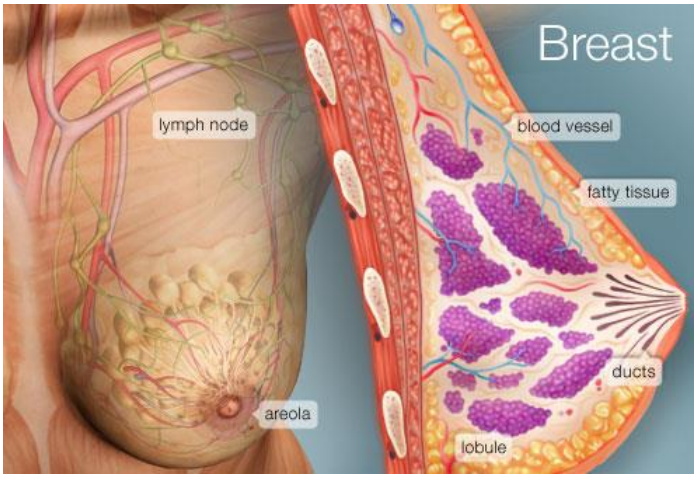
# Cancer Association of South Africa (CANSA)

Research • Educate • Support

Fact Sheet
on
Breast Cancer in Women

**Introduction**

The female breast is the tissue overlying the chest (pectoral) muscles. Women's breasts are made of specialised tissue that produces milk (glandular tissue) as well as fatty tissue. The amount of fat determines the size of the breast.




[Picture Credit: Female Breast]

Although both men and women have breasts, it is in the female that the breast becomes prominent and a vital component of her persona. In the male, the breast is rudimentary.

Structure of the Female Breast - the anatomy of the breast is quite simple. It is made up of about eighteen lobules of glandular tissue. These lobules resemble bunches of grapes and each grape represents the secreting unit, called alveolus (pleural: alveoli). The alveolus consists of cells, which line the unit and produce the milk.

**Incidence of Breast Cancer in South Africa**

According to the National Cancer Registry (2014) the following number of breast cancer cases in women was histologically diagnosed during 2014:

| Group 2014 | Actual Number of Cases | Estimated Lifetime Risk | Percentage of All Cancers |
|---|---|---|---|
| All females | 8 230 | 1 : 27 | 21,78% |
| Asian females | 456 | 1 : 15 | 39,30% |
| Black females | 3 226 | 1 : 53 | 20,05% |
| Coloured females | 1 169 | 1 : 19 | 28,57% |
| White females | 3 370 | 1 : 11 | 20,51% |

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**Frequency of Histologically Diagnosed Cases of Breast Cancer**
According to the National Cancer Registry (2014), the frequency of histologically diagnosed cases of breast cancer in women in South Africa is as follow:

| Group 2014 | 0 to 19 Years | 20 to 29 Years | 30 to 39 Years | 40 to 49 Years | 50 to 59 Years | 60 to 69 Years | 70 to 79 Years | 80 + Years |
|---|---|---|---|---|---|---|---|---|
| All females | 8 | 121 | 805 | 1 763 | 1 937 | 1 799 | 1 129 | 525 |
| Asian females | 1 | 5 | 33 | 89 | 109 | 118 | 67 | 19 |
| Black females | 6 | 84 | 469 | 789 | 722 | 526 | 287 | 174 |
| Coloured females | 0 | 11 | 90 | 266 | 300 | 237 | 166 | 72 |
| White females | 1 | 17 | 187 | 586 | 769 | 889 | 589 | 250 |

**Risk Factors for Breast Cancer in Women**
The following are known risk factors for breast cancer in women:

Sex - just being a woman is the biggest risk factor for developing breast cancer.

Age - as with many other diseases, one's risk of breast cancer goes up as one gets older.

Family history - women with close relatives who have been diagnosed with breast cancer have a higher risk of developing the disease. If one has had one first-degree female relative (sister, mother, daughter) diagnosed with breast cancer, one's risk is doubled.
Also, if one has had one first-degree male relative (brother, father, son) diagnosed with prostate cancer, the risk of breast cancer is increased, especially if the prostate cancer was found at a young age.

Genetics - about 5% to 10% of breast cancers are thought to be hereditary, caused by abnormal genes passed from parent to child. Certain gene mutations that increase the risk of breast cancer can be passed from parents to children. The most common gene mutations are referred to as BRCA1 and BRCA2. These genes can greatly increase one's risk of breast cancer and other cancers, but they do not make cancer inevitable.

Personal history of breast cancer - if one has been diagnosed with breast cancer, one has a 3 to 4 times increased risk to develop a new cancer in the other breast or a different part of the same breast.

Radiation to chest before age 30 - if one has had radiation to the chest to treat another cancer (not breast cancer), such as Hodgkin's lymphoma or non-Hodgkin's lymphoma, one has a higher-than-average risk of breast cancer.

Race or ethnicity – It is said that white women are slightly more likely to develop breast cancer than African American, Hispanic, and Asian women. But African American women are more likely to develop more aggressive, more advanced-stage breast cancer that is diagnosed at a young age. There is still insufficient evidence to categorically make this statement for South African Black women.

Being overweight - overweight and obese women have a higher risk of being diagnosed with breast cancer compared to women who maintain a healthy weight, especially after menopause.

Pregnancy history - women who haven't had a full-term pregnancy or had their first child after age 30 have a higher risk of breast cancer compared to women who gave birth before age 30.

Breastfeeding history - breastfeeding can lower breast cancer risk, especially if a woman breastfeeds for longer than 1 year.

Menstrual history - women who started menstruating (having periods) younger than age 12 have a higher risk of breast cancer later in life. The same is true for women who go through menopause when they are older than 55.

Using HRT (Hormone Replacement Therapy) - current or recent past users of HRT have a higher risk of being diagnosed with breast cancer.

Drinking alcohol - research consistently shows that drinking alcoholic beverages - beer, wine, and spirits - increases the risk of hormone-receptor-positive breast cancer.

Having dense breasts - research has shown that dense breasts can be 6 times more likely to develop cancer and can make it harder for mammograms to detect breast cancer.

Lack of exercise - research shows a link between exercising regularly at a moderate or intense level for 4 to 7 hours per week and a lower risk of breast cancer.

Smoking - smoking causes a number of diseases and is linked to a higher risk of breast cancer in younger, premenopausal women.

Low Vitamin D levels - research suggests that women with low levels of vitamin D have a higher risk of breast cancer. Vitamin D may play a role in controlling normal breast cell growth and may be able to stop breast cancer cells from growing.

**The World Health Organization about Breast Health and Cancer**

The World Health Organization (WHO) states the following about breast health and cancer:

Early diagnosis - early diagnosis remains an important early detection strategy, particularly in low- and middle-income countries where the diseases is diagnosed in late stages and resources are very limited.

Mammography screening - mammography screening is the only screening method that has proven to be effective. Although there is evidence that organised population-based mammography screening programmes can reduce breast cancer mortality by around 20% in the screened group versus the unscreened group across all age groups, in general there appears to be a narrow balance of benefits compared with harms, particularly in younger and older women.

Breast Self-examination (BSE) - there is no evidence on the effect of screening through breast self-examination (BSE). However, the practice of BSE has been seen to empower women, taking responsibility for their own health. Therefore, BSE is recommended for raising awareness among women at risk rather than as a screening method.

Clinical Breast Examination (CBE) - research is underway to evaluate CBE as a low-cost approach to breast cancer screening that can work in less affluent countries. Promising preliminary results show that the age-standardised incidence rate for advanced-stage breast cancer is lower in the screened group compared to the unscreened group.

**Doing a Breast Self-Examination (BSE)**

Breast self-examination (BSE) is to be performed each month in addition to any mammograms or a clinical breast examination. Knowing the cyclical changes, what is normal and what regular monthly changes in the breast feel like is the best way to keep an eye on breast health.

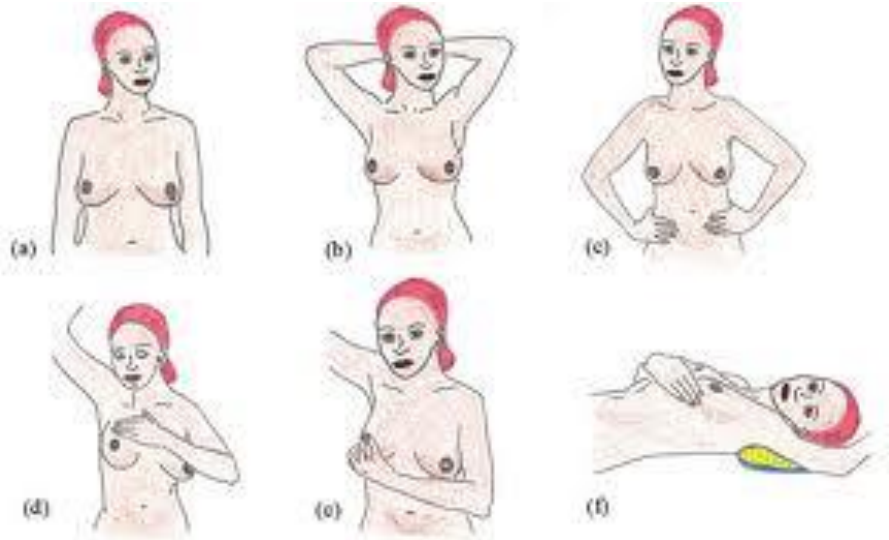
Breast tissue extends from under the nipple and areola up towards the armpit.

*Make a Regular Date for Doing a BSE* - If pre-menopausal**:** Set a regular time to do the BSE a few days after the menstruation when hormone levels are relatively stable and the breasts are less tender.

If already menopausal (have not had a period for a year or more), pick a particular day of the month to do the BSE and then repeat the BSE on that day every month

*Visual Examination of Breasts - Hands on Hips* - In the privacy of the bathroom or bedroom, strip to the waist and stand in front of a mirror. Both breasts must be visible at the same time. Stand with the hands on hips and check the appearance of both breasts. Look at size, shape, colour, whether both nipples are at the same level and contour. Note any changes in the skin colour or texture. Look at the nipples and areolas, to see how healthy they look

*Visual Examination - Arms Over the Head* - Still standing in front of the mirror, raise both arms over the head and see if both breasts move in the same way, and make a note of any differences.




[Picture Credit: Breast Examination]

Look at the size, shape, and drape - checking for symmetry. Pay attention to both nipples and areolas, to see if there are any dimples, bumps, or retraction (indentation). Look up toward the armpits and note if there is any swelling in the lower armpit area

*Manual Examination - Stand and Stroke* - Raise the left arm overhead, and use the right-hand fingers to apply gentle pressure to the left breast. Stroke from the top to the bottom of the breast, moving across from the inside of the breast all the way into the armpit area. Make use of a circular motion, being sure to cover the entire breast area. Take note of any changes in texture, colour, or size.

Switch sides and repeat the examination. This may be best done in the shower, as wet skin will have the least resistance to the friction of the fingers.

*Manual Examination - Check Both Nipples* - Still facing the mirror, lower both arms. With the index and middle fingers of the right hand, gently squeeze the left nipple and pull it forward. Does the nipple spring back into place? Does it pull back into the breast? Note whether or not any fluid leaks out. Reverse the hands and check the right nipple in the same manner.

*Manual Examination - Recline and Stroke* - This is best done in the bedroom, where one can lie down. Place a pillow on the bed so as to lie with both head and shoulders on the pillow. Lie down and put the left hand behind the head. Use the right hand to stroke the breast and underarm. Take note of any changes in texture, colour, or size. Switch sides and repeat the examination.

*Guidelines For Doing a BSE*:

- Mark the calendar as a reminder to do a BSE regularly.
- Stay relaxed and breathe normally while doing the BSE. Becoming tense may produce some knots that may be mistaken for something worrisome
- Report any changes or unusual pain to a doctor or nurse practitioner
- Keep a log of changes
- Remember to have an annual clinical breast examination and mammogram as described above

***CANSA's Position on BSE***

CANSA advocates that every woman should do regular (monthly) breast self-examinations (BSE) at the same time every month following her menstrual cycle from age 20 and to report any changes or concerns to a doctor or professional nurse practitioner without delay.

Regular monthly BSE should be seen as a method to raise awareness of breast cancer and taking responsibility for own breast health rather than as a screening method for breast cancer.

**Symptoms and Signs of Breast Cancer in Women**

Changes that could be due to a breast cancer include:

- A lump or thickening in an area of the breast
- A change in the shape of the nipple, particularly if it turns in, sinks into the breast, or has an irregular shape
- A blood stained discharge from the nipple
- A rash on a nipple or surrounding area
- A swelling or lump in the armpit
- Nipple tenderness or a lump or thickening in or near the breast or underarm area
- A change in the skin texture or an enlargement of pores in the skin of the breast (some describe this as similar to an orange peel's texture)
- Any unexplained change in the size or shape of the breast
- Dimpling anywhere on the breast
- Unexplained swelling of the breast (especially if on one side only)

- Unexplained shrinkage of the breast (especially if on one side only)
- Recent asymmetry of the breasts (Although it is common for women to have one breast that is slightly larger than the other, if the onset of asymmetry is recent, it should be checked.)
- Nipple that is turned slightly inward or inverted
- Skin of the breast, areola, or nipple that becomes scaly, red, or swollen or may have ridges or pitting resembling the skin of an orange

These signs do not necessarily mean cancer. Inverted nipples, blood stained nipple discharge or a rash can all be due to other medical conditions. In the event of any changes to what is normal, one should see a health professional. It is most likely to be a benign condition that can easily be treated. The health professional will refer to a breast health clinic or medical specialist where the staff can provide reassurance or provide any necessary treatment.

**Diagnosis of Breast Cancer in Women**

The doctor will check both breasts during a clinical breast examination, feeling for any lumps or other abnormalities.

Doctors use various tests to diagnose breast cancer and find out if the cancer has spread to other parts of the body. Some of the tests may also help the doctor decide which treatments may be the most effective.

For most types of breast cancer, a biopsy is the only way to make a definitive diagnosis of cancer. A biopsy is the removal of a small amount of tissue for examination under a microscope.

**Types of Breast Cancer in Women**

The following types of breast cancer have been identified in women:

Ductal Carcinoma *in Situ*

Ductal Carcinoma in Situ (DCIS) is a non-invasive breast cancer where abnormal cells have been contained in the lining of the breast milk duct.

Invasive Ductal Carcinoma

Invasive Ductal Carcinoma means that abnormal cells that originated in the lining of the breast milk duct have invaded surrounding tissue.

Triple Negative Breast Cancer

Triple negative breast cancer means that the cells in the tumour are negative for progesterone, oestrogen, and HER2/neu receptors.

Inflammatory Breast Cancer

Inflammatory breast cancer is a less common form of breast cancer that may not develop a tumour and often affects the skin of the breast.

Phyllodes Tumour of the Breast

Phyllodes tumours of the breast are rare, accounting for less than 1% of all breast tumours. Phyllodes tumours tend to grow quickly, but they rarely spread outside the breast.

Metastatic Breast Cancer

Metastatic breast cancer is cancer that has spread beyond the breast, sometimes into the lungs, bones, or brain. Metastatic breast cancer is also classified as Stage 4 breast cancer meaning that the cancer has spread to other parts of the body.

Cribriform Breast Cancer

Cribriform breast cancer is a rare form of breast cancer that is often combined with another form of breast cancer. It is typically a low-grade and slow-growing cancer with a better outlook than most other types of invasive breast cancer.

Other Types of Breast Cancer

Less common types of breast cancer include Medullary Carcinoma, Tubular Carcinoma, and Mucinous Carcinoma.

- Medullary carcinoma - medullary carcinoma accounts for 3-5% of all breast cancer types. The tumour usually shows up on a mammogram, but does not always feel like a lump.
- Tubular Carcinoma - making up about 2% of all breast cancer diagnosis, tubular carcinoma cells have a distinctive tubular structure when viewed under a microscope. It is usually found through a mammogram and is a collection of cells that can feel like a spongy area of breast tissue rather than a lump. Typically this type of breast cancer is found in women aged 50 and above and usually responds well to hormone therapy.
- Mucinous Carcinoma (Colloid) - mucinous carcinoma represents approximately 1% to 2% of all breast cancers. The main differentiating features are mucus production and cells that are poorly defined. It also has a favourable prognosis in most cases.
- Paget Disease of the Breast or Nipple - this condition (also known as mammary Paget disease) is a rare type of cancer affecting the skin of the nipple and often the areola, which is the darker circle of skin around the nipple. Most people with Paget disease evident on the nipple also have one or more tumours inside the same breast.

**Special Tests**

The following tests or examinations may be done:

Mammogram - A mammogram is a low-dose x-ray of the breast. You'll need to take off your top and bra for the mammogram. The radiographer will position you so that your breast is against the x-ray machine and is gently but firmly compressed with a flat, clear, plastic plate. You'll have two mammograms of each breast taken from different angles.

[Picture Credit: Mammogram]

The breast tissue needs to be squashed to keep the breast still and to get a clear picture. Most women find this uncomfortable, and for some women it may be painful for a short time.

Mammograms are usually only used in women over the age of 35. In younger women, the breast tissue is more dense (has less fat), which makes it difficult to detect any changes on the mammogram.

**CANSA's Position on Mammography**:
CANSA is aware that in the developed world the starting age for regular breast screening by means of a mammogram has been raised to 45 years. This applies to First World countries where access to health care is freely available to everyone.

The South African situation is, however, somewhat different:

- The majority of South African women do not enjoy access to health care
- During 2013 a total of 1 656+ women between the ages 20 and 44 were histologically diagnosed with breast cancer

  CANSA, therefore, advocates a mammogram every year for all women from age 40 for purposes of non-symptomatic breast screening.

  CANSA further advocates that:
  - Women who are at risk and those that have had breast health problems in the past should consult their respective health professional to determine a schedule applicable to them
  - Women aged 40 to 54 should have an annual mammogram
  - Women 55 years and older should change to having a mammogram every 2 years – or have the choice to continue with an annual mammogram
  - Screening should continue as long as a woman is in good health and is expected to live 10 years or longer
  - Every woman should be informed of the known benefits, limitations, and potential harms linked to breast cancer screening by means of a mammogram

Breast ultrasound - An ultrasound uses sound waves to build up a picture of the breast. It can show if a lump is solid (made of cells) or is a fluid-filled cyst.

Ultrasound of lymph glands – the patient may also have an ultrasound of the lymph nodes in the armpit. If any of the nodes feel swollen or look abnormal on the ultrasound, the doctor will do a fine needle aspiration on the node or nodes.

Biopsy - This is when the doctor removes a small piece of tissue or cells from the lump or abnormal area. A pathologist (doctor who specialises in analysing cells) examines the tissue or cells under a microscope to look for cancer cells.

**Staging of Breast Cancer in Women**
Every patient that has been diagnosed with breast cancer must have other tests performed to determine whether the cancer has spread. This process is known as breast cancer staging. An appropriate treatment plan can be developed once the stage of the cancer is known.

**Recurrent Breast Cancer**

When breast cancer comes back, it may return in the same place. This is called a 'recurrence', because it is not a new cancer. But a recurrence can also appear in a place not directly related to the first breast cancer. This is called a 'metastasis', and if cancer is detected in several areas, these are called 'metastases'. When breast cancer comes back, it tends to show up in specific areas of the body:

- the breast or the area where the breast used to be
- the chest wall
- the lymph nodes
- the bones
- the lungs or around the lungs
- the liver
- the brain

**Treatment Options for Breast Cancer in Women**

People with cancer should be cared for by a multidisciplinary team (MDT), a team of specialists who work together to provide the best treatment and care. The team often consists of a specialist cancer surgeon, an oncologist (a radiotherapy and chemotherapy specialist), a radiologist, a pathologist, a radiographer, a reconstructive surgeon and a specialist nurse. Other members may include a physiotherapist, a dietician and an occupational therapist, and one may have access to clinical psychology support.

The main treatments for breast cancer may include:

Surgery - there are two types of surgery for breast cancer. These are surgery to remove just the cancerous lump (tumour), known as breast-conserving surgery, and surgery to remove the whole breast, which is called a mastectomy.

Breast-conserving surgery - breast-conserving surgery ranges from a lumpectomy or wide local excision, in which just the tumour and a little surrounding breast tissue is removed, to a partial mastectomy or quadrantectomy, in which up to a quarter of the breast is removed.

Mastectomy - a mastectomy is the removal of all the breast tissue, including the nipple. If there are no obvious signs that the cancer has spread to the lymph nodes, the patient may have a mastectomy, in which the breast is removed, along with a sentinel lymph node biopsy (SLNB). If the cancer has spread to the lymph nodes, the patient will probably need more extensive removal (clearance) of lymph nodes from the axilla (under the arm).

Radiotherapy - Radiation therapy is a form of cancer treatment that uses high levels of radiation to kill cancer cells or keep them from growing and dividing - while minimising damage to healthy cells.

Chemotherapy - chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing.

Hormone therapy - is often used to treat breast cancers that are sensitive to hormones. Doctors sometimes refer to these cancers as oestrogen receptor positive (ER positive) and progesterone receptor positive (PR positive) cancers.

Biological therapy (targeted therapy) - targeted therapies (sometimes called biological therapies) are new drugs that work differently from chemotherapy.

**Follow-up Care and Treatment**

Follow-up is recommended after treatment for breast cancer to check whether breast cancer has come back, to monitor side effects of treatment and to provide practical and emotional support.

Women who have been diagnosed and treated for early breast cancer have an increased risk of breast cancer coming back or developing in the other breast. Regular follow-up means that if breast cancer does come back or if a new breast cancer develops, it can be treated promptly. Follow-up also allows doctors to check for any side effects from treatment and to monitor any long-term treatments such as hormonal therapies. It also provides an opportunity for women to talk about how they're feeling.

Follow-up after treatment for breast cancer involves regular physical examinations and breast imaging tests (mammogram and/or ultrasound).

**About Clinical Trials**

Clinical trials are research studies that involve people. They are conducted under controlled conditions. Only about 10% of all drugs started in human clinical trials become an approved drug.

Clinical trials include:

- Trials to test effectiveness of new treatments
- Trials to test new ways of using current treatments
- Tests new interventions that may lower the risk of developing certain types of cancers
- Tests to find new ways of screening for cancer

The **South African National Clinical Trials Register** provides the public with updated information on clinical trials on human participants being conducted in South Africa. The Register provides information on the purpose of the clinical trial; who can participate, where the trial is located, and contact details.

For additional information, please visit: www.sanctr.gov.za/

**Medical Disclaimer**

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