

## 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. But left untreated, some can pose a health risk, so they are often removed. When these tumors are removed, they typically do not reappear. Most importantly, the cells of a benign tumor do not spread to other parts of the body or invade nearby tissue.

### Malignant [ma-LIG-nant] (cancerous) tumors

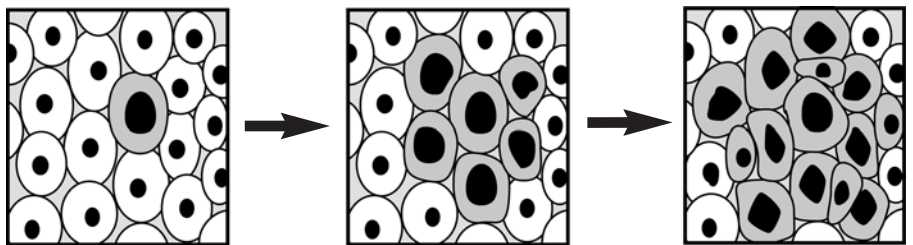
Malignant tumors are made of abnormal cells. Malignant tumor cells can invade nearby tissue and spread to other parts of the body. A malignant tumor that develops in the breast is called breast cancer.

### How does breast cancer grow and spread?

To continue growing, malignant breast tumors need to be fed. They get nourishment by developing new blood vessels in a process called *angiogenesis*. The new blood vessels supply the tumor with nutrients that promote growth. As the malignant breast tumor grows, it can expand 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 traveling through the blood stream and 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 create another tumor. Even though the new tumor is growing in another part of the body, it is still called breast cancer. The most common locations of breast cancer metastases are the lymph nodes, liver, brain, bones and lungs.

### Breast cancer growth

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



## 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*, has occurred. 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 at birth. Inherited mutations of specific genes, such as the BRCA1 and BRCA2 genes, increase a woman's risk of developing breast cancer. Spontaneous mutations occur within your body during your lifetime. The actual cause or causes of mutations still remains unknown. Researchers have identified two types of genes that are important 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 damaged
<b>Oncogene</b>	It “turns on,” or starts normal cell division and growth.	The gene does not stop when it should and cell growth continues out of control.
<b>Tumor suppressor gene</b>	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 may be growing out of control before any symptoms of the disease appear. That is why breast screening to find any early changes is so important. The sooner a problem is found, the better a woman's chances are for survival. Experts recommend that women 40 years and older have a mammogram every year. If you have a history of breast cancer in your family, talk with your doctor about risk assessment, when to start getting mammograms and how often to have them. If your mother or sister had breast cancer before menopause, you may need to start getting mammograms and yearly clinical breast exams before age 40. It is important for all women to have clinical breast exams done by a health care provider at least every 3 years starting at age 20 and every year after age 40 and to do breast self-exams once every month starting by age 20.

## Resources

### **The Susan G. Komen Breast Cancer Foundation**

1-800 I'M AWARE

[www.komen.org](http://www.komen.org)

### **American Cancer Society**

1.800.ACS.2345

[www.cancer.org](http://www.cancer.org)

### **National Cancer Institute**

1.800.4 CANCER

[www.cancer.gov](http://www.cancer.gov)

### Related fact sheets in this series:

- ❖ types of breast cancer
- ❖ genetics & breast cancer
- ❖ ductal carcinoma in situ

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