

Breast Cancer

In 2020, breast cancer was the leading cause of new cases of cancer in the world with 2.26 million cases reported annually. South Africa also showed a similar trend with 14.3% of new cases of cancer in both men and women of all ages being attributed to breast cancer, putting it as the leading cause of new cancers reported.

Breast cancer is a disease in which the cells of the breast do not grow normally; they grow out of control. The breast is made up of different parts:

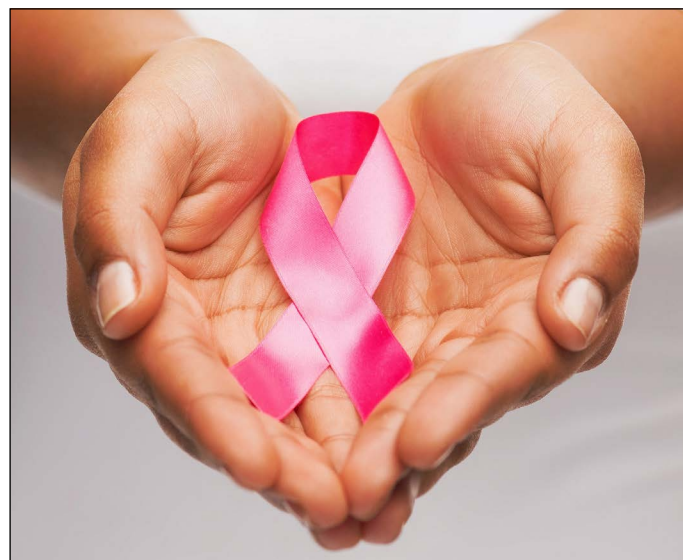
- The ducts – are small canals that carry milk from the lobules to the nipple. They are the most common place for breast cancer to start and cancers that start here are called ductal cancers.
- The lobules – are glands in the breast that make breast milk. Lobular cancers start in the lobules.
- The nipple – is the opening in the skin of the breast where the ducts come together to allow milk to come out of the breast. The nipple is surrounded by the areola, which is a thicker and darker skin. Paget disease of the breast is a less common type of breast cancer that can start in the nipple.
- The fat and connective tissue – surround the ducts and lobules and help to keep them in place. Phyllodes tumour can start in the connective tissue of the breast and is also a less common type of breast cancer.
- The blood vessels and lymph vessels – these carry blood and lymph fluid into and out of the breast. An angiosarcoma is a type of breast cancer that can start from the cells lining these vessels

Causes/Risk factors

There are many factors that are associated with an increased risk of breast cancer. Some of them can be changed to decrease risk and some cannot.

Risk factors that cannot be changed:

- Being female – women have a much higher risk of getting breast cancer than men
- Getting older – the risk of breast cancer increases with age and most breast cancers are diagnosed after the age of 50
- Genetic mutations – women who have inherited changes



es to certain genes such as BRCA1 and BRCA2 have a higher risk of breast and ovarian cancer

- Reproductive history – starting menstrual periods before the age of 12 and starting menopause after the age of 55 increases women's risk of breast cancer due to longer exposure to hormones
- Personal history of breast cancer or non-cancerous breast disease – women who have had breast cancer are more likely to have it again. Some non-cancerous breast diseases such as atypical hyperplasia or lobular carcinoma in situ are associated with a higher risk of getting breast cancer.
- Family history of breast or ovarian cancer – having a first-degree relative (mother, sister, daughter, father, brother or son) or multiple family members from her mother's or father's side who have had breast cancer (or ovarian cancer in the case of female relatives) increases a woman's risk of getting breast cancer.
- Previous radiation therapy treatment – radiation therapy to the chest or breast before the age of 30 increases

- a woman's risk of getting breast cancer
- Having dense breasts— dense breasts have more connective tissue than fatty tissue which can make it difficult to see a tumour (growth) on a mammogram

Risk factors you can change

- Not being physically active
- Being overweight or obese after menopause
- Taking hormones
- Reproductive history
- Drinking alcohol

Signs and Symptoms

Signs and symptoms of breast cancer will differ from person to person. Some people will not have any symptoms or signs. Some of the signs of breast cancer include (but are not limited to):

- A new lump in the breast or underarm
- Thickening or swelling of part of the breast
- Irritation or dimpling of breast skin
- Redness or flaky skin in the nipple area or the breast
- Pulling in of the nipple or pain in the nipple area
- Nipple discharge other than breast milk
- Any change in the size or shape of the breast
- Pain in any area of the breast

Screening for breast cancer

Screening means to check for disease before signs or symptoms appear. Screening can lead to early detection of breast cancer, and this is associated with an improved likelihood of successful treatment. It is important that everyone is familiar with how their breasts look and feel so that any changes are more easily noticeable.

Some screening tests for breast cancer include:

- A clinical breast examination – a doctor or nurse examines the breast for lumps or other changes that can be signs of breast cancer.
- Mammogram – an x-ray of the breast.

Diagnosis

Breast cancer is diagnosed based on clinical assessments, imaging and pathological investigations. Clinical assessment includes taking a medical history which looks at patient's health history and family history and doing a physical examination to check for general signs of health, including checking for signs of breast cancer.

Imaging modalities that can be used include

- Breast ultrasound- pictures of the inside of breasts are made using sound waves. These are then reviewed for abnormalities.
- Diagnostic mammogram – more detailed x-ray of the breast done if there are concerns arising from your

screening mammogram such as a lump or an area of the breast that looks abnormal.

- Breast Magnetic Resonance Imaging (MRI) – used with mammograms to screen women who are a high risk of breast cancer. It takes detailed pictures of areas inside the breast. Can also be used to diagnose breast cancer.

Pathological investigations include:

- Biopsy – tissue or fluid is removed from the breast and looked at under a microscope to check for signs of cancer. The different biopsies that can be done are fine-needle aspiration, core biopsy or open biopsy.
- Blood tests – done to check the overall health status of the patient

Staging

Diagnosis of breast cancer also includes staging of the breast cancer. Staging describes how far the cancer has grown. It is important for planning treatment options and gives an indication of prognosis. The TNM system is commonly used to stage breast cancer and it stands for:

- **Tumour (T)** – what is the size of the tumour in the breast and what are its biomarkers (biological molecules found in the tumour that are a sign of abnormal growth)?
- **Nodes (N)** – has the tumour spread to the lymph nodes? If it has spread; where has it spread to, what is the size and how many nodes are involved?
- **Metastasis (M)** – has the cancer spread to other parts of the body?

The answers to the above questions and results from investigations are combined to determine the stage of breast cancer.

There are 5 major stages in breast cancer:

- **Stage 0 (zero)** – this stage describes cancer that is only in the ducts and lobules of the breast tissue and has not spread to the surrounding tissue of the breast. It is also called non-invasive or in-situ cancer – this means it is in the part of the breast where it originated.

Stage I (one) – in this stage cancer cells are breaking through to or invading normal surrounding breast tissue. It is further divided into IA and IB

- **Stage IA** – the tumour measures up to 2 centimetres (cm) and the cancer has not spread outside the breast and no lymph nodes are involved
- **Stage IB** – there is no tumour in the breast; instead, small groups of cancer cells are found in the lymph nodes or there is a tumour in the breast that is no larger than 2cm and here are small groups of cancer cells in the lymph nodes.

Stage II (two) – also subdivided into IIA and IIB

- **Stage IIA** – no tumour found in the breast, but cancer (larger than 2mm) is found in one to three axillary lymph nodes (the lymph nodes under the arm) or in the lymph nodes near the breast bone (found during a sentinel node biopsy) or the tumour measures 2cm or smaller and has spread to axillary lymph nodes or the tumour is larger than 2cm but not larger than 5cm and has not spread to the axillary lymph nodes
- **Stage IIB** – the tumour is larger than 2cm but less than 5cm and has spread to 1 – 3 axillary lymph nodes or the tumour is larger than 5cm but has not spread to axillary lymph nodes.

Stage III (three) – subdivided further into 3 stages

- **Stage IIIA** – the tumour of any size has spread to 4 to 9 axillary lymph nodes or to internal mammary lymph nodes. It has not spread to other parts of the body. It can also be a tumour that is larger than 5cm and has spread to 1-3 axillary lymph nodes
- **Stage IIIB** – the tumour has spread to the chest wall or caused swelling or ulceration of the breast, or it is diagnosed as inflammatory breast cancer. It may or may not have spread to up to 9 axillary or internal mammary lymph nodes but it has not spread to other parts of the body.
- **Stage IIIC** – the tumour of any size has spread to 10 or more axillary lymph nodes, the internal mammary lymph nodes, and/or the lymph nodes under the collar bone. However, it has not spread to other parts of the body.

Stage IV (four) – this is metastatic breast cancer. The tumour can be any size and it has spread to other organs such as the bones, lungs, brain, liver, distant lymph nodes or chest wall.

The higher the stage, the worse the prognosis and the smaller the survival rate.

Treatment

Breast cancer can be treated in the following ways:

- Surgery – operation in which the doctor removes the cancer cells by either doing a lumpectomy or mastectomy. In a lumpectomy, the tumour and some normal tissue around the edge of the tumour is removed. In a mastectomy, a large part of the breast or the whole breast is removed. Lumpectomy is usually done in patients with stage 0, or I breast cancer and mastectomy is indicated in widespread disease.
- Chemotherapy – either through pills that you take orally, or medicines given in your veins, chemotherapy is medicine used to kill or shrink the cancer cells.
- Hormonal therapy – this therapy stops the cancer cells

from getting the hormones they need to grow

- Biological therapy – this works with your body's immune system to help your body fight cancer cells or to control side effects from other cancer treatments
- Radiation therapy – high-energy rays (similar to x-rays) are used to kill the cancer cells or keep them from growing.

Treatment of breast cancer also includes breast reconstruction surgery or breast replacement, and follow-up care.

Breast reconstruction is done to rebuild the shape and look of the breast. It can be done at the time of treatment of the breast cancer or later on. Breast reconstruction can be done using implants or using the patient's body tissue. Implant breast reconstruction involves small bags filled with salt water and/or silicone gel being placed under the breast skin and muscle. When the patient's own tissue is used, it is called a flap. Breast reconstruction from flaps involves taking tissue from under the shoulder blade, abdomen or buttocks to form the breast.

External breast prosthesis can also be used to replace the breast should a woman opt not to have breast reconstruction surgery.

Follow-up care for breast cancer should be tailored to each patient's case depending on the type of cancer the patient had, the type of treatment they received and their overall health. The purpose of follow-up care is to see how the patient has responded to treatment, to encourage an active lifestyle, to check whether or not the breast cancer has progressed and to manage any health problems the patient may have as a result of treatment.

Follow-up care of patients with early or locally advanced disease (Stage 0-III) includes taking a medical history and having physical examinations every 3-4 months for the first 2 to 3 years. It is then extended to 6 to 12 months up to 5 years, then annually thereafter. Mammography every 12 months is also part of follow-up care. Any woman on tamoxifen (hormonal treatment for breast cancer) should also have an annual gynaecological examination. Follow-up care for patients with stage IV breast cancer includes palliation of symptoms to maintain quality of life for the patient.

Prevention

There is no guaranteed way to prevent breast cancer but there are some things that can be done to reduce risk.

- Maintaining a healthy weight
- Be physically active and exercise regularly
- Avoid alcohol or limit alcohol intake
- Breast-feed
- Limit postmenopausal hormone therapy

What is covered as PMB level of care?

Treatable breast cancer is included in the Prescribed Minimum Benefits (PMB) regulations under DTP 950J. Treatable cancers are defined in the PMB regulations as solid organ malignant tumours where:

- i. they involve only the organ of origin, and have not spread to adjacent organs
- ii. there is no evidence of distant metastatic spread
- iii. they have not, by means of compression, infarction, or other means, brought about irreversible and irreparable damage to the organ within which they originated (for example brain stem compression caused by a cerebral tumour) or another vital organ
- iv. or, if points (i) to (iii) do not apply, there is a well demonstrated five-year survival rate of greater than 10% for the given therapy for the condition concerned.

Regardless of which benefit option a member or beneficiary is on, the medical scheme must pay for the diagnosis, treatment, and care costs of treatable breast cancer. Screening through a physical breast examination, consultations with doctors and other health professionals, surgery, radiology, pathology, chemotherapy, and radiation therapy and breast reconstruction are included in what the medical scheme must cover.

Preventative or prophylactic mastectomy for the undiseased breast is PMB level of care for women who have breast cancer in only one breast. The reconstruction of the undiseased breast is also PMB level of care.

Trastuzumab is a biologic medication that is PMB level of care if certain clinical criteria is met.

Referral to genetic services is PMB level of care for women who are being investigated for breast cancer and have a family history that meets criteria for referral.

The following are not included in the PMB regulations and medical schemes can fund at their own discretion:

- Preventative or prophylactic mastectomy in women who do not have any breast cancer.
- Screening mammograms – most schemes will cover one mammogram a year on certain benefit options. It is important to find out if your medical scheme will cover the mammogram as screening before you go
- Some biologics - some schemes will pay based on strict clinical guidelines and the benefit option the member belongs to.

If the cancer has spread, only treatment that does not provide a five-year survival benefit of more than 10% is not PMB level of care. In such instances, clinically appropriate healthcare services must be funded.

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