

Cancer Association of South Africa (CANSA)



CANSA Fact Sheet on Breast Cancer in Women

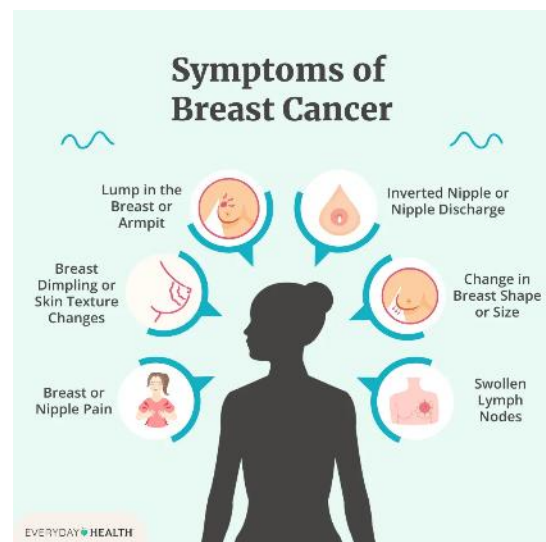
Introduction

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 Cancer]

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 female breast is a complex glandular and structural organ located on the anterior thoracic wall (the chest). It extends vertically from the 2nd to 6th ribs and horizontally from the sternum to the mid-axillary line, resting primarily on the pectoralis major muscle. 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 (plural: alveoli). The alveolus consists of cells, which line the unit and produce the milk.



Major Anatomical Components of the Female Breast

- **Lobes and Lobules:** Each breast contains 15 to 20 sections called lobes, arranged radially around the nipple like the petals of a daisy. Each lobe divides into smaller clusters called lobules (containing milk-producing sacs known as acini or alveoli). This terminal duct lobular unit is where milk is produced and where most breast cancers originate.
- **Milk (Lactiferous) Ducts:** These thin tubes transport milk from the lobules to the nipple. Each breast typically features around 12 to 15 main ducts opening at the nipple.
- **Adipose (Fatty) and Fibrous Tissue:** Subcutaneous fat fills the spaces between the lobes and ducts, largely determining the size and shape of the breast. Fibrous connective tissue intertwines with the glandular elements to form fibroglandular tissue.

Researched and Authored by Prof Michael C Herbst

[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Audiometry and Noise Measurement; Dip Genetic Counselling; Diagnostic Radiographer; Medical Ethicist]

Approved by Ms Elize Joubert, Chief Executive Officer (BA Social Work (cum laude); MA Social Work]

October 2026

- *Cooper's Ligaments (Suspensory Ligaments)*: Fibrous bands of connective tissue that run from the chest wall fascia through the breast to the skin, providing structural support and shape.
- *Nipple and Areola*:
 - The nipple sits at the centre of the areola and contains multiple duct openings and sensory nerve endings.
 - The areola is the darker circular skin surrounding the nipple. It houses Montgomery's glands (or tubercles), which secrete a natural lubricating oil to protect the skin during breastfeeding.
- *Vascular and Lymphatic Networks*: Blood is supplied via branches of the internal thoracic and lateral thoracic arteries. Lymphatic vessels drain fluid primarily into the axillary lymph nodes (under the armpits), which is a primary pathway for the staging and spread of breast conditions.

Female breast cancer occurs when breast cells mutate and those abnormal cells in the breast grow uncontrollably, forming tumours and potentially spreading to other parts of the body. Key symptoms include a new lump, breast or nipple changes (like dimpling, redness, or inward turning), or nipple discharge, though these can also signal other conditions. Treatment typically involves a combination of surgery, chemotherapy, and radiation therapy, tailored to the individual's specific cancer.

In the past, breast cancer typically affected women aged 50 and older, but it now affects women who are younger than 50. In South Africa women as young as 30 and even a considerable number in their late 20s are now being diagnosed with breast cancer.

Men can also develop breast cancer.

Key facts according to the World Health Organization:

- Breast cancer caused an estimated 670 000 deaths globally in 2022.
- Roughly half of all breast cancers occur in women with no specific risk factors other than sex and age.
- Breast cancer was the most common cancer in women in 157 countries out of 185 in 2022.
- Breast cancer occurs in every country in the world.
- Approximately 0.5–1% of breast cancers occur in men.
- Effective interventions for early and timely diagnosis linked to comprehensive treatment, rehabilitation and palliative care are essential to reduce the burden of breast cancer and to achieve and maintain optimal functioning and well-being.

In 2022, there were an estimated 2.3 million women diagnosed with breast cancer and 670 000 deaths globally. Breast cancer occurs in every country of the world in women at any age after puberty but with increasing rates in later life.

Global estimates reveal striking inequities in the breast cancer burden according to human development. For instance, in countries with a very high Human Development Index (HDI), 1 in 12 women will be diagnosed with breast cancer in their lifetime and 1 in 71 women die of it.

In contrast, in countries with a low HDI; while only 1 in 27 women is diagnosed with breast cancer in their lifetime, 1 in 48 women will die from it.

(Cleveland Clinic, 2023; TeachMeAnatomy, 2025; Surveillance, Epidemiology, and End Results Program at the National Cancer Institute, 2026; World Health Organization, 2026; SA Journal of Radiology, 2025).

Researched and Authored by Prof Michael C Herbst

[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Audiometry and Noise Measurement; Dip Genetic Counselling; Diagnostic Radiographer; Medical Ethicist]

Approved by Ms Elize Joubert, Chief Executive Officer (BA Social Work (cum laude); MA Social Work)

October 2026

Xiong, X., Zheng, L.W., Ding, Y., Chen, Y.F., Cai, Y.W., Wang, L.P., Huang, L., Liu, C.C., Shao, Z.M. & Yu, K.D. 2025.

“Breast cancer, characterized by unique epidemiological patterns and significant heterogeneity, remains one of the leading causes of malignancy-related deaths in women. The increasingly nuanced molecular subtypes of breast cancer have enhanced the comprehension and precision treatment of this disease. The mechanisms of tumorigenesis and progression of breast cancer have been central to scientific research, with investigations spanning various perspectives such as tumor stemness, intra-tumoral microbiota, and circadian rhythms. Technological advancements, particularly those integrated with artificial intelligence, have significantly improved the accuracy of breast cancer detection and diagnosis. The emergence of novel therapeutic concepts and drugs represents a paradigm shift towards personalized medicine. Evidence suggests that optimal diagnosis and treatment models tailored to individual patient risk and expected subtypes are crucial, supporting the era of precision oncology for breast cancer. Despite the rapid advancements in oncology and the increasing emphasis on the clinical precision treatment of breast cancer, a comprehensive update and summary of the panoramic knowledge related to this disease are needed. In this review, we provide a thorough overview of the global status of breast cancer, including its epidemiology, risk factors, pathophysiology, and molecular subtyping. Additionally, we elaborate on the latest research into mechanisms contributing to breast cancer progression, emerging treatment strategies, and long-term patient management. This review offers valuable insights into the latest advancements in Breast Cancer Research, thereby facilitating future progress in both basic research and clinical application.”

Conflict of interest statement

Competing interests: The authors declare no competing interests.

Kim, J. & Munster, P.N. 2025.

“Estrogens have been associated with an increase in breast cancer risk. Yet emerging clinical and experimental evidence points to progestogens [endogenous progesterone or synthetic progesterone (progestin)] as the primary hormonal driver underlying seemingly estrogen-associated breast cancer risk. Estrogens may contribute to breast cancer risk indirectly by induction of the progesterone receptor and thus amplifying progesterone signaling. Large studies of hormonal contraceptives suggest that the small increase in breast cancer risk from hormonal contraceptives is mainly attributable to progestins, not estrogens. Estrogen-plus-progestin hormone replacement therapy (HRT) has consistently shown an increase in breast cancer risk among postmenopausal women, whereas estrogen-alone HRT has little impact on breast cancer risk in naturally or surgically menopausal women. In particular, the long-term follow-up of the Women's Health Initiative (WHI) randomized trials suggests a benefit of estrogen alone. Recent data further indicate that endogenously elevated estrogen during assisted reproductive technology (ART) exhibits little adverse effect on or potentially a reduction in breast cancer risk and recurrence. Also, accumulating evidence suggests that inhibition of progesterone signaling is a critical mechanism underlying the risk-reducing and therapeutic effects of antiestrogens. Estrogen HRT has shown an array of proven benefits, including ameliorating menopausal symptoms and improving bone health. Collective evidence thus suggests that estrogen HRT is likely to offer health benefits to perimenopausal or postmenopausal women, including breast cancer survivors, as well as young BRCA1/2 carriers with prophylactic oophorectomy for ovarian cancer prevention.”

Tumour Grade vs Tumour Stage

A cancer's grade describes how abnormal the cancer cells and tissue look under a microscope when compared to healthy cells. Cancer cells that look and organise most like healthy cells and tissue are low grade tumours. Doctors describe these cancers as being well differentiated. Lower grade cancers are typically less aggressive and have a better prognosis.

While a grade describes the appearance of cancer cells and tissue, a cancer's stage explains how large the primary tumour is and how far the cancer has spread in the patient's body.

There are several different staging systems. Many of these have been created for specific kinds of cancers. Others can be used to describe several types of cancer.

One common system that many people are aware of puts cancer on a scale of 0 to IV.

- Stage 0 is for abnormal cells that haven't spread and are not considered cancer, though they could become cancerous in the future. This stage is also called "in-situ."
- Stage I through Stage III are for cancers that haven't spread beyond the primary tumour site or have only spread to nearby tissue. The higher the stage number, the larger the tumour and the more it has spread.
- Stage IV cancer has spread to distant areas of the body.

(University of Texas, MD Anderson Cancer Center. 2025).

The International Classification of Diseases 10th version (ICD-10)

The International Classification of Diseases (ICD) is designed to promote international comparability in the collection, processing, classification, and presentation of mortality statistics. This includes providing a format for reporting causes of death on the death certificate.

ICD serves a broad range of uses globally and provides critical knowledge on the extent, causes and consequences of human disease and death worldwide via data that is reported and coded with the ICD. Clinical terms coded with ICD are the main basis for health recording and statistics on disease in primary, secondary and tertiary care, as well as on cause of death certificates. These data and statistics support payment systems, service planning, administration of quality and safety, and health services research. Diagnostic guidance linked to categories of ICD also standardizes data collection and enables large scale research.

For more than a century, the International Classification of Diseases (ICD) has been the basis for comparable statistics on causes of mortality and morbidity between places and over time. Originating in the 19th century, the latest version of the ICD, ICD-11, was adopted by the 72nd World Health Assembly in 2019 and came into effect on 1st January 2022.

The general ICD-10 code category for a malignant neoplasm of the breast is C50.

Specific site, laterality, and patient sex are coded using more detailed subcategories:

Common C50 Subcategories

- C50.0: Nipple and areola
- C50.1: Central portion of breast
- C50.2: Upper-inner quadrant of breast
- C50.3: Lower-inner quadrant of breast
- C50.4: Upper-outer quadrant of breast
- C50.5: Lower-outer quadrant of breast
- C50.6: Axillary tail of breast
- C50.8: Overlapping lesion of breast
- C50.9: Breast, unspecified
- C50.A: Malignant inflammatory neoplasm of breast

(ICD10Data.Com, 2026).

Incidence of Breast Cancer in South Africa

According to the latest edition of the National Cancer Registry (2024) the following number of breast cancer cases in women was histologically diagnosed during 2024:

Group	Actual Number of Cases	Estimated Lifetime Risk	Percentage of All Cancers
2024			
All females	11 262	1:28	23,05%
Asian females	509	1:22	37,22%
Black females	5 305	1:46	22,53%
Coloured females	1 643	1:19	29,69%
White females	3 805	1:11	20,21%

Frequency of Histologically Diagnosed Cases of Breast Cancer

According to the latest edition of the National Cancer Registry (2024), the frequency of histologically diagnosed cases of breast cancer in women in South Africa is as follow:

Group	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
2024								
All females	6	155	1 094	2 314	2 666	2 517	1 737	773
Asian females	0	8	35	84	129	131	91	31
Black females	4	113	761	1 393	1 316	996	494	226
Coloured females	1	18	113	307	424	407	262	111
White females	1	16	185	530	795	983	890	405

Risk Factors for Female Breast Cancer?

Female breast cancer risk factors include being a woman and older age, a personal or family history of breast cancer, certain inherited genetic mutations (like BRCA1 and BRCA2), a personal history of certain non-cancerous breast conditions, and a history of radiation therapy to the chest. Lifestyle factors that increase risk are limited physical activity, a diet high in saturated fat and low in fruits and vegetables, high alcohol intake, being overweight or obese, and using hormone replacement therapy (HRT).

Herewith a list of risk factors for female breast cancer (in no particular order):

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've been diagnosed with breast cancer have a higher risk of developing the disease. If one has one first-degree *female relative* (sister, mother, daughter) diagnosed with breast cancer, one's risk is doubled. Having a first-degree *male relative* with breast cancer also raises a woman's risk.

Family history of prostate cancer - Women whose father, brother or son have had prostate cancer may have a 14 percent higher risk of developing breast cancer.

Researched and Authored by Prof Michael C Herbst

[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Audiometry and Noise Measurement; Dip Genetic Counselling; Diagnostic Radiographer; Medical Ethicist]

Approved by Ms Elize Joubert, Chief Executive Officer (BA Social Work (cum laude); MA Social Work)

October 2026

Personal history of breast cancer - If having been diagnosed with breast cancer, one is 3 to 4 times more likely to develop a new cancer in the other breast or a different part of the same breast. This risk is different from the risk of the original cancer coming back (called risk of recurrence).

Genetics - About 5% to 10% of breast cancers are thought to be hereditary, caused by abnormal genes passed from parent to child.

Inherited changes (mutations) to certain genes, such as BRCA1 and BRCA2 - Women who have inherited these genetic changes (mutations) are at higher risk of breast and ovarian cancer.

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 disease or non-Hodgkin's lymphoma, one has a higher-than-average risk of breast cancer.

Certain breast changes - If one had been diagnosed with certain benign (not cancer) breast conditions, one may have a higher risk of breast cancer. There are several types of benign breast conditions that affect breast cancer risk.

Race/Ethnicity - White women are slightly more likely to develop breast cancer than Black and Asian women. But Black women are more likely to develop more aggressive, more advanced-stage breast cancer that is diagnosed at a younger age.

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. Being overweight also can increase the risk of the breast cancer coming back (recurrence) in women who have had the disease.

Pregnancy history - Women who haven't had a full-term pregnancy or have 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're older than 55.

Hormone Replacement Therapy (HRT) - Current or recent past users of HRT have a higher risk of being diagnosed with breast cancer. Since 2002 when research linked HRT and risk, the number of women taking HRT has dropped dramatically.

Drinking alcohol - Research consistently shows that drinking alcoholic beverages — beer, wine, and liquor — increases a woman's risk of hormone-receptor-positive breast cancer. There is no safe level of alcohol consumption.

Dense Breasts - Research has shown that dense breasts can be twice as likely to develop cancer as non-dense breasts 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. Research also has shown that there may be link between very heavy second-hand smoke exposure and breast cancer risk in postmenopausal women.

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.

Diet – diet seems to be playing a more important role in Breast Cancer than previously thought.

Emerging Risk

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.

(Centers for Disease Control and Prevention (CDC), 2026; Breast Cancer.Org, 2026; Mayo Clinic, 2026; World Health Organization, 2026).

The Role of BRCA Gene Mutation

Each person's DNA contains the code used to build the human body and keep it functioning. Genes are the small sections of DNA that code for individual traits. For example, someone with naturally red hair has a gene that causes his or her hair to be red.

All inherited traits are passed down through genes. Each person has two copies of every gene: one gene from each parent. Since each parent passes down exactly half of their genes to each child, any of the parent's genetic traits has a 50% chance of being passed on to their offspring.

BRCA gene mutations increase the risk of breast and ovarian cancers by impairing the DNA repair functions of the BRCA1 and BRCA2 tumour suppressor genes, leading to uncontrolled cell growth. In women, inheriting a harmful BRCA1 or BRCA2 mutation significantly elevates lifetime breast cancer risk and the risk of developing cancer in the other breast (contralateral breast). These mutations are often inherited and can be passed from parent to child, with genetic testing available to identify carriers, allowing for increased surveillance and personalized risk-management strategies.

BRCA is an abbreviation originating from Br(east) Ca(ncer) and are tumour suppressor genes. Every cell in a human body contains them. There are two types: BRCA1 and BRCA2. Their main function in the body is to repair DNA, keep other genes healthy, and prevent cancerous changes. These genes can become mutated.

A mutation is a change in the gene which makes the gene stop doing its main function, therefore, no longer keeping abnormal cell growth in check. These changes (mutations) can be inherited or passed on from parents, grandparents, and great grandparents.

If someone has a gene mutation, their risk of cancer increases.

Anyone can have a BRCA gene mutation. Though, they are more commonly found in certain ethnic groups, including Ashkenazi Jews, Afrikaners, French Canadians, and people of Icelandic backgrounds. The most common cancers that can result from BRCA gene mutations are breast cancer, ovarian cancer, and prostate cancer. The full list includes.

WOMEN

BRCA1

Breast cancer
Ovarian cancer
Pancreatic cancer

BRCA2

Breast cancer
Ovarian cancer
Pancreatic cancer
Melanoma

MEN

BRCA1

Breast cancer
Prostate cancer
Pancreatic cancer

BRCA2

Breast cancer
Prostate cancer
Melanoma
Pancreatic cancer

If someone has a BRCA mutation, they may pass the mutation to their children. Each child has a 50% chance of inheriting their parents' BRCA gene mutation. One's siblings may also have inherited the BRCA gene mutation.

(National Breast Cancer Foundation, Inc., 2026; National Cancer Institute, 2024; Breast Cancer Research Foundation, No Date).

Reasons One's Breast May Hurt that have Nothing to do with Cancer?

Some benign breast conditions are linked to inflammation, pain, and infection. There can be areas of redness and swelling involving the nipple, areola, and/or skin of the breast. Such symptoms may not necessarily be a sign of breast cancer.

Hormones are making your breasts sore - Hormonal fluctuations are the number one reason women have breast pain. Breasts become sore three to five days prior to the beginning of a menstrual period and stop hurting after it starts. This is due to a rise in oestrogen and progesterone right before your period. These hormones cause your breasts to swell and can lead to tenderness.

You have a breast injury - Like any part of your body, breasts can be injured. This can happen because of an accident, while playing sports or from breast surgery. You may feel a sharp, shooting pain at the time of injury. Tenderness can linger for a few days up to several weeks after trauma to the breast.

Your breasts hurt due to an unsupportive bra - Without proper support, the ligaments that connect breasts to the chest wall can become overstretched and painful by the end of the day. The result is achy, sore breasts. This may be especially noticeable during exercise. Make sure your bra is the correct size and provides good support.

Breast pain is really coming from your chest wall - What feels like breast pain may actually be coming from your chest wall. This is the area of muscle, tissue and bone that surrounds and protects your heart and lungs. Common causes of chest wall pain include: a pulled muscle; inflammation around the ribs; trauma to the chest wall (getting hit in the chest); bone fracture.

Breastfeeding is causing breast tenderness - Breastfeeding can sometimes be the source of breast pain. Some of the things you can experience while nursing include: painful nipples from an improper latch (the way a baby latches on to suck); tingling sensation during letdown (when the milk starts to flow to the baby); nipple soreness due to being bitten or having dry, cracked skin or an infection.

You have a breast infection - Breastfeeding women are most likely to get breast infections (mastitis), but they occasionally occur in other women, too. If you have a breast infection, you may have a fever and symptoms in one breast.

Breast pain could be a medication side effect - Some medications may cause breast pain as a side effect. Talk to your doctor about the medications you're on and if this could be the case for you.

You have a painful breast cyst - If a tender lump suddenly appears in your breast, you may have a cyst. These fluid-filled lumps aren't dangerous and often don't need to be treated as they may resolve on their own. But it's important to get any lump in your breast evaluated by a doctor.

You are experiencing painful complications from breast implants - Some women have complications with breast implants, whether made of silicone or saline. One of the most common causes of pain after breast augmentation surgery is capsular contracture, when scar tissue forms too tightly around implants. Breast pain can also be an indication that one of your implants has ruptured. Talk to your doctor about any pain you're having to determine if it could be related to the breast implants.

Breast pain can sometimes be a sign of breast cancer – It is unusual for breast cancer to cause pain, says Wright, but not impossible. Inflammatory breast cancer often causes pain but it is rare, accounting for 1% to 5% of breast cancer cases. Symptoms of this aggressive disease often come on suddenly and progress rapidly. (Johns Hopkins Medicine, 2026; Cleveland Clinic, 2024; National Breast Cancer Foundation, 2026.).

Doing a Breast Self-Examination (BSE)

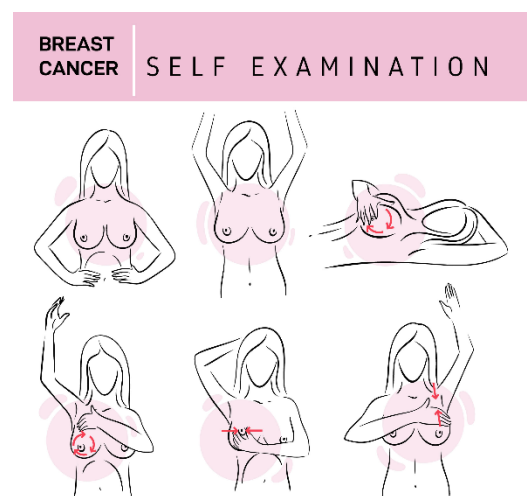
Breast self-examination (BSE) is to be performed each month in addition to any mammograms or a clinical breast examination. Knowing the cyclical changes, what is normal and what regular monthly changes in the breast feel like is the best way to keep an eye on breast health.

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.

Picture Credit: Breast Self-examination]



If you still get regular periods: Do the exam 3 to 7 days after your period ends (or a few days after it starts), when your breasts are least likely to be swollen, lumpy, or tender from hormonal shifts

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.

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 (Breast Cancer.Org, 2026; Marie Stopes South Africa, 2025; National Breast Cancer Foundation, 2026).

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.

Researched and Authored by Prof Michael C Herbst

[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Audiometry and Noise Measurement; Dip Genetic Counselling; Diagnostic Radiographer; Medical Ethicist]

Approved by Ms Elize Joubert, Chief Executive Officer (BA Social Work (cum laude); MA Social Work)

October 2026

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

The most common signs and symptoms of breast cancer in women include a new lump or thickening in the breast or armpit, changes in the skin or nipple, and unusual discharge.

Common Breast Changes and Lumps

- **Breast or underarm lump:** A hard, firm, or thickened area that feels different from the rest of the breast tissue and typically does not move easily.
- **Changes in size or shape:** Unexplained swelling, shrinkage, or asymmetry (one breast appearing larger or lower than usual).
- **Persistent pain:** While most breast cancers do not hurt, new, persistent, or non-cyclical pain in the breast or armpit can occasionally be a warning sign.

Skin Changes

- **Dimpling or puckering:** Indentations in the skin that can make the breast surface look like an orange peel (known as *peau d'orange*).
- **Colour or texture changes:** Redness, pinkness, purple or dark bruising discoloration, warmth, or swelling of the breast skin.
- **Flaking or scaling:** Dry, peeling, or crusty skin on the breast.

Nipple Symptoms

- **Nipple inversion:** A nipple that suddenly flattens, pulls back, or turns inward when it used to point outward.
- **Nipple discharge:** Spontaneous fluid coming from the nipple—especially if it is clear, bloody, or occurs in only one breast (excluding milk during pregnancy or breastfeeding).
- **Rashes or sores:** An itchy, scaly, or eczematous rash on the nipple or areola that does not heal with standard treatments (which can indicate Paget's disease).

Lymph Node Signs

Swollen lymph nodes: A lump or swelling in the armpit (axilla) or around the collarbone area.

Note: Many breast changes and lumps are benign (non-cancerous), such as cysts or fibrocystic changes, but any new or persistent symptom should be evaluated promptly by a healthcare provider.

(Susan G Komen, 2026; City of Hope, 2026; Breast Cancer Now, 2026).

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.

(Centers for Disease Control and Prevention, 2026; Breast Cancer Research Foundation, 2026; National Cancer Institute, 2025).

Types of Breast Cancer in Women

Breast cancer diagnosis begins with physical exams and screening tests like mammograms, breast ultrasounds, and MRIs to identify suspicious areas. If an anomaly is found, a biopsy—a tissue sample for lab analysis—is the only definitive way to confirm cancer. After diagnosis, additional tests will "stage" the cancer to determine if and where it has spread in the body, which helps guide treatment.

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.

Invasive Lobular Carcinoma

Invasive lobular breast cancer means that the cancer started in the cells that line the lobules and has spread into the surrounding breast tissue. The lobules are the glands that make milk when breastfeeding. Invasive lobular breast cancer is the second most common type of breast cancer. It is also known as invasive lobular carcinoma.

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.

(American Cancer Society, 2026; National Breast Cancer.Org, 2026; Breast Cancer Network Australia, 2026).

Special Tests

Mammography remains the gold standard for early breast cancer screening and detection because it is the primary imaging tool proven to reduce breast cancer mortality rates.

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. One will usually have two mammograms of each breast taken from different angles.

[Picture Credit: Mammogram]

The breast tissue needs to be compressed 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 denser (has less fat), which makes it difficult to detect any changes on the mammogram.

(Cleveland Clinic, 2026; Siemens Healthineers, No Date; Centers for Disease Control and Prevention, 2026).



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 2019 a total of 2 060+ 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
- Every woman with a close female relative diagnosed with breast cancer, should go for a mammogram 10 years earlier than the age at which the close relative was diagnosed with breast cancer
- 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.

“A cancer stage describes the extent of cancer in the body and whether the cancer has spread from where it first formed to other parts of the body. It is important to know the stage of breast cancer to plan your treatment and understand your prognosis. In breast cancer, stage is based on the size and

location of the primary tumour, the spread of cancer to nearby lymph nodes or other parts of the body, the grade of the tumour, and whether certain biomarkers are present.”
(National Cancer Institute, 2026; Cancer Research UK, 2026. National Breast Cancer.Org 2026).

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).

Robotic Surgery – A novel approach.

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.

(Mayo Clinic, 2026; Cancer Connect, 2025; UT MD Anderson, 2026).

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](https://pactr.samrc.ac.za/) 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: <https://pactr.samrc.ac.za/>

Summary for the Average Reader

Breast cancer is the most common cancer affecting women worldwide. It develops when abnormal cells in the breast grow uncontrollably, forming a tumour that may invade nearby tissues or spread (metastasize) to other parts of the body.

Key Facts

- Breast cancer is the most commonly diagnosed cancer among women globally. An estimated 2.4 million women were diagnosed worldwide in 2024.
- Approximately 97 to 99% of breast cancer cases occur in women.
- Early detection and modern treatments have significantly improved survival rates, especially when diagnosed at an early stage.

Risk Factors

Major risk factors include (in no particular order):

- Increasing age

Researched and Authored by Prof Michael C Herbst

[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Audiometry and Noise Measurement; Dip Genetic Counselling; Diagnostic Radiographer; Medical Ethicist]

Approved by Ms Elize Joubert, Chief Executive Officer (BA Social Work (cum laude); MA Social Work)

October 2026

- Female sex
- Family history of breast cancer
- Inherited gene mutations such as BRCA1 and BRCA2
- Obesity
- Alcohol consumption
- Previous chest radiation exposure
- Hormone replacement therapy after menopause
- Early menstruation or late menopause
- Physical inactivity

Importantly, about 80% of women diagnosed have no specific risk factors other than age and sex.

Common Symptoms

Early breast cancer may have **no symptoms**, which is why screening is important. Warning signs include:

- A new lump in the breast or armpit
- Thickening or swelling of breast tissue
- Changes in breast size or shape
- Skin dimpling or puckering
- Redness or scaling of the breast or nipple
- Nipple inversion
- Abnormal nipple discharge, including blood
- Persistent breast pain or discomfort

Types of Breast Cancer

Most Common Types

- Invasive Ductal Carcinoma (IDC): Accounts for about 70-80% of cases and begins in the milk ducts.
- Invasive Lobular Carcinoma (ILC): Begins in the milk-producing lobules and accounts for approximately 10-15% of cases.

Other Important Types

- Ductal Carcinoma In Situ (DCIS)
- Triple-Negative Breast Cancer (TNBC)
- HER2-Positive Breast Cancer
- Inflammatory Breast Cancer
- Paget Disease of the Breast

Diagnosis

Diagnosis typically involves:

1. Clinical breast examination
2. Mammography
3. Breast ultrasound
4. Breast MRI (selected cases)
5. Biopsy to confirm cancer and determine subtype

Staging

Breast cancer is staged from Stage 0 to Stage IV:

- Stage 0: Non-invasive cancer (in situ)
- Stages I-II: Early-stage disease
- Stage III: Locally advanced cancer
- Stage IV: Metastatic cancer that has spread to distant organs

Researched and Authored by Prof Michael C Herbst

[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Audiometry and Noise Measurement; Dip Genetic Counselling; Diagnostic Radiographer; Medical Ethicist]

Approved by Ms Elize Joubert, Chief Executive Officer (BA Social Work (cum laude); MA Social Work)

October 2026

Treatment Options

Treatment depends on the cancer's stage and biology and may include:

- Surgery (lumpectomy or mastectomy)
- Radiation therapy
- Chemotherapy
- Hormone (endocrine) therapy
- Targeted therapies (e.g., HER2-directed treatment)
- Immunotherapy for selected patients

Lowering the Risk and Early Detection

While not all breast cancers can be prevented, risk may be reduced by:

- Maintaining a healthy weight
- Exercising regularly
- Limiting alcohol intake
- Avoiding tobacco
- Participating in recommended mammography screening
- Considering genetic counselling if there is a strong family history

Prognosis

Prognosis is strongly influenced by the stage at diagnosis. Early-stage breast cancer has excellent treatment outcomes, while advanced cancer requires more intensive management. Early detection remains one of the most effective ways to improve survival.

Takeaway

Female breast cancer is a highly treatable disease when detected early. Advances in screening, molecular testing, targeted therapies, and personalized treatment have significantly improved survival and quality of life for millions of women worldwide.

(Microsoft Copilot AI Overview, 2026)

Medical Disclaimer

This Fact Sheet is intended to provide general information only and, as such, should not be considered as a substitute for advice, medically or otherwise, covering any specific situation. Users should seek appropriate advice before taking or refraining from taking any action in reliance on any information contained in this Fact Sheet. So far as permissible by law, the Cancer Association of South Africa (CANSA) does not accept any liability to any person (or his/her dependants/estate/ heirs) relating to the use of any information contained in this Fact Sheet.

Whilst CANSA has taken every precaution in compiling this Fact Sheet, neither it, nor any contributor(s) to this Fact Sheet can be held responsible for any action (or the lack thereof) taken by any person or organisation wherever they shall be based, as a result, direct or otherwise, of information contained in, or accessed through, this Fact Sheet.



References and Sources Consulted and Utilised

American Cancer Society. 2026. Types of Breast Cancer. <https://www.cancer.org/cancer/types/breast-cancer/types-of-breast-cancer.html>. Accessed on 20 October 2026.

Breast Cancer Network Australia. 2026. Types and subtypes of breast cancer. <https://www.bcna.org.au/resources/about-breast-cancer/types-and-subtypes-of-breast-cancer>. Accessed on 21 October 2026.

Breast Cancer Now. 2026. Signs and symptoms of breast cancer. <https://breastcancernow.org/about-breast-cancer/awareness/signs-and-symptoms-of-breast-cancer>. Accessed on 20 October 2026.

Breast Cancer.Org. 2026. Breast Cancer Risk Factors. <https://www.breastcancer.org/risk/risk-factors>. Accessed on 20 October 2026.

Breast Cancer.Org. 2026. Breast Self-Exam: Get to Know Your Breasts in 5 Steps. <https://www.breastcancer.org/screening-testing/breast-self-exam-bse>. Accessed on 21 October 2026.

Breast Cancer.Org. 2026. Breast Self-Exam: Get to Know Your Breasts in 5 Steps. <https://www.breastcancer.org/screening-testing/breast-self-exam-bse>. Accessed on 20 October 2026.

Breast Cancer Research Foundation. No Date. What Is BRCA1? About the BRCA1 Mutation and More. <https://www.bcrf.org/about-breast-cancer/brca1/>. Accessed o 20 October 2026.

Breast Cancer Research Foundation. 2026. Understanding Breast Cancer Diagnosis: Symptoms, Tests, and Early Detection. <https://www.bcrf.org/about-breast-cancer/understanding-breast-cancer-diagnosis/>. Accessed on 20 October 2026.

Breast Self-Examination

Pretoria East Breast Cancer Consortium. 2025. Self-Examination of Your Breasts. <https://pretoriabreastcancer.co.za/breast-health/breast-self-examination/>. Accessed on 21 October 2026.

Cancer Connect, 2025. Treatment & Management of Breast Cancer. <https://news.cancerconnect.com/overview-of-treatment-management-of-breast-cancer/>. Accessed on 21 October 2026.

Cancer Research UK. 2026. Stages and grades of breast cancer. <https://www.cancerresearchuk.org/about-cancer/breast-cancer/stages-grades>. Accessed on 21 October 2026.

Centers for Disease Control and Prevention (CDC). 2026. Breast Cancer Risk Factors. *Overview*. <https://www.cdc.gov/breast-cancer/risk-factors/index.html>. Accessed on 20 October 2026.

Centers for Disease Control and Prevention. 2026. Diagnosing Breast Cancer. <https://www.cdc.gov/breast-cancer/screening/diagnosis.html>. Accessed on 20 October 2026.

Centers for Disease Control and Prevention. 2026. Screening for Breast Cancer. <https://www.cdc.gov/breast-cancer/screening/index.html>. Accessed on 21 October 2026.

City of Hope. 2026. Signs and symptoms of breast cancer. <https://www.cancercenter.com/cancer-types/breast-cancer/symptoms>. Accessed on 20 October 2026.

Cleveland Clinic. 2023. Breast Anatomy. *What is the anatomy of the breasts?* <https://my.clevelandclinic.org/health/articles/8330-breast-anatomy>. Accessed on 20 October 2026.

Cleveland Clinic. 2024. Breast Pain (Mastalgia). <https://my.clevelandclinic.org/health/diseases/15469-breast-pain-mastalgia>. Accessed on 20 October 2026.

Cleveland Clinic. 2026. Mammogram. <https://my.clevelandclinic.org/health/diagnostics/4877-mammogram>. Accessed on 21 October 2026.

Everyday Health. 2026. What Is Breast Cancer? Symptoms, Causes, Diagnosis, Treatment, and Prevention. <https://www.everydayhealth.com/breast-cancer/guide/>. Accessed on 20 October 2026.

Female Breast Cancer

Everyday Health. 2026. What Is Breast Cancer? Symptoms, Causes, Diagnosis, Treatment, and Prevention. <https://www.everydayhealth.com/breast-cancer/guide/>. Accessed on 20 October 2026.

ICD10Data.Com. 2026. Malignant neoplasm of breast C50. https://www.icd10data.com/ICD10CM/Codes/C00-D49/C50-C50/C50-#google_vignette. Accessed on 20 October 2026.

Johns Hopkins Medicine. 2026. Breast Pain: 10 Reasons Your Breasts May Hurt. <https://www.hopkinsmedicine.org/health/conditions-and-diseases/breast-pain-10-reasons-your-breasts-may-hurt>. Accessed on 20 October 2026.

Kim, J. & Munster, P.N. 2025. Estrogens and breast cancer Ann Oncol. 2025 Feb;36(2):134-148. *PubMed*. <https://pubmed.ncbi.nlm.nih.gov/39522613/>. Accessed on 20 October 2026.

Marie Stopes South Africa. 2025. Know Your Body: A Simple Guide to Monthly Breast Self-Exams. <https://www.mariestopes.org.za/know-your-body-a-simple-guide-to-monthly-breast-self-exams/>. Accessed on 21 October 2026.

Mayo Clinic. 2026. Breast Cancer. *Overview*. <https://www.mayoclinic.org/diseases-conditions/breast-cancer/symptoms-causes/syc-20352470>. Accessed on 20 October 2026.

Mayo Clinic. 2026. Breast Cancer. *Treatment*. <https://www.mayoclinic.org/diseases-conditions/breast-cancer/diagnosis-treatment/drc-20352475>. Accessed on 21 October 2026.

Microsoft Copilot AI Overview. 2026. https://m365.cloud.microsoft/chat/conversation/22cd1163-237f-44c5-874d-e83db19bb54f?omkt=en-001&source=post_page. Accessed on 21 October 2026.

National Breast Cancer Foundation. 2026. BRCA: The Breast Cancer Gene. <https://www.nationalbreastcancer.org/what-is-brca/>. Accessed on 20 October 2026.

National Breast Cancer Foundation. 2026. Breast Pain. <https://www.nationalbreastcancer.org/breast-pain/>. Accessed on 20 October 2026.

National Breast Cancer Foundation. 2026. Breast Self-Exam. <https://www.nationalbreastcancer.org/breast-self-exam/>. Accessed on 21 October 2026.

National Breast Cancer.Org. 2026. Types of Breast Cancer. <https://www.nationalbreastcancer.org/types-of-breast-cancer/>. Accessed on 21 October 2026.

National Breast Cancer.Org. 2026. Breast Cancer Stages. <https://www.nationalbreastcancer.org/about-breast-cancer/breast-cancer-staging/>. Accessed on 21 October 2026.

National Cancer Institute. 2024. BRCA Gene Changes: Cancer Risk and Genetic Testing. <https://www.cancer.gov/about-cancer/causes-prevention/genetics/brca-fact-sheet>. Accessed on 20 October 2026.

National Cancer Institute. 2025. How Breast Cancer Is Diagnosed. <https://www.cancer.gov/types/breast/diagnosis>. Accessed on 20 October 2026.

National Cancer Institute. 2026. Stages of Breast Cancer. <https://www.cancer.gov/types/breast/stages>. Accessed on 21 October 2026.

National Cancer Registry, 2024. National Institute for Communicable Diseases (NICD). 2024. *National Cancer Registry*. <https://www.nicd.ac.za/centres/national-cancer-registry/>. Accessed on 20 October 2026.

SA Journal of Radiology. 2025. Female breast cancer trends: A South African perspective. <https://sajr.org.za/index.php/sajr/article/view/3117/3845>. Accessed on 20 October 2026.

Siemens Healthineers. No Date. Increased focus on breast density and its role in cancer screening. <https://www.siemens-healthineers.com/en-za/clinical-specialities/womens-health-information/dense-breasts>. Accessed on 21 October 2026.

Sing Health. 2026. Breast Self-Examination (BSE). <https://www.singhealth.com.sg/symptoms-treatments/breast-self-examination-bse>, Accessed on 20 October 2026.

South African National Clinical Trials Register. 2025. Welcome to SANCTR. <https://sanctr.samrc.ac.za/>. Accessed on 20 October 2026.

Surveillance, Epidemiology, and End Results Program at the National Cancer Institute. Anatomy of the Female Breast. Cited 19 October 2026. Available from: <https://training.seer.cancer.gov>.

Susan G Komen. 2026. Warning Signs of Breast Cancer. <https://www.komen.org/breast-cancer/signs-symptoms/warning-signs/>. Accessed on 20 October 2026.

TeachMeAnatomy. 2025. The Breasts. <https://teachmeanatomy.info/thorax/organs/breasts/>. Accessed on 20 October 2026.

World Health Organization. 2026. Breast cancer. *Overview, Key Facts*. <https://www.who.int/news-room/fact-sheets/detail/breast-cancer>. Accessed on 20 October 2026.

University of Texas MD Anderson Cancer Center. 2025. *Cancer Grade vs Cancer Stage*. <https://www.mdanderson.org/patients-family/diagnosis-treatment/a-new-diagnosis/cancer-grade-vs--cancer-stage.html>. Accessed on 20 October 2026.

UT MD Anderson. 2026. Breast Cancer. Treatment at UT MD Anderson. <https://www.mdanderson.org/cancer-types/breast-cancer.html>. Accessed on 21 October 2026.

Well Women Bone and Breast Care. 2026. How to perform a breast self-exam. <https://www.wellwomen.co.za/how-to-perform-a-breast-self-exam/>. Accessed on 20 October 2026.

Xiong, X., Zheng, L.W., Ding, Y., Chen, Y.F., Cai, Y.W., Wang, L.P., Huang, L., Liu, C.C., Shao, Z.M. & Yu, K.D. 2025. Breast cancer: pathogenesis and treatments. *Signal Transduct Target Ther.* 2025 Feb 19;10(1):49. *PubMed*. <https://pubmed.ncbi.nlm.nih.gov/39966355/>. Accessed on 20 October 2026.