be available through a women's health care center or your personal physician.

ORGANIZATIONS

University of Pennsylvania Cancer Center

The University of Pennsylvania Cancer Center is one of only 27 cancer centers in the country approved and designated by the National Cancer Institute as a Comprehensive Cancer Center.

Cancer Risk Evaluation Program

Penn's Cancer Risk Evaluation Program is for individuals who want information about their personal risk for developing ovarian, breast or colorectal cancer. For more information, call 215-898-0247.

Toll-free Information Service: 1-800-383-UPCC

The University of Pennsylvania Cancer Center provides the latest information about cancer — quickly and easily — through a single phone call. Call to ask questions about cancer and request free brochures. You also can get information about other resources and additional publications through this service.

OncoLink®

OncoLink is the University of Pennsylvania Cancer Center's multimedia resource on the Internet. You can access OncoLink via a World Wide Web browser at <http://www.oncolink.upenn.edu/>.

American Cancer Society (ACS): 1-800-ACS-2345

The ACS is a national, non-profit organization that supports research and educational efforts, as well as many local support groups.

**The Gilda Radner Familial Ovarian Cancer Registry
Help-Line for High-Risk Women: 1-800-OVARIAN**

Staff from the Gilda Radner Registry will answer questions about ovarian cancer detection, treatment and statistics. They also can provide referrals to gynecologic oncologists nationwide.

PUBLICATIONS

What You Need to Know About Ovarian Cancer. NIH Publication. (Available at no cost through the National Cancer Institute hotline: 1-800-4CANCER.)

BOOKS

It's Always Something. Gilda Radner. Avon Books, 1989.

Glossary

BRCA1: A cancer predisposition gene. Individuals who have an alteration in this gene are at higher risk for developing breast and ovarian cancer.

BRCA2: A cancer predisposition gene. Individuals who have an alteration in this gene are at higher risk for developing breast and ovarian cancer.

Cancer: A term for more than 100 diseases that have in common the uncontrolled, abnormal growth of cells. Cancer cells can spread through the blood stream and lymphatic system to other parts of the body.

Estrogen: A female sex hormone.

Inherited: Genetically transmitted from parent to child.

Oophorectomy: Surgical removal of the ovaries.

Perineum: The area of tissue between the rectum and the vagina.

Tumor: An abnormal mass of tissue that may be malignant (cancerous) or benign (non-cancerous).

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