FACTS FOR LIFE

What is Breast Cancer?

Every day, cells in your body divide, grow and die. Most of the time cells divide and grow in an orderly manner. But sometimes cells grow out of control. This kind of growth of cells forms a mass or lump called a tumor. Tumors are either *benign* or *malignant*.

Benign [bee-NINE] tumors
Benign tumors are not cancerous. The cells of a benign tumor do not invade nearby tissue or spread to other parts of the body. When these tumors are removed, most of the time they do not come back.

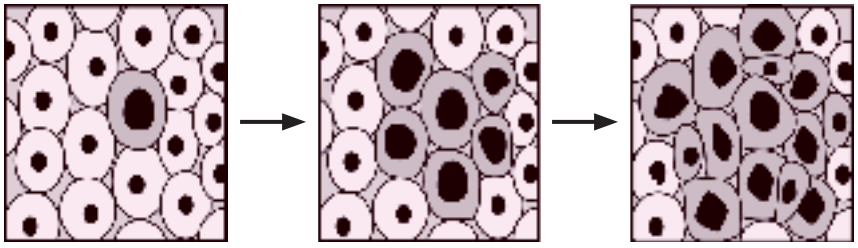
Malignant [ma-LIG-nant] tumors
Malignant tumors are cancerous. These tumor cells can invade nearby tissue and spread to other parts of the body. A malignant tumor that develops in the breast is called breast cancer.

How does breast cancer grow and spread?

To grow, malignant breast tumors need to be fed. They get food by getting new blood vessels in a process called angiogenesis. The new blood vessels supply the tumor with nutrients that promote growth. As the breast tumor grows, it can spread into nearby tissue. This process is called invasion. Cells can also break away from the primary, or main tumor, and spread to other parts of the body. The cells spread by moving through the blood stream and/or lymphatic system. This process is called metastasis. When malignant breast cells appear in a new location, they begin to divide and grow out of control again as they form other tumors. Even though the new tumors are growing in another part of the body, it is still called breast cancer.

Breast cancer growth

The light circles represent normal breast cells. The dark-shaded circles represent cancerous breast cells. As the cancerous cells grow and multiply, they develop into a malignant tumor within the breast.



For more information, visit www.komen.org or call Susan G. Komen®'s breast care helpline at 1-877 GO KOMEN (1-877-465-6636) Monday through Friday, 9 AM to 10 PM EST.

Why does breast cancer grow?

We all have genes that control the way our cells divide and grow. When these genes do not work like they should, a genetic error, or *mutation*, occurs. Mutations may be inherited or spontaneous. Inherited mutations are ones you were born with — an abnormal gene that one of your parents passed on to you. Inherited mutations of specific genes, such as the BRCA1 and BRCA2 genes, increase a person's risk of developing breast cancer as well as other cancers. BRCA1 and BRCA2 are tumor suppressor genes. See below to learn about how these genes should work and what happens when they are mutated. Inherited mutations account for about 5-10 percent of all breast cancer cases in the U.S. Spontaneous mutations occur at anytime during your lifetime and account for about 90-95 percent of all breast cancer cases in the U.S. The actual cause or causes of mutations still remains unknown. Researchers have identified two types of genes that are vital to cell growth. Errors in these genes turn normal cells into cancerous ones. The table below provides a description of each.

Type of gene	How it should work	How it works when mutated
Oncogene	It "turns on," or starts normal cell division and growth.	The gene does not stop cell growth when it should and the cell grows out of control.
Tumor suppressor gene	It "turns off," or stops normal cell division and growth.	The gene does not work and cell growth continues out of control.

But remember...

Cells can grow out of control before any symptoms of the disease appear. That is why breast cancer screening to find early changes is so important. If breast cancer is found early, there are more treatment options and a greater chance of survival. Women 40 years and older should have a mammogram every year. If you have a history of breast cancer in your family, discuss with your doctor your personal risk, including when to start getting mammograms, or other tests, and how often to have them. Women should have a clinical breast exam at least every three years starting at age 20 and every year starting at age 40.

Resources

Susan G. Komen®
1-877 GO KOMEN (1-877-465-6636)
www.komen.org

American Cancer Society
1-800-ACS-2345
www.cancer.org

National Cancer Institute
1-800-4-CANCER
www.cancer.gov

Related fact sheets in this series:

- Ductal Carcinoma in Situ
- Genetics & Breast Cancer
- Types of Breast Cancer Tumors