

Breast Cancer

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Introduction

Breast cancer is the most significant cause of cancer death in women worldwide and its prevention remains challenging. All women, especially as they age, are at some risk for developing breast cancer. According to a recent report by the World Health Organization - “ In 2020, there were 2.3 million women diagnosed with breast cancer and 685000 deaths globally. As of the end of 2020, there were 7.8 million women alive who were diagnosed with breast cancer in the past 5 years, making it the world’s most prevalent cancer.”

Being told that you have breast cancer obviously comes as a shock but it is important to know that it has a high survival rate, and most people go on to lead enjoyable lives. The treatment often consists of a mix of surgical removal, radiation therapy, other therapies like hormonal therapy, chemotherapy and/or radio immunotherapy. Breast cancer treatment is highly effective especially when detection is early but for many, it's something that dramatically reshapes their life. In the last decade, a lot of progress has been made in the understanding of breast cancer and in the development of preventative methods. There are numerous stories of survival, courage and inspiration and despite the complexities of the treatment, sometimes simply knowing breast cancer survivor stories before you have faced similar challenges provides a bit of extra strength.

Who is at Risk?

Females are at the highest risk, only 1% breast cancers occur in men. Certain factors that increase the risk of breast cancer include :

- Family history of breast cancer or any hereditary associated cancers- e.g. ovarian.
- Known deleterious gene mutation
- Early menarche
- The prolonged interval between menarche and first pregnancy

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- Late menopause
- Menopausal hormone therapy with estrogen and progestin (decreased risk with progestin alone)
- Increasing age
- Nulliparity
- Not breastfeeding
- Dense breasts on mammography
- Higher body mass index
- Prior exposure to high-dose therapeutic chest irradiation at age 10- 30 years
- Smoking
- Alcohol consumption

Unfortunately, even if all of the potential risk factors could be avoided, this would only reduce the risk of developing breast cancer by a small percentage.

Diagnosis

Usually, breast cancer presents itself in the form of a painless lump. It is important to consult a doctor in case of an abnormal lump without any delay even when there is no pain associated with it. Seeking immediate medical help at the first sign of a symptom or a potential symptom leads to more successful treatment.

Generally, symptoms include :

- Dimpling, puckering or bulging of the skin
- A nipple that has changed position or an inverted nipple (pushed inward instead of sticking out)
- Redness, soreness, rash, or swelling

Breast examination- 3 fingertips palpation

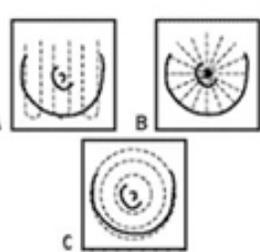
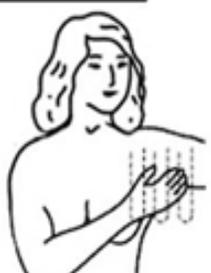
Clinical breast examination is recommended for women who are at high risk or have symptoms. Breast self-awareness (i.e., awareness of the normal appearance and feel of their breasts), each woman to be counselled about and encouraged to go for further screening in the cancer-preventive department.

For asymptomatic, average-risk women:

- 25–39 years: clinical breast examinations may be offered every 1–3 years.
- 40 years and older: clinical breast examination may be offered annually.

Self Examination

Breast self examination

				
<p>1. While in the shower, raise your right arm. Use the three finger pads of your left hand to touch every part of your right breast. Feel gently for any lumps or changes under the skin. then raise your left arm and use the three finger pads of your right hand to examine your left breast.</p>	<p>2. Standing before the mirror, Place your arms at your sides. Check both breasts for anything unusual - discharge, puckering, dimpling or changes in skin texture. Clasp your hands behind your head and look carefully for any changes in the shape or contour of your breasts. Gently squeeze both nipples and look for discharge.</p>	<p>3. Lie flat on your back, With your left arm over your head and a pillow or towel under your left shoulder. Put your left hand behind your head. Use the finger pads of three middle fingers to begin touching your left breast gently but firmly.</p>	<p>4. Move around the breast in a set way. You can choose from the vertical strip (A), the wedge (B), or the circle (C) method. Always use the same method every time. Be sure to cover the entire breast. The exam should now be repeated on your right breast.</p>	<p>5. Finally, rest your arm on a firm surface and use the same method of your choice to examine the area between the breast and the underarm, and the underarm itself. All of this is breast tissue too.</p>

You've completed your breast exam for this month!
 Be sure to mark your calendar to remind yourself to do a breast exam again next month.

Step 1: Begin by looking at your breasts in the mirror with your shoulders straight and your arms on your hips.

Here's what you should look for:

- **Breasts that are their usual size, shape, and color**
- **Breasts that are evenly shaped without visible distortion or swelling**
- **If you notice any potential symptoms, bring them to your doctor's attention.**

Step 2: Now, look for the same changes after raising arms.

Step 3: While you're looking in the mirror, look for any signs of fluid coming out of one or both nipples (this could be a watery, milky, or yellow fluid or blood).

Step 4: Next, feel your breasts while lying down, using your right hand to feel your left breast and then your left hand to feel your right breast. Use a firm, smooth touch with the first few finger pads of your hand, keeping the fingers flat and together. Use a circular motion, about the size of a quarter.

Area to be palpated- the entire breast from top to bottom, side to side - from your collarbone to the top of your abdomen, and from your armpit to your cleavage. Follow a pattern to be sure that you cover the whole breast. You can begin at the nipple, moving in larger and larger circles until you reach the outer edge of the breast. You can also move your fingers up and down vertically, in rows, as if you were mowing a lawn. This up-and-down approach seems to work best for most women. Be sure to feel all the tissue from the front to the back of your breasts: for the skin and tissue just beneath, use light pressure; use medium pressure for tissue in the middle of your breasts; use firm pressure for the deep tissue in the back. When you've reached the deep tissue, you should be able to feel down to your ribcage.

Step 5: Finally, feel your breasts while you are standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so they like to do this step in the shower. Cover your entire breast, using the same hand movements described in step 4.

Mammography Screening

Average-risk women:

- **Screening mammography should be offered to start at age 45 years.**
- **If the patient desires, after clinical counselling and physical examination, initiate mammography at age 45-49 years.**
- **Women should begin screening for mammography by no later than age 50 years. Mammography every 2 yearly;**

Continue screening mammography preferably until age 75 years. Screening with digital mammography is recommended over Digital breast tomosynthesis (DBT) cancer screening.

Some important questions are -

1. **What if a lump is noticed in the examination?**

The nature of palpable lumps is often difficult to determine clinically, but the following features should raise concern:

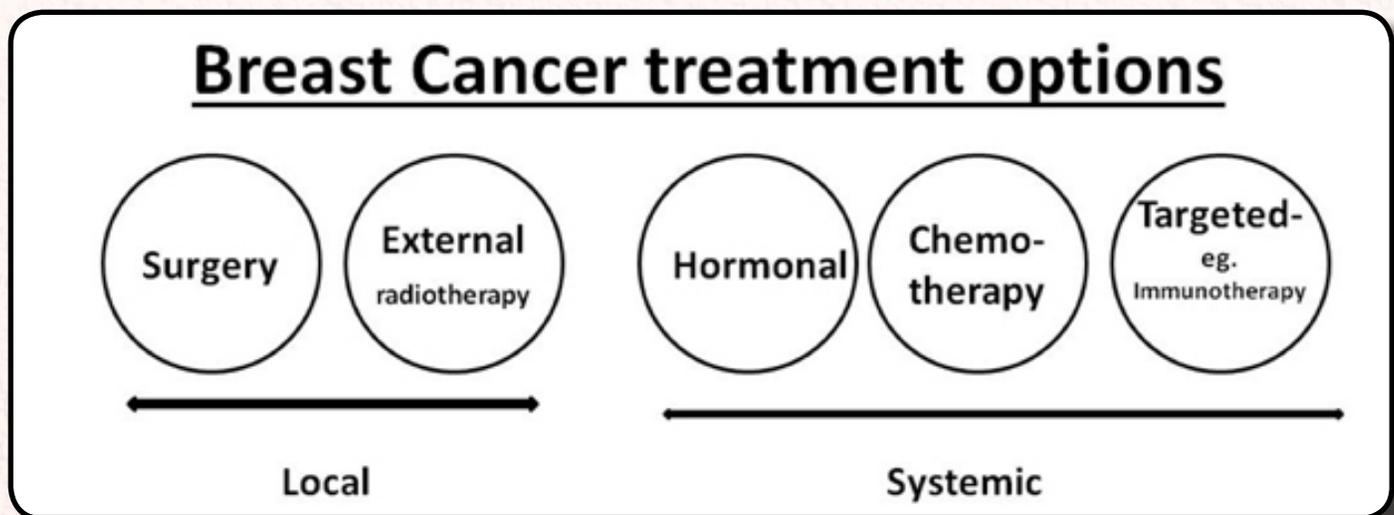
- Hardness
- Irregularity
- Focal nodularity
- Asymmetry with the other breast

Fixation to skin or muscle (assess fixation to the muscle by moving the lump in the line of the pectoral muscle fibres with the patient bracing her arms against her hips). A complete examination includes the assessment of the axillae and supraclavicular fossae, the examination of the chest and sites of skeletal pain, and abdominal and neurologic examinations.

2. A mammogram always hurts me. Why can't I have an ultrasound instead?

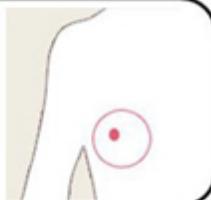
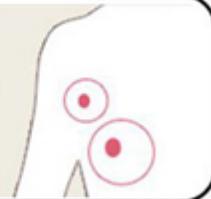
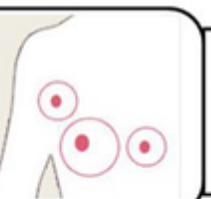
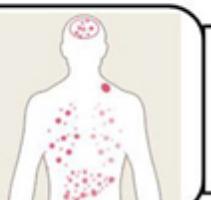
Ultrasound cannot always visualize everything that is seen on a mammogram. Ultrasound is one of the tools used in breast imaging, but it does not replace annual mammography. Many cancers are not visible on ultrasound. Many calcifications seen on mammography cannot be seen on ultrasound. Some early breast cancers only show up as calcifications on mammography. Breast ultrasound is used to investigate an abnormality detected by screening or diagnostic mammography or during a physician-performed breast exam or in younger women.

Treatment



Breast cancer treatment can be highly effective, achieving survival probabilities of 90% or higher, particularly when the disease is identified early. Earlier, all breast cancers were treated surgically by mastectomy which is the complete removal of

the breast. When cancers are big and significant, mastectomy might still be needed. Today, the majority of breast cancers can be treated with a smaller procedure called a “lumpectomy” or partial mastectomy, in which only the tumor is removed from the breast. In these cases, radiation therapy to the breast is generally required to minimize the chances of recurrence in the breast.

Stages of breast cancer		5 year Survival rate
Stage 0 	<ul style="list-style-type: none"> Incidentally diagnosed- Insitu- very small inside the glands and has not spread 	100%
Stage I 	<ul style="list-style-type: none"> < 2cm has not spread 	close to 100%
Stage II 	<ul style="list-style-type: none"> Less than 2cm, lymphnodes metastasis; ≥2cm 	93%
Stage III 	<ul style="list-style-type: none"> Any size but has spread to axillary nodes. 	72%
Stage IV 	<ul style="list-style-type: none"> Has spread to other organs of the body, such as lungs, skin, liver, bones or brain. 	22%

Relapse

For some women - it may come back after the initial treatment which is called recurrence. Although the treatment always aims to eliminate all cancer cells, a few might survive. Dealing with relapse may be harder than the initial treatment. It may occur after months or years. Recurrence can be in the same breast, in the surgery scar,

in nearby lymph nodes, or in a distant area. It should be noted that cancer that is found in the opposite breast without any cancer elsewhere in the body is not a recurrence—it is a new cancer that requires its own treatment.

Life After Treatment

Today, there are millions of breast cancer survivors all over the world. After a marathon of treatments and chemotherapy, you can hardly wait to come back to normal life. Life after treatment means making some new choices which are all about adjusting to life as a survivor. The transition from treatment to survival is not an easy one and there are questions that constantly nag at you - When will the fatigue end? When will life come back to normal again? Will I have a relapse? When will I feel like myself again? The answer to all the above questions is - Patience. When the body goes through such enormous assault, recovery is a huge thing. Even when the treatment is over, your body is still healing. Research has shown that the sooner you accept your physical body changes, the sooner you gain confidence. Two of the biggest problems women with breast cancer struggle with after treatment is fatigue and their hair growing back. These problems seem trivial but have a big impact on a person's ability to feel like themselves again. It is completely normal to have these feelings and with a little support from your loved ones and frequent check ups with your doctor you can eventually find your new normal. For some it is finding joy in the activities they engaged in prior to treatment, while some find new things to enjoy and appreciate life. Whether you are newly diagnosed, still in treatment or post treatment, the way breast cancer impacts your life is very unique. Some days will be better than others, but you'll always have a different experience and perspective on life to draw from.



Reviewer Comments 1

The author covers extensively about the topic - from prevalence, to taking self care, what to do if something doesn't look right, what if indeed the diagnosis is that of breast cancer, treatment and life thereafter. The tone of the article is very optimistic. These days gene screening is also available which involves screening for BRCA1 and BRCA2 mutations. Mutations/Changes in these two genes increase the risk of breast cancer markedly. Genetic counseling and preemptive mastectomy are also helping in preventing the incidence of this disease.

Dr. Usha Das

Reviewer Comments 2

Breast cancer is the most common cancer worldwide, surpassing lung cancer for the first time in 2020. It is a leading cause of cancer death in women in less developed countries. Research shows that lifestyle changes can decrease the risk of breast cancer, even in women at high risk by limiting alcohol intake, maintaining healthy weight, being physically active, breastfeeding and limiting postmenopausal hormone therapy.

The author provides an overview of risk factors, screening and management of breast cancer. Early detection is the key to an effective treatment and cure. Screening mammography remains the most effective method for early detection. The guidelines regarding age at which screening should start are somewhat variable, but there is general consensus that screening must start at age 50 and continue till age 75. Self-breast examination is proposed as a method for early detection especially in low resource settings. It may have some value but there is no definite evidence that it reduces death rates due to breast cancer. Self-examination cannot and must not replace screening mammography. The way breast cancer is viewed has changed drastically since its molecular hallmarks are extensively characterized, including immunohistochemical markers, genomic markers, and immunomarkers. These exciting new developments in the management of breast cancer in past decade have led to a significant increase in long term survival of breast cancer patients. Emotional turmoil in response to a diagnosis of breast cancer can affect a person's physical health and psychological well-being but one should never lose hope and seek immediate care from a qualified team of cancer experts and support groups because most of the breast cancers types are treatable if diagnosed timely. As author rightly points out, going through breast cancer and its treatment is physically and emotionally exhausting. Having family and friends who act as a support system can be a great comfort.

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