

# UNDERSTANDING BREAST CANCER

## 8. What does the word “stage” mean in discussions about breast cancer?

To plan for your treatment, your doctor needs to know the extent (stage) of your tumor.

The stage is based on the size of the tumor and whether it has spread to nearby lymph nodes.

Stage	Characteristics
<b>Stage 0</b>	<ul style="list-style-type: none"> <li>• Non-invasive breast cancer, such as DCIS (ductal carcinoma in situ)</li> </ul>
<b>Stage I</b>	<ul style="list-style-type: none"> <li>• An invasive breast tumor measures no more than 2cm, and the cancer has not spread outside the breast or no lymph nodes are involved</li> </ul>
<b>Stage II</b>	<ul style="list-style-type: none"> <li>• An invasive breast tumor size is 2 to 5cm ; cancer has spread to 1 to 3 axillary lymph nodes or to lymph nodes near the breast bone</li> <li>• OR the tumor is larger than 5cm but has not spread to the axillary lymph nodes</li> </ul>
<b>Stage III</b>	<ul style="list-style-type: none"> <li>• An invasive breast tumor is larger than 5cm and has spread to lymph nodes</li> <li>• An invasive breast tumor may be any size and it has spread to the chest wall/the skin of the breast</li> </ul>
<b>Stage IV</b>	<ul style="list-style-type: none"> <li>• In stage IV, an invasive breast tumor has spread to distant organs of the body, which commonly are the lungs, bones, brain, and/or liver</li> </ul>

## 9. How is breast cancer treated?

Surgery, radiation therapy, and chemotherapy are used for treating breast cancer. The most appropriate treatment plan will be suggested by your doctor considering your breast cancer characteristics, receptor expressions, menopause status, comorbidities, health condition, etc.

### 1) Surgery

Breast cancer surgery is performed to remove a breast tumor. Surgery is also used to check the lymph nodes under the arm to determine if the cancer has spread. It will find out the exact stage of the cancer and the prognosis. It will also help to determine which adjuvant therapies you will require.

The two types of breast cancer surgery are breast-conserving surgery and mastectomy. Also, a sentinel lymph node biopsy and an axillary lymph node dissection can be done if needed.

### 2) Radiation therapy

Radiation therapy is treatment using high-energy rays to destroy cancer cells. It is often given after breast-conserving surgery or mastectomy to help lower the risk of recurrence in the breast or lymph nodes. It is also used to treat cancer that has spread locally or to reduce pain and other symptoms.

### 3) Chemotherapy

Chemotherapy removes remaining cancer cells to reduce the risk of recurrence after breast cancer surgery. It is given as adjuvant therapy by injecting cancer-killing drugs into a vein. Recently, it has been used before surgery to reduce the size of a tumor at the surgery site. Types of chemotherapy and the length of treatment will be determined according to your breast cancer characteristics and other clinical factors.



### 4) Hormonal therapy

Estrogen is a known risk factor for breast cancer. By blocking estrogen production, hormonal therapy can lower the risk of breast cancer recurrence or progression. You will receive hormonal therapy if your cancer is determined to be hormone receptor-positive.

There are many drugs such as Tamoxifen and Aromatase Inhibitors, and the average treatment period is 5 years.



### 5) Targeted therapy

Unlike standard chemotherapy drugs, it targets specific cancer cells. Therefore, it has minimal effects on normal cells and causes less severe side effects. Targeted drugs are used along with chemotherapy drugs to enhance treatment efficacy.

Herceptin (Trastuzumab) is an example of a targeted drug and has an average treatment period of 1 year.

## 10. Can I fully recover from breast cancer?

**Yes.** Thanks to recent advancements in medical technology, the survival rate for breast cancer is increasing. According to a report titled “Five Year Survival Rate for Breast Cancer,” it has a better survival rate compared to other cancers. Therefore, if you detect your breast cancer early enough, 90% of cases can be treated

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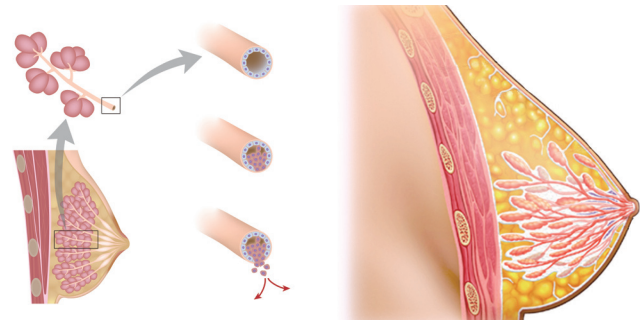
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## 1. What is breast cancer?

Healthy cells are programmed to regulate their growth. If a gene mutation occurs, the cell can keep dividing and growing, which is called a “malignant” tumor or cancer.

Breast cancer is the development of a malignant tumor in the breast, often in the cells of the lobules or ducts.



## 2. Why do I want to pay attention to breast cancer?

Breast cancer is the most commonly diagnosed cancer in women. The population of breast cancer patients has been rapidly increasing due to a Westernized lifestyle (such as eating habits).

The average age of a Western breast cancer patient is 50-60. Compared to the Western population, the average age of an Asian breast cancer patient is 40-50. Around the age of 40 is often the prime of one's life, therefore being diagnosed with breast cancer can be extra demoralizing. But as long as the cancer is detected early, there is about a 90% chance of full recovery. So, you have to try hard to detect breast cancer early.

## 3. What causes breast cancer?

There isn't a clear cause of breast cancer, but many studies have identified possible risk factors such as genetic predisposition and hormonal defects. For example, many studies have concluded that the risk of breast cancer rises due to increased exposure to estrogen. This includes women with an early first menstrual period, women with late menopause, and women who chose not to breast-feed.

Approximately 5-10% of breast cancer diagnoses are due to an abnormality inherited from your parents. Obesity, insufficient exercise, alcohol, high-fat and high-calorie meals, and stress are also risk factors for breast cancer.

## 4. What are the symptoms of breast cancer?

Like any other cancer, breast cancer is an asymptomatic disease that can be difficult to detect early by self-examination.

When the cancer is more advanced, the most common symptom is a large breast lump. In most cases, the lump is not painful. So if you have a lump with pain, you may not have cancer. Sometimes, however, when you have breast pain, you should talk to a medical professional and check for breast cancer.

When the cancer is advanced, you may notice clear or blood-like nipple discharge, breast or nipple skin changing to resemble orange peels, and the nipple turning inward. Also a lump in the underarm area, a swollen arm, and bone pain can occur.

## 5. Is breast cancer inherited?

**No.** Only 5-10% (less than 1 in 10) of women with the disease inherited a breast cancer gene. Currently, BRCA1 and BRCA2 gene mutations are known genetic factors of breast cancer. Breast cancer due to an inherited gene often happens when a patient has more than two breast cancer patients among immediate family members or relatives, also has ovarian cancer, has cancer in both breasts, and is at a young age (under 35). In the case of male breast cancer, gene mutation happens in more than 10% of patients.

## 6. Are all breast cancer types the same?

**No.** There are various types of breast cancer. Breast cancer differs by its area: ductal carcinoma, lobular carcinoma, etc. Also, breast cancer types can be divided into invasive (when it has spread to nearby organs or tissue) and non-invasive (when it is limited to ducts or lobules) breast cancer.

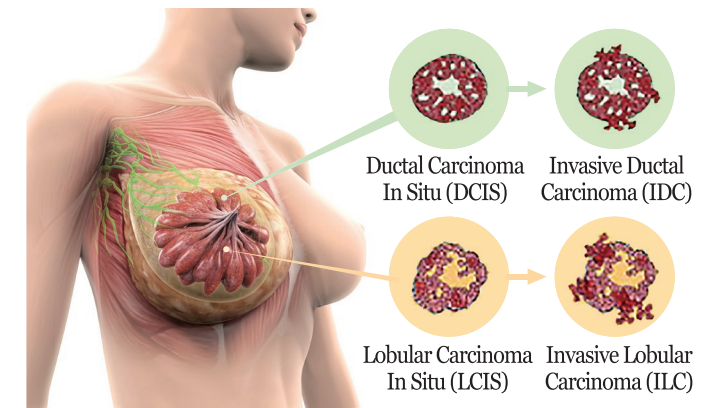
• **Invasive Ductal Carcinoma (IDC):** The most common type of breast cancer. About 75-85% of all breast cancers are invasive ductal carcinomas. IDC means that cancer has spread to surrounding breast tissue and milk ducts.

• **Invasive Lobular Carcinoma (ILC):** About 5-10% of all breast cancers are invasive lobular carcinoma. It means that cancer has spread to the wall of the lobules and invaded the breast tissue.

• **Ductal Carcinoma In Situ (DCIS):** The most common type of non-invasive breast cancer.

It means that cancer has not spread beyond the milk duct into surrounding breast tissue, and is at stage 0. Having DCIS can increase the risk of developing an invasive breast cancer (when cancer cells invade the walls of breast tissue or milk ducts).

• **Lobular Carcinoma In Situ (LCIS):** Stage 0 breast cancer that has cancer cells inside the lobule and has not spread to breast tissue. A woman with LCIS, however, has a higher risk of getting breast cancer at some point in the future.



• **Paget's Disease of the Nipple:** A rare form of breast cancer in which cancer cells collect in or around the nipple.

• **Other types of breast cancer:** Other types include inflammatory breast cancer, phyllodes tumors of the breast, and many special types of invasive breast cancers such as papillary and tubular carcinoma.

## 7. What are the steps for breast cancer diagnosis?

If you suspect you have breast cancer, you will undergo multiple screenings and tests for definite diagnosis.

• **Mammograms:** The best way to find breast cancer early. The exam can find microcalcifications (tiny deposits of calcium) that indicate the presence of breast cancer.

• **Breast ultrasound:** Effective to detect breast cancer when it is difficult to determine whether an abnormality seen on mammography is solid or fluid-filled.

• **Biopsy:** The only way to know for sure is by taking a sample of tissue from the suspicious area of the breast and examining it under a microscope.

• **Breast MRI:** When your biopsy results show that you have breast cancer, MRI will be used to determine the margin of surgery.

• **PET scans, Bone Scan and CT scans:** These are used to check whether the cancer has spread to the lymph nodes or other parts of the body.

