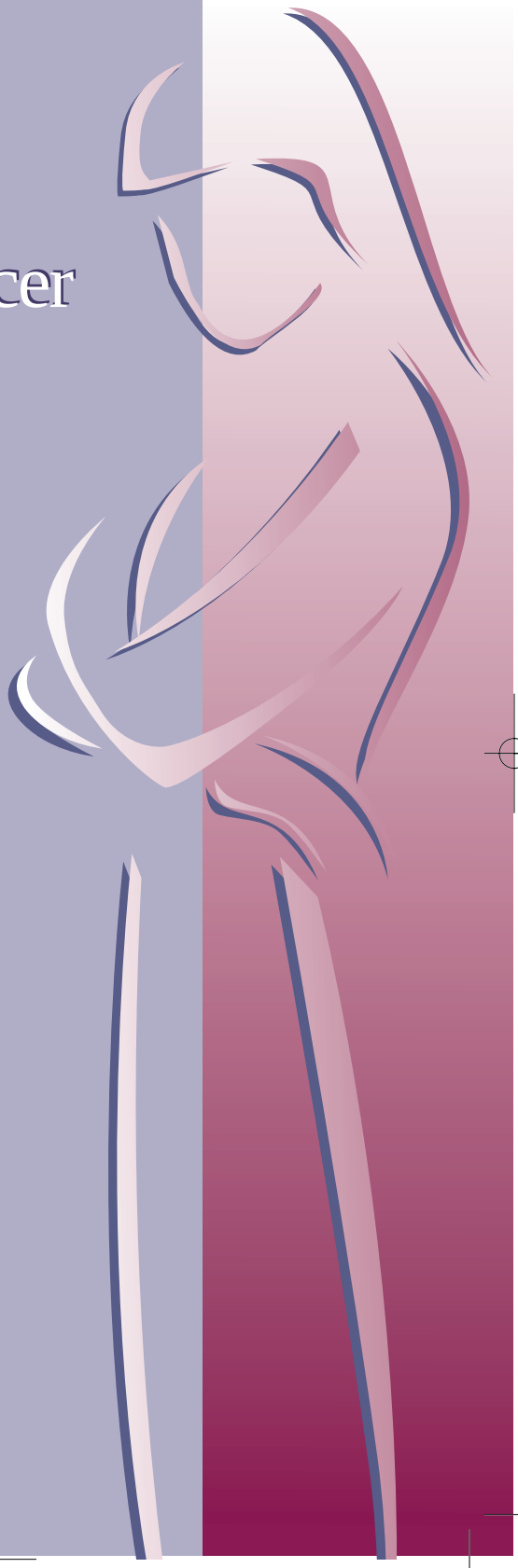
Risk Factors for Breast Cancer



An Informational Guide

Cancer Risk Evaluation Program

University of Pennsylvania
CANCER CENTER
University of Pennsylvania Medical Center

Introduction

This booklet provides you with information about risk factors for developing breast cancer.

Other resources about breast cancer, its treatment, and living with breast cancer in your family are listed on page 4.

Background

We currently know of more than 100 types of cancer, including several types of breast cancer. All cancers have one thing in common: cells that grow abnormally and destroy body tissue. Breast cancer is a disease of abnormal cell growth leading to tumor formation. It is the most commonly diagnosed cancer and the second most common cause of cancer death among women in the United States.

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

Breast Cancer Risk Factors

Many things are known to influence a woman's risk of developing breast cancer. Risk factors include:

Age

Breast cancer risk increases with age. We know from looking at large numbers of women with breast cancer that most are over age 50, and the risk increases as we get older. In the general population, the risk of developing breast cancer by age 30 is less than 1%. The level of risk rises to approximately 11% by age 85.

Family History

Women whose close relatives have developed breast cancer are at higher risk. This risk is strongest if breast cancer has occurred in relatives before menopause and if the relatives are

very close, such as a mother or sister. For example, the lifetime breast cancer risk for a woman whose aunt was diagnosed with breast cancer at age 72 is 11%, while the risk for a woman whose sister was diagnosed with breast cancer at age 34 is 17%.

Between five and 15% of women with breast cancer have a significant family history of the disease. Sometimes, after careful evaluation of family history, it may be suspected that an altered gene, or inherited factor, may be predisposing family members to develop breast cancer. The genes BRCA1 (Breast Cancer 1) and BRCA2 (Breast Cancer 2) are associated with significantly increased breast cancer risks when inherited in an altered form. It is possible to test some women for the presence of these genetic alterations.

Although having several family members with breast cancer suggests that these cancers may be inherited, it is important to remember that breast cancer is a common disease in the United States. An individual may have two or more relatives with breast cancer due to chance alone.

Reproductive Risk Factors

Estrogen stimulates normal growth of breast tissue and is naturally produced by the ovaries. Body fat is another source for the production of estrogen. Because estrogen stimulates the growth of breast cells, it is suspected that excess estrogen may contribute to breast cancer risk. A slightly increased risk has been observed for women who have their first period before age 12 or enter menopause after age 50. Just how these factors contribute to breast cancer risk is not clear, but it is suspected that the more years a woman is exposed to estrogen, the higher her risk will be.

Breasts reach their completely mature state as a result of the increases in hormone levels that accompany pregnancy. The cells that make up breast tissue are not fully developed until they mature and become milk-producing cells. After breast cells enter into the mature state, they may be less vulnerable to environmental and other influences that could contribute to breast

cancer risk. Thus, full-term pregnancy and breast feeding are thought to reduce breast cancer risk.

A slightly increased risk for breast cancer has been observed in women who have never had children and those who had their first child after the age of 30.

Birth Control Pills

Birth control pills are among the most extensively researched of all risk factors for breast cancer. Most studies show very slight or no increased risk. Attempts have been made to classify which women may be most susceptible to an increased breast cancer risk due to birth control pill use. Some studies suggest that prolonged 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, but a decreased risk for ovarian cancer. Researchers are continuing to monitor the rate of breast cancer in women who use birth control pills.

Estrogen (Hormone) Replacement Therapy

Women who have reached menopause often 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 are weakened and brittle. Women who take estrogen replacement therapy also may have relief from hot flashes that often accompany menopause. Estrogen replacement therapy may slightly increase a woman's risk for breast cancer. Each woman must therefore weigh the potentially substantial benefits of estrogen against the small increased risk of breast cancer.

Dietary Fat

Several large studies have investigated the role of dietary fat as a risk factor for breast cancer. Currently, there is not enough information to conclusively link a diet high in fat with increased risk for breast cancer. The ability of a very low-fat diet to lower breast cancer risk has not yet been adequately assessed. A high-fat and low-fiber diet may be linked to an increased risk for

colon cancer. A high-fat diet also may increase your risk for heart disease. Although there is still insufficient evidence to link a high-fat diet with increased risk for breast cancer, limiting dietary fat consumption may be helpful.

Alcohol

The risk for breast cancer related to alcohol consumption appears to be small. However, some women may be more susceptible to the effects of alcohol than others. The exact mechanism by which alcohol exerts an effect is not understood. Alcohol enters the breast tissue and may actually result in direct damage to the genetic material of the breast cells. Alcohol also indirectly increases estrogen levels. Other, more complex mechanisms have been suggested as well.

Resources

Many resources are available in the community for the purpose of providing information about breast 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

Get 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.

Y-ME: 1-800-221-2141
This national organization sponsors a hotline, counseling, educational programs and self-help meetings for breast cancer patients, their families and friends.

PUBLICATIONS

What You Need to Know About Breast Cancer.
NIH Publication No. 91-1556.
(Available at no cost through the National Cancer Institute hotline: 1-800-4CANCER.)

BOOKS

Mary Dan Eades, MD. If It Runs in Your Family: Breast Cancer — Reducing Your Risk. New York: The Philip Lief Group, Inc., 1991.

Nancy C. Baker. Relative Risk: Living With a Family History of Breast Cancer. New York: The Penguin Group, 1991.

http://www.med.upenn.edu/