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Jascap

FIGHTING CANCER – LIVING WITH IT

Understanding Early Breast Cancer
A Guide for Patients
and
Their Families

JASCAP is registered charitable trust provides to patients & their families, information on various aspects of cancer and its treatment, in different Indian languages, since 1996.

The information in this booklet can help cancer patients and their families to understand the disease and its treatment and thus cope with it better.

JASCAP is registered under the Societies Registration Act, 1860 No.1359/1996 G.B.B.S.D, Mumbai and under the Bombay Public Trusts Act 1950 No.18751 (Mumbai). Donations to JASCAP qualify for deduction u/s 80G(1) of the Income Tax Act 1961 vide Certificate No. DIT(E)/BC/80G/1383/96-97 dated 28.2.97 subsequently renewed.

To know more about the trust please log on to www.jascap.org

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This book is dedicated to patients
with early breast cancer and their
families for putting up a brave
battle against cancer.

FOREWORD

"What you need to know to make informed decisions"

Every person is touched by the reality of Breast cancer - some by fear of it and some by the fact of it. A diagnosis of breast cancer, therefore, is among the most frightening moment in a person's life - so overwhelming that formulating questions for doctors may seem difficult.

Today, breast cancer is on the rise in cities and midsize towns mainly because of late birth of first child, shortened period of breast feeding and obesity, a preventable modern day affliction.

It is important for women in India therefore, to get educated about the disease; its preventive aspects, early detection and its Management.

***'Understanding early breast cancer - a guide for patients and their families'**, a publication by JASCAP (a charity organization that has been dedicated to servicing the information, financial and psychosocial needs of cancer patients) is a pertinent step towards education.*

I am sure this will go a long way in removing the myths and fear about breast cancer and help patients and their caregivers in informed decision making.

I take this opportunity to wish JASCAP, the very best in its noble endeavour and more importantly, my best wishes to all the patients of breast cancer and their families for a very speedy recovery towards normal life and strength to care givers to expand their healing hands!

R. A. BADWE
DIRECTOR - TATA MEMORIAL CENTRE

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EARLY BREAST CANCER

1. About breast cancer in women

Introduction

This booklet is about breast cancer in women. It is written not only for the women who have been diagnosed with early breast cancer but also for those who are having tests for breast cancer.

We hope it answers your questions and helps you deal with some of the concerns/feelings you may have. We can't advise you about the best treatment for you. This information can only come from your own doctor, who knows your full medical history.

This information is about breast cancer that has not spread to other parts of the body. Breast cancer that has spread to other parts of the body is called Metastatic breast cancer. We have a separate booklet understanding metastatic breast cancer.

Rarely, men get breast cancer. There is a separate information booklet "Understanding breast cancer in men" which is about early and advanced breast cancer in men.

How common is the breast cancer in India?

Breast cancer is the most common cancer for women from the Indian subcontinent. Though breast cancer typically occurs in women, it can also occur in men although with much lesser frequency. The incidence (newly diagnosed cases of cancer in a year) of breast cancer for women from India is about 25-32 women per 1,00,000 healthy women and in USA, it is 125 women per 1,00,000 healthy women.

According to data from the Indian Council of Medical Research (ICMR), the estimated number of breast cancer cases in India was around 1,62,468 in 2020. This number is projected to continue rising in the coming years.

In India, between the years 2001-2003, across five urban centres - Mumbai, Delhi, Chennai, Bhopal and Bangalore, - and one rural centre - Barshi, a total of 202 cases of breast cancer were registered (0.46% of all cancers) for males across all age groups; while 11,502 cases of breast cancer were registered (25.9% of all cancers) for females across all age groups.

At the Tata Memorial Hospital (T.M.H) in Mumbai, India, in the year 2022, total of 5315 cases of breast cancer were registered, out of which 2077 patients underwent surgeries (all procedures included). Perioperative chemotherapy was administered to 3056 patients and palliative chemotherapy to 1304 patients. Total patients treated with RT were 2295.

2. The breasts and breast cancer

What is cancer?

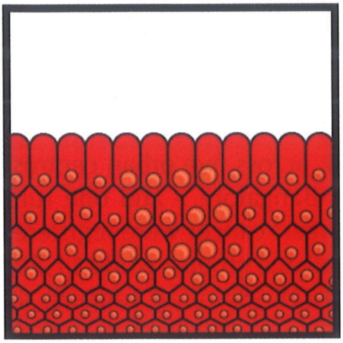
Cancer starts in cells in our body. Cells are tiny building blocks that make up the organs and tissues of our bodies. They divide to make new cells in a controlled way. This is how our bodies grow, heal and repair.

Cells receive signals from the body telling them when to divide and grow and when to stop growing. When a cell is no longer needed or can't be repaired, it gets a signal to stop working and die.

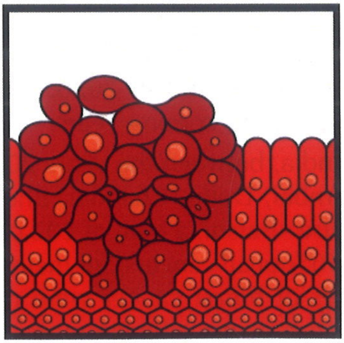
Cancer develops when the normal workings of a cell go wrong and the cell becomes abnormal. The abnormal cell keeps dividing making more and more abnormal cells. These eventually form a lump (tumour).

Not all lumps are cancerous. Doctors can tell if a lump is cancerous by removing a small sample of tissue or cells from it. This is called a biopsy. The doctors examine the sample under a microscope to look for cancer cells.

Normal Cells



Cells forming a tumour



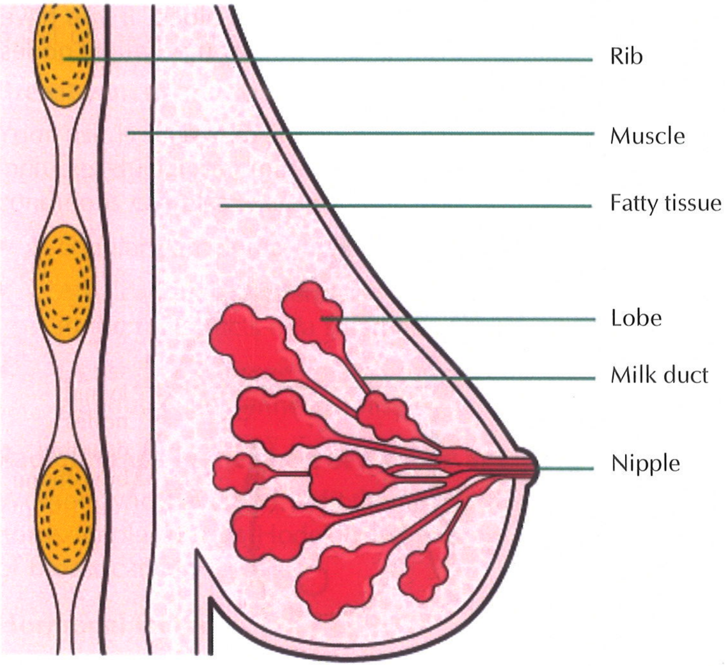
A lump that is not cancerous **(benign)** may grow but cannot spread to anywhere else in the body. It usually only causes problems if it exerts pressure on nearby organs.

A lump that is cancer **(malignant)** can grow into nearby tissue. Sometimes, cancer cells spread from where the cancer first started (the primary site) to other parts of the body. They can travel through the blood or lymphatic system.

When the cells reach another part of the body, they may begin to grow and form another tumour. This is called **a secondary cancer or a metastasis.**

The breasts

breasts are made up of fat, supportive (connective) tissue and glandular tissue containing lobes. The lobes (milk glands) are where breast milk is made. They connect to the nipple by a network of fine tubes called milk ducts.



Side view of the breast.

It's common for a woman's breasts to be of different size or shape from each other. They also feel different at different times of the month due to hormonal changes. For example, just before a woman's period, her breasts may feel lumpy. Therefore, monthly self breast examination should be done in similar time each month, otherwise normal periodic variation may be perceived as abnormal. As a woman gets older, her breasts may become smaller and feel softer.

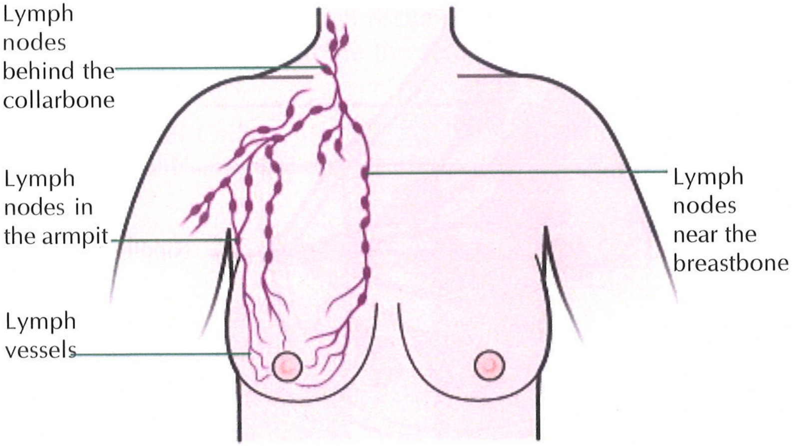
The lymphatic system

The lymphatic system helps to protect us from infection and disease. It is made up of fine tubes called lymphatic vessels.

These connect to groups of bean-shaped lymph nodes (sometimes called lymph glands) all over the body.

The lymph nodes filter bacteria (germs) and disease from a liquid called lymph, which travels around the body in the lymphatic system.

Once the lymph is filtered, it is returned to the blood. If you have an infection, for example even a sore throat, the lymph nodes nearby often swell while they fight it.



The lymph nodes near the breasts.

Sometimes, cancer can spread through the lymphatic system. If the cancer cells spread outside the breast, they are most likely to go to lymph nodes in the armpit. You will usually have tests on the lymph nodes to look for cancer cells. There are also lymph nodes near the breastbone, in the neck and behind the collarbone.

Risk factors and causes

The exact cause of breast cancer is unknown and is actually multifactorial. But certain attributes or characteristics called risk factors can increase a woman's chances of developing it. You should understand that, merely having one or more risk factors doesn't mean you will definitely get cancer. Similarly, absence of risk factors doesn't mean you won't get breast cancer.

Breast cancer is likely to be caused by a combination of different risk factors rather than just one.

Age

The strongest risk factor for breast cancer is increasing age. About 8 out of 10 women diagnosed (80%) are over 50.

Breast cancer and some breast conditions

Your risk is increased if you have had breast cancer before. This includes ductal carcinoma in situ. Having the following breast conditions can also increase your risk:

- Lobular carcinoma in situ (LCIS)
- Atypical ductal hyperplasia - there are slightly abnormal cells in the milk ducts in a small area of the breast.
- Dense breast tissue - when the breast is mostly made up of glandular and connective tissue and has very little fatty tissue.

Radiotherapy to the chest at a young age

Women who have had radiotherapy to the chest at an early age (for example to treat Hodgkin lymphoma) have an increased risk of breast cancer.

Hormonal factors

The female hormones estrogen and progesterone can affect your breast cancer risk. Factors that can increase your risk include:

- Taking hormone replacement therapy (HRT) - this can increase your risk, particularly if you're taking combined HRT (estrogen and progesterone). When you stop taking HRT, your risk reduces again.
- Starting your periods early (under the age of 12) or having a late menopause (after the age of 50).
- Not having children or having them at a late age.
- Not having breastfed or breastfeeding for less than a year in total.
- Taking the contraceptive pill in those less than 35 years mildly increases risk (<1%), although the risk reduces if you stop taking it.

Life-style factors

The following life-style factors may slightly increase your breast cancer risk:

Alcohol

Drinking alcohol increases your risk of developing breast cancer. The increase in risk is small for women who drink within the recommended guidelines.

Body weight

The risk of breast cancer is higher in women who are overweight, particularly after the menopause. Higher BMI is protective for breast cancer if you are menstruating, however higher BMI increases risk of breast cancer in those who have attained menopause. This is because it may change hormone levels in the body. A waist to hip ratio of >0.95 is the strongest risk factor.

Lack of Physical Activity

Leading a sedentary lifestyle and not engaging in regular physical activity may contribute to an increased risk.

Smoking

Smoking may cause a slight increase in breast cancer risk. The younger you are when you start smoking and the longer you smoke for, the greater the risk.

Diabetes Mellitus

Having Diabetes for more than 20 years in post menopausal women increases risk of breast cancer.

Family history and risk

Most women who get breast cancer don't have a family history of it. If you have just one female relative who has been diagnosed with breast cancer over the age of 40, your risk is unlikely to be very different from other women the same age as you.

But, sometimes breast cancer can run in families.

In general, the chance of there being a family link is greater when:

- a number of family members have been diagnosed with breast cancer or related cancers, such as ovarian cancer
- the family members are closely related
- they were diagnosed at a younger age.

5% of breast cancers are thought to be caused by a change (alteration) in a gene running through the family. In hereditary breast cancer, BRCA1 and BRCA2 are the two genes most often found to have changes in them.

Symptoms of breast cancer

Some of the signs and symptoms of early breast cancer include:

- a lump in the breast
- a change in the size or shape of the breast
- dimpling of the skin or thickening in the breast tissue
- new onset turning in of the nipple (nipple inversion)
- a rash (like eczema) on the nipple
- discharge from the nipple
- swelling or a lump in the armpit.
- Pain or discomfort in the breast that doesn't go away (however majority (85%) of breast cancer lumps to begin with are painless)

A painless lump in the breast is the most common symptom of breast cancer.

Most breast lumps are not cancer. They are usually fluid-filled lumps (cysts) or a fibroadenoma, made up of fibrous and glandular tissue.

But it is important to get anything that is unusual for you checked by your doctor. The earlier breast cancer is treated, the more is the chance that it can be removed completely from the body (that is cured).

3. Diagnosing breast cancer

How breast cancer is diagnosed

You usually start by seeing your doctor, who will examine you and refer you to a breast clinic to see a specialist. It is important to consult your doctor immediately when you feel a lump in your breast.

At the breast clinic

At the clinic, you'll see a specialist breast doctor.

You will be usually asked if you've had any other breast problems or if anyone in your family has had breast cancer.

The doctor will examine your breast, and the lymph nodes in your armpits and around your neck. After this, they'll explain which tests you need.

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.

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's painful for a short time. As it is common to have tenderness and pain in the breasts just before your period, this particular time may be avoided to get a mammogram.

Mammograms are usually only used for women aged above 40 years of age. In younger women, the breast tissue is more dense (has less fat), which makes it difficult to detect any changes on the mammogram.Women under 35 are usually offered an ultrasound of the breast along with 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.

You'll be asked to take off your top and bra, and lie down on a couch with your arm above your head. The person doing the scan puts a gel on to your breast and moves a small hand-held device around the area. A picture of the inside of the breast shows up on a screen. An ultrasound only takes a few minutes and is painless.

Ultrasound of the lymph nodes

You'll 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 insert a fine needle into the nodes under local anesthesia (locally injecting a drug to numb the area) to aspirate some material from the node and send it for examination under microscope to see if there are cancer cells in the nodes.

Breast biopsy

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

There are different ways of taking a biopsy depending on the size and location of the lump in the breast including fine needle aspiration (using a very fine needle), core biopsy (using a larger needle), and excision biopsy (a small surgical procedure to remove the lump). Your doctor or nurse will explain the type you will have.

For a few days after the biopsy, your breast may feel sore and bruised. Taking painkillers will help with this and any bruising will go away in about 10-15 days.

Sometimes the surgeon leaves a tiny metal marker clip in place, which is permanent. The clip shows up in mammograms and marks the area where the biopsy was taken. This helps the surgeon find the exact area if you need to have more breast tissue removed later on. The clip doesn't cause you any harm or discomfort.

Further tests for breast cancer

If the biopsy results show there are breast cancer cells, you may need more tests before you can start your treatment. Some of these tests include imaging studies which are needed to determine whether the lump is small and well localized so that just the lump can be removed surgically leaving the normal breast tissue behind or it has extended more into the breast tissue requiring removal of the entire breast and also scans to see if the cancer has spread to other parts of the body including bones.

MRI (magnetic resonance imaging) scan

An MRI scan uses magnetism to build up cross-sectional pictures of your body. If you have invasive cancer, it may be done to find out the size of the cancer and help doctors decide which operation you should have. The scan is painless and takes about 30 minutes.

The scanner is a powerful magnet, so you'll be asked to remove any metal belongings, including jewelry, before entering the scanning room. If you have any metal implants or have worked with metal or in the metal industry, tell your doctor.

Before the scan, you may be given an injection of a dye to help make the picture clearer. For a few minutes, this may make you feel warm all over. If you're allergic to iodine or have asthma, you could have a more serious reaction to the injection, so let your doctor know about this beforehand. You'll be asked to lie very still on a couch, inside a metal cylinder. The scan is noisy, so you'll be given earplugs or headphones.

Blood tests

You'll have blood taken to check your general health and how well your kidneys and liver are working. This is necessary to determine your fitness for surgery as well as chemotherapy if needed.

Waiting for test results

Waiting for test results can be a difficult time. It may take from a few days to a couple of weeks for the results of your tests to be ready. You may find it helpful to talk with your partner, family or a close friend.

Other tests

Some women may have other tests to check if the cancer has spread to other parts of the body. You may hear these referred to as staging scans.

Bone scan

This test shows up abnormal areas of bone. You have a small amount of a mildly radioactive substance injected into a vein. You wait for 2-3 hours after the injection before you have the scan, which may take an hour. Abnormal bone absorbs more radioactivity than normal bone and shows up on the scan pictures. Sometimes you may need a more detailed scan such as a CT scan.

CT (computerized tomography) scan

A CT scan takes a series of x-rays, which build up a three-dimensional picture of the inside of the body. The scan takes 10-30 minutes and is painless. It uses a small amount of radiation, which is very unlikely to harm you and will not harm anyone you come into contact with. You will be asked not to eat or drink for at least four hours before the scan.

You may be given a drink or injection of a dye, which allows particular areas to be seen more clearly. This may make you feel hot all over for a few minutes. It's important to let your doctor know if you are allergic to iodine or have asthma, because you could have a more serious reaction to the injection.

You'll probably be able to go home as soon as the scan is over.

PET-CT scan

This is a combination of a CT scan, which takes a series of x-rays to build up a three-dimensional picture, and a positron emission tomography (PET) scan. A PET scan uses low-dose radiation to measure the activity of cells in different parts of the body. PET-CT scans give more detailed information about the part of the body being scanned. You may have to travel to a specialist centre to have one. You can't eat for six hours before the scan, although you may be able to drink.

A mildly radioactive substance is injected into a vein, usually in your arm. The radiation dose used is very small. The scan is done after at least an hour's wait. It usually takes 30-90 minutes. You should be able to go home after the scan.

It is not essential to do this scan in all cases and is used in selective cases as per need.

Types of breast cancer

There are different types of breast cancer. Knowing the type you have allows your doctor to plan the best treatment for you.

Ductal carcinoma in situ (DCIS) is the earliest form of breast cancer and we have a separate booklet about DCIS. DCIS is when there are cancer cells in the ducts of the breast. But these cells are contained (in situ) and have not spread into normal breast tissue. DCIS may show on a mammogram and is usually diagnosed when women have breast screening.

Lobular carcinoma in situ (LCIS) is not breast cancer, although it's name can be misleading. There are changes in the cells lining the lobes that show a woman has an increased risk of developing breast cancer later in life. But most women with LCIS don't get breast cancer. They have regular checkups with breast examinations and mammograms. We have a fact sheet about LCIS that we can give you.

Invasive breast cancer

Invasive breast cancer means the cancer cells have spread outside the lining of the ducts or lobes into the surrounding breast tissue.

Invasive ductal breast cancer

Most invasive breast cancers (80%) start in the ducts of the breast.

As the name suggests, it starts in the milk ducts of the breast and then invades and spreads into surrounding breast tissue.

Invasive lobular breast cancer

About 1 in 10 invasive breast cancers (10%) start in the lobes of the breast. This type can sometimes be difficult to diagnose on a mammogram because of the way it grows.

The pathology doctors, test the cancer cells to help your treating doctor decide which treatments are best for you. They look at whether the cells have receptors (proteins) for hormones like estrogen, progesterone or a protein called HER2 (HER2 positive breast cancer).

Breast cancer that has no receptors is called triple negative breast cancer.

Uncommon types of breast cancer

Inflammatory breast cancer

This is when cancer cells grow along and block the tiny channels (lymph vessels) in the skin of the breast. The breast then becomes inflamed and swollen.

Paget's disease of the breast

This shows as a red, scaly rash (like eczema) on the skin of the nipple. Women with Paget's disease may have DCIS or invasive breast cancer.

Staging and grading

Staging

The stage of a cancer describes its size and if it has spread from where it started. This information affects the decisions you and your doctor make about your treatment . They won't know the exact stage of the cancer until after your operation.

TNM staging

The TNM staging system gives the complete stage of the cancer:

- T describes the size of the tumour.
- N describes whether the cancer has spread to the lymph nodes and which nodes are involved. For example, N0 is no lymph nodes affected while N1 means there are cancer cells in 1-3 of the lymph nodes.
- M describes if the cancer has spread to another part of the body. For example, M0 means the cancer has not spread (metastasised) to other parts of the body.

The number stage

Breast cancer can also be divided into four number stages. We have put these into a table to make them easier to understand.

This booklet is about stage 1 to 3 breast cancer.

Stage 1 or 2 breast cancer is often called 'early breast cancer'	
Stage 1	The cancer (lump) is 2cm or smaller and has not spread to the lymph nodes in the armpit.
Stage 2 is divided into two stages	
Stage 2A	The cancer is smaller than 2cm and has spread to 1-3 lymph nodes in the armpit. or The cancer is bigger than 2cm and has not spread to the lymph nodes. or The cancer can't be found in the breast but is in the lymph nodes close to the breast.
Stage 2B	The cancer is smaller than 5cm and has spread to 1-3 lymph nodes in the armpit. or The cancer is bigger than 5cm but has not spread to the lymph nodes.
Stage 3 is divided into three stages. Stage 3 breast cancer is sometimes called 'locally advanced' breast cancer.	
Stage 3A	The cancer is bigger than 5 cm and has spread to 4-9 lymph nodes in the arm pit. Or Cancer has spread to lymph nodes near the breastbone.
Stage 3B	The cancer has spread to tissue near the breast. It may be attached to skin or muscles and has usually spread to the lymph nodes in the armpit.
Stage 3C	The cancer has spread to 10 or more lymph nodes: In the armpit or below the breast bone, near or under the collar bone.

Stage 4 breast cancer is also called 'secondary' or 'metastatic' breast cancer.	
Stage 4	The cancer has spread to other parts of the body such as the bones, liver or lungs.

If you have stage 4 breast cancer, you may find our booklet "Understanding metastatic breast cancer" helpful.

Grading

The grade of a cancer gives an idea of how quickly it might grow. The grade is decided based on what the cancer cells look like under a microscope compared with normal cells. Knowing the grade helps your doctor decide which other treatments you may need after surgery.

Grade 1 or low-grade

The cancer cells look similar to normal cells (are well differentiated) and usually grow slowly. The cancer cells are less likely to spread.

Grade 2 or moderate- or intermediate-grade

The cancer cells look more abnormal and grow slightly faster than grade 1 cells.

Grade 3 or high-grade

The cancer cells look very different from normal cells (are poorly differentiated) and may grow quicker than grade 1 or 2 cells.

Receptors

Breast cancer cells may have receptors (proteins) that hormones or other proteins can attach to and encourage the cancer to grow. A pathologist will test the cancer cells to find out if they have receptors and what type they are.

The results help you and your doctor to decide on the most effective treatment for you.

Hormone receptors

Breast cancers with receptors for the hormone estrogen are called estrogen-receptor positive (ER positive) breast cancer. About 70% of breast cancers are ER positive. Hormonal therapies work well for ER positive breast cancer.

Estrogen-receptor negative (ER negative) breast cancers don't have hormone receptors.

Breast cancer cells may also have receptors for the hormone progesterone (PR). This may be called PR positive breast cancer.

Protein receptors

Some breast cancers have high numbers of receptors for the protein HER2 (human epidermal growth factor 2). They are called HER2 positive breast cancers. About 1 in 7 women (15%) with early breast cancer have HER2 positive cancer. A drug called trastuzumab is an important treatment for this type of breast cancer.

Triple negative breast cancer

Cancer that does not have receptors for either HER2 or the hormones estrogen and progesterone is called triple negative breast cancer. It affects up to 1 in 5 women (15 to 20%) with breast cancer and is more common in younger women. It is more common in Asian countries including India.

4. Treating early breast cancer

This section describes treatments for early breast cancer, including when they are used, how they are given, and possible side effects.

Treatment overview

For most women, the first treatment for early breast cancer is surgery to remove it. You will usually have additional treatments to reduce the risk of the cancer coming back. This is called adjuvant treatment.

These treatments may include radiotherapy, hormonal therapy, chemotherapy and targeted therapy with trastuzumab.

Your doctor will explain the treatments they think are best for you.

The sequence of these treatments will be based on your tumor size, choice of surgery and stage of presentation.

They will ask about your preferences, explain options available and can help you if you need to make decisions about treatment.

Surgery

Surgery is one of the main treatments for early breast cancer. Your surgeon may advise you to have either one of the following operations:

- Breast-conserving surgery - an operation to remove the cancer and some surrounding normal breast tissue.
- A mastectomy - an operation to remove the whole breast.

With both operations, you will usually need some or all of the lymph nodes in your armpit removed. Some women also have breast reconstruction at the same time as surgery. Reconstruction can also be done at a later time for those who have complete removal of the breast.

Adjuvant treatments

You are likely to be offered one or more of the following treatments after surgery to reduce the risk of the cancer coming back.

Radiotherapy

After breast-conserving surgery, almost all women are advised to take a course of radiotherapy to the operated breast. Even after mastectomy, many women need radiotherapy to the chest. Some women are also advised radiotherapy to the lymph nodes areas in the lower neck and sometimes in the armpit or inside the chest. Radiotherapy is given to reduce the risk of the cancer coming back in the treated areas. The details of radiotherapy are described later.

Chemotherapy

If the cancer is large, is in the lymph nodes or is grade 3, your doctor will usually talk to you about having chemotherapy. Women who are younger, with triple negative or HER2 positive breast cancer are also likely to have chemotherapy.

Hormonal therapy

If the cancer is estrogen-receptor positive, your doctor will ask you to take hormonal therapy for a number of years.

Targeted therapy

If you have HER2 positive breast cancer, you'll usually have treatment with trastuzumab and chemotherapy.

How treatment is planned

A team of specialists will meet to discuss and decide on the best treatment for you. This multi-disciplinary team (MDT) will include:

- a **surgeon,** who specializes in breast surgery and may also specialize in breast reconstruction
- a **plastic surgeon,** who specializes in breast reconstruction
- a **medical oncologist,** who specializes in chemotherapy, hormonal therapy and targeted therapy
- a **radiation oncologist** who specializes in radiation therapy
- a **radiologist**, who analyses x-rays and scans
- a **pathologist,** who advises on the type and extent of the cancer.

It may also include other health care professionals, such physiotherapist, psychologist, social worker or counselor.

Your cancer team looks at different factors to help decide which treatments are likely to work best for you.

These include:

- the stage and grade of the cancer
- if the cancer cells have hormone (estrogen) receptors or HER2 receptors.

They will also assess the chance of your cancer coming back when planning how much treatment to offer you.

After the MDT meeting, your cancer specialist will talk to you about the best treatment for your situation.

They may sometimes use an on-line tool (computer program) to predict your response to therapy, which can help to show how much having a treatment like chemotherapy will reduce the chance of your cancer coming back. You might find this helpful, especially if your doctor has asked you to make a decision about having chemotherapy.

Gene expression tests

Doctors sometimes recommend the use of a gene expression test (called Mammaprint or Oncotype DX) or any other for women with ER positive cancer that hasn't spread to the lymph nodes. This test provides more information about the risk of early breast cancer coming back.

The results can help women and their doctors make a more informed decision about whether or not to have chemotherapy after surgery. If the results show a low risk of the cancer coming back, it means you can avoid unnecessary chemotherapy and side effects.

Ask your cancer specialist or specialist nurse if you would benefit from this test. These tests may be covered by some private health insurance companies.

Fertility

Some treatments for breast cancer can affect your fertility. This may be temporary but for some women it can be permanent. Before treatment starts, your doctors and nurses will talk to you about this. If any of the treatments you are having could affect your fertility, they will explain what may be done to help preserve it. If your family is complete, the effect of chemotherapy on fertility may not be of concern to you but if your family is not complete and you wish to have kids in the future, you may go for options like embryo preservation and oocyte preservation depending on the availability of these facilities in the city where you are undergoing treatment but it should be kept in mind that its not advisable to delay therapy for long for these procedures. You can also be given some hormonal injections like leuprolide and goserelin for fertility preservation. These injections ideally have to be started at least 1 week prior to the first dose of chemotherapy and have to be continued at definite time intervals through out the chemotherapy.

Giving your consent

Before you have any treatment, your doctor will explain its aims. They will ask you to sign a form saying that you give permission (consent) for the hospital staff to give you the treatment.

No medical treatment can be given without your consent. Before you are asked to sign the form, you should be given full information about:

- the type and extent of the treatment
- its advantages and disadvantages
- any significant risks or side effects
- any other treatments that may be available.

If you don't understand what you've been told, let the staff know straight away, so they can explain again. Some cancer treatments are complex, so it's not unusual to need repeated explanations.

It's a good idea to have a relative or friend with you when the treatment is explained, to help you remember the discussion.

You may also find it useful to write a list of questions before your appointment.

You can always ask for more time if you feel that you can't make a decision when your treatment is first explained to you.

If you are having fear or concerns about taking treatment, it's essential to tell a doctor in charge and staff about these concerns so they can give you the best advice.

Second opinion

In the event you desire another medical opinion, you can ask your specialist to refer you to another specialist for an opinion. Getting a second opinion may delay the start of your treatment, so you and your doctor need to be confident that it will give you useful information. If you do go for a second opinion, it may be a good idea to take a relative or friend with you, and have a list of questions ready; so that you can make sure your concerns are covered during the discussion.

Surgery

Surgery is one of the main treatments for early breast cancer. The operation you have depends on:

- the size of the cancer
- the position of the cancer
- patient's preference.
- presence of microcalcifications

Your surgeon will talk to you about your options. You may be asked to decide which operation you have. Depending on what is suitable for you, either a modified radical mastectomy (with or without reconstruction) or breast conserving surgery will be offered.

Breast-conserving surgery, involves removal of the tumor with a small rim of normal tissue, and axillary surgery. This keeps as much of the breast tissue and the shape of the breast as possible.

A modified radical mastectomy, involves complete removal of the breast (in some select situations the nipple areola complex can be preserved.) after removal of the breast immediate reconstruction can be done. Your surgery will also include removing some or all of the lymph nodes in your armpit.

Some women have hormonal therapy or chemotherapy before their operation. The aim is to reduce the size of the cancer to avoid a mastectomy. This is called neo-adjuvant therapy.

Wide local excision with axillary surgery (breast-conserving surgery, BCS)

The surgeon removes only the cancer and some of the normal looking tissue around it (the margin), [wide local excision (WLE)] and lymph nodes in the axilla.

In early breast cancer, having a BCS with radiotherapy is as effective as a mastectomy. Having radiotherapy after a BCS reduces the risk of the cancer coming back in the breast.

If the cancer is not palpable and only seen on imaging, you may need a fine wire or marking on skin done by sonography to mark the lesion prior to surgery. This is mammographic wire localization or sonograhic localization.

Some women need to have a larger area of breast tissue removed and will need plastic surgery techniques to be used to re-create the shape of the breast. They may reshape the breast by moving the breast tissue around. This is a type of oncoplasty. Occasionally, they take tissue from somewhere else in the body to help reshape the breast.

They may suggest you have the other breast reduced at the same time or later so both breasts are the same size.

Our booklet: "**Breast reconstruction**" has information for women having breast-conserving surgery and surgery to reshape the breast.

Clear margins

After breast-conserving surgery, the pathologist examines the tissue in the area (margin) around the cancer. If there are cancerous or pre-cancerous cells (DCIS) at the edges, you will need another operation to remove more tissue. Making sure the margins are clear reduces the risk of the cancer coming back in the breast. If your surgeon doesn't think another breast-conserving operation is likely to be successful, they usually recommend a mastectomy.

Removing the breast (modified radical mastectomy)

Breast surgeons will usually try to conserve a woman's breast whenever possible. But there are situations when they may recommend a modified radical mastectomy for oncological reasons cited below.

- The lump is large in proportion to the rest of your breast and you are not a candidate for neo adjuvant therapy, or it continues to be large despite neoadjuvant therapy. Also if you are not keen on additional reconstructive procedures.
- There are more than one lesion in more than one part of the breast i.e.: multicentricity
- There is widespread DCIS in the breast.
- You cannot have radiotherapy to the breast for some reason, e.g. previously received, collagen vascular diseases etc.

Breast reconstruction

If you are having a mastectomy, your surgeon will usually ask if you want a new breast shape made at the same time (immediate breast reconstruction). You can also choose to delay reconstruction until after you've completed treatments such as radiotherapy and chemotherapy.

If you're not having immediate reconstruction but think you might want to have breast reconstruction in the future, it's a good idea to mention this before you have a mastectomy. You don't have to make a definite decision at this stage, but it will help the surgeon to plan your initial surgery.

Breast reconstruction is specialized surgery carried out by a plastic surgeon or oncoplastic surgeon (experts in breast cancer surgery and reconstruction). There are different methods of reconstruction. A new breast shape can be made using tissue from your back or lower abdomen or a silicone implant or with fat.

Treatment decisions

Making treatment decisions can be difficult. It's important to talk it over carefully with your surgeon. Make sure you take your time and have the information you need to make the right decision for you. You may also want to talk it over with someone close to you, such as a partner, family or friends.

Breast-conserving surgery and radiotherapy

Advantages

- It keeps the appearance of the breast.
- It may be less likely to affect your sex life and relationships.

Disadvantages

- You may need more than one operation to get clear margins.
- You will need radiotherapy after the surgery (some women will need radiotherapy after a mastectomy).
- Radiotherapy has short-term side effects, and some women may have long-term side effects.
- The changes in the skin post surgery and radiation (odema / swelling and sensation) may not give the feel of a normal breast.

Mastectomy

Advantages

- You may not need radiotherapy. However, some women will need it after a mastectomy, so ask your cancer specialist about this.

Disadvantages

- You lose your breast permanently, though reconstruction can give you the appearance of a mound to match size.
- It changes your appearance, which may affect your confidence.
- You will need a longer operation and possibly further surgery if you want breast reconstruction afterwards. However, reconstruction may help to reduce disadvantages for some women.

Surgery to the lymph nodes

Your surgeon may remove some or all of the lymph nodes in your armpit to check them for cancer cells.

This serves two purposes:

- It gets rid of any cancerous lymph nodes (you may need more treatment if only some nodes were removed).
- It gives information about the stage of the cancer, which helps when making decisions about having other treatments.

There are different types of lymph node surgery.

Sentinel lymph node biopsy (SLNB)

A sentinel lymph node biopsy is a way of checking lymph nodes in the armpit. SLNB isn't suitable for everyone. It may be done if:

- you had a small cancer
- the ultrasound of your armpit was normal and did not show any suspicious lymph nodes.

Dye is injected, one prior to surgery, one at the time of surgery. The dye helps to identify a few lymph nodes which are excised and tested for presence or absence of cancer cells. The lymph nodes that are the most likely to have cancer cells are called the sentinel lymph nodes. These are the first ones that lymph fluid drains to from the breast. If there are no cancer cells in the sentinel nodes you won't need surgery to remove more lymph nodes. The nodes are tested in frozen section, if positive then the rest of the lymph nodes in that area are removed. On a few occasions if the cancer cells are identified only on the final report in the sentinel lymph node you may be offered another operation to remove the remaining lymph nodes.

Removing only a small number of lymph nodes reduces the risk of side effects that can occur after lymph node surgery. These include swelling of the arm known as lymphoedema and stiffness of the arm.

Axillary sampling: another method to excise a few nodes for testing is axillary sampling. This method does not require the use of any dye. The surgeon identifies the low level lymph nodes in the axilla.

Removing all the lymph nodes

In some cases, the surgeon will recommend removing all the lymph nodes in the armpit. This is called an axillary lymph node dissection (ALND). It aims to get rid of any nodes that contain cancer cells. An ALND is usually done when:

- there are cancer cells in the lymph nodes
- the SLNB or sampling shows there are cancer cells in the nodes.

There is a slight increased risk of developing swelling of the arm called lymphoedema after having an ALND.

Before your operation

Before your operation, you will be seen at a pre-assessment clinic for fitness for anesthesia.

You may have tests to check your general health. These can include blood tests, a urine check, chest x-ray or a recording of your heart (ECG).

Most women who have breast cancer surgery can go home the following day. But, if you a reconstruction procedure you may be in hospital for longer (1-5 days). This will depend on the type of reconstruction operation you have.

You will usually come into hospital on the day prior to your operation.

After your operation

You will be encouraged to start arm exercises the next morning and be mobile as soon as possible after surgery.

Your wound

You'll have a dressing covering your wound, which will be removed the next day and you will be taught to keep the wound clean. The nurses will let you know how to look after it before you go home.

How long it takes to heal depends on the operation you had. If you only had a small area of tissue removed, your wound will usually heal quickly. If you don't have stitches that dissolve, you will probably have your stitches removed about 10-12 days after your operation.

Wound infection

This can be a complication of surgery. Signs of infection can include warmth, redness, swelling around the wound or discharge coming from it. You may also feel unwell with a fever. Tell your nurse or doctor if you get any of these symptoms, even after you go home.

Drains

You may have a long, thin plastic drainage tube attached to a bottle that fluid from the wound drains into. It is usually left in until it stops draining or reduces in quantity, which may take a few days (usually 10 days). You can go home with the drain.

Fluid collecting around the wound (seroma)

Fluid can build up in the area around the wound. This is called a seroma. It usually goes away within a few weeks. Sometimes your nurse or doctor may need to drain it off with a needle and syringe (seroma aspiration).

Pain

You'll probably have some pain around the wound and in your armpit if you had lymph nodes removed. This may last a few days. The nurses will give you painkillers to take regularly until it settles down. Let your doctor or nurse know if the painkillers aren't helping. They can prescribe stronger ones for you to try.

Stiff shoulder or arm

After a mastectomy or having lymph nodes removed, your shoulder or arm may feel sore or stiff.

It's important to do the arm exercises that your physiotherapist or nurse shows you. This will help improve the movement in your shoulder and arm, and reduce the risk of long-term problems. You should start the exercises the day after your operation and gradually build up what you can do.

Our booklet: "Exercises after breast cancer surgery" shows you these exercises.

Numbness and tingling in the upper arm

You may have this as nerves in your breast and armpit are cut or stretched during the operation. This is more likely if you had all the lymph nodes removed. It may slowly improve over several months but is sometimes permanent.

How your breast looks

It is common to have swelling and bruising after your operation.

It should improve after a few weeks, but let your doctor know if it doesn't. Wearing a sports bra might feel more comfortable until the swelling settles. If you had a sentinel lymph node biopsy, you may see the blue dye in the skin for a while, but this is normal.

Scars

Before your operation, your surgeon or breast care nurse will explain where the scars will be. Scars from breast conserving surgery are usually small. Depending on where the surgeon makes the cut, the scar may be in the area where the cancer was, or a small distance away.

A mastectomy scar is across the skin of the chest and into the armpit.

To begin with, your scar may be firm and slightly raised. Over time, it will flatten and fade. Everyone's skin heals differently. If you have dark skin scars can take longer to settle and may be more noticeable for longer.

If you are worried about your scar, talk to your breast care nurse or surgeon. There is more information about scarring after breast reconstruction in our booklet on breast reconstruction.

Coping with a changed appearance

The first time you look at your breast or chest area after your operation, you may prefer to be alone or have someone with you.

At first, the area will look swollen and bruised, but this will settle in the next few weeks. In time, the scar becomes less obvious.

Changes to your appearance can affect your confidence and feelings about yourself as a woman. They can also affect your sex life.

Some women find that breast reconstruction helps give them back their confidence and feelings of femininity.

Breast prosthesis

If you have a mastectomy and don't have immediate breast reconstruction, your nurse will give you a soft, lightweight prosthesis (false breast) to wear inside your bra. It's often called a 'cumfie' or 'softie'. You can start wearing it straight after your operation.

When your wound has healed, you can choose a permanent prosthesis. This will closely match the size and shape of your other breast. It's made of soft plastic (silicone). Your confidence will gradually improve as you get used to it.

When you get home

Your recovery will depend on the type of operation you have had.

It's important to follow the advice you've been given by your doctor.

Try to get plenty of rest and eat well. Do some light exercise, such as walking, that you can gradually increase. This helps build up your energy and remaining physically active boosts your self-confidence. It's important to carry on with the arm exercises you were shown in hospital. You may need to avoid lifting or carrying anything heavy for a few weeks.

Most women are ready to drive about four weeks after their operation. Don't drive unless you feel in full control of the car.

You will be given an appointment for the outpatient clinic to see the surgeon and doctor. They will check that the wound is healing properly. They'll also tell you about the tissue that was removed during surgery (pathology), the stage of the cancer and any further treatment you need.

Late effects of surgery

Some women may have problems with the effects of surgery for months or longer after their operation. Tell your doctor if you have any of these or if there's anything you're worried about.

Cording

This can be uncomfortable and feels like a tight cord running from your armpit down the inner arm, sometimes to the palm of your hand. It can happen weeks or months after surgery and usually gets better over a few months. Some women need physiotherapy and massage to improve it.

Pain and changes in sensation

Sometimes women continue to have numbness, tingling or pain in the upper arm because the nerves were incised during surgery. Your doctor can prescribe drugs to improve these symptoms. They help to reduce the pain caused by nerve damage.

Changes to your arm/shoulder movement

Arm and shoulder movement and strength usually improve after surgery. Doing your exercises helps reduce the risk of long-term problems. If you have problems, ask your doctor for a referral to a physiotherapist. If moving your shoulder or arm is painful, your doctor can prescribe you some painkillers.

Lymphoedema

Surgery or radiotherapy to the lymph nodes in the armpit can sometimes lead to swelling of the arm (lymphoedema). If you notice any swelling, speak to your doctor.

The earlier treatment for lymphoedema begins the more effective it can be. We also have more information on how to reduce your risk of getting lymphoedema.

Radiotherapy

Radiotherapy uses high-energy X-rays to destroy cancer cells, while doing as little harm as possible to normal cells. You may be given it to reduce the risk of breast cancer coming back in the breast, chest or lymph nodes. Sometimes it is given to the site where the cancer may have spread (like bone or brain) to reduce or palliate the associated symptoms.

Radiotherapy after breast-conserving surgery

If you have had breast-conserving surgery, your cancer specialist will recommend you to have radiotherapy to the breast after your operation. In most cases, an extra dose is given to the area from where the cancer was removed (this is called tumour bed boost).

You usually start radiotherapy 3-4 weeks after the surgery. However if you are having chemotherapy after the surgery, radiotherapy is started a few weeks after completion of all chemotherapy.

Radiotherapy after a mastectomy

Some women are advised radiotherapy after a mastectomy. This depends on the risk of the cancer coming back in the chest or lymph node area. Your cancer specialist may recommend radiotherapy to your chest with or without lymph nodes. The lymph nodes that may need radiotherapy are above the collarbone and sometimes nodes behind by the breastbone or in the armpit. Radiotherapy is advised if any one of these features is present:

- the tumour in the breast was more than 5 cm or was involving the skin or nipple or the underlying muscles
- Lymph nodes in the armpit contained cancer cells there were cancer cells at or close to the edges of the removed breast tissue
- Any other pathology finding suggesting a higher risk or cancer recurrence in chest or lymph node areas

How it is given

You usually have a course of radiotherapy for three to four weeks depending upon whether it is after mastectomy or breast conservation surgery.

You have the treatment in the hospital radiotherapy department as a series of short daily sessions. Each treatment takes 10-15 minutes and they are usually given Monday-Friday with a rest over the weekend. Your cancer specialist will talk to you about the treatment and possible side effects. You will not feel any pain while the radiotherapy is being delivered.

External radiotherapy does not make you radioactive and it is safe for you to be with other people, including children, after your treatment.

Planning radiotherapy

Radiotherapy has to be carefully planned to make sure that the areas at risk of cancer recurrence receive adequate doses of radiation while minimizing the radiation dose to normal organs within acceptable limits. It's planned by a team of radiation oncologist, physicists and radiation technologists or radiographers. Planning may take a few visits during which, you may be asked to have a CT scan or lie under a machine called a simulator, which takes x-rays of the area to be treated.

You usually have markings made on your skin. Usually, one or more permanent tattoo markings the size of a pinpoint are made. The skin marks and tattoo help to show the exact place where the radiographers (who give you your treatment) direct the rays. The pin prick to make the tattoo may cause slight pain and discomfort while they're being made, but it makes sure treatment is given to the right area.

Positioning

For radiotherapy planning and treatment, you will have to lie still on a special table. Usually a breast board is used which helps you to lie still in the desired position with one or both arms above your head so that the radiotherapy machine can give the treatment effectively. A physiotherapist can show you exercises to do to make this easier if your muscles and shoulder feel stiff or painful.

Treatment sessions

At the beginning of each session, the radiographer will position you carefully on the couch and make sure you are comfortable.

During your treatment, you will be alone in the room, but you can talk to the radiographer who will watch you from the next room. Radiotherapy is not painful, but you will have to lie still for a few minutes during the treatment.

Side effects of radiotherapy

You may develop side effects over the course of your treatment. These usually disappear gradually over a few weeks or months after treatment finishes. Your doctor, nurse or radiographer will discuss this with you so you know what to expect. During the period of your daily radiotherapy sessions, you will be seen once a week or more by the radiation oncologist to check if the treatment is progressing well and if you have any expected or unexpected side effects. During the weekly visit to your doctor, let them know about any side effects you have during or after treatment, as they can give specific advice or medications to ease these symptoms.

Skin irritation

Your skin in the treated area may get red, dry and itchy. Dark skin may get darker or have a blue or black tinge. Your doctor will give you advice on looking after your skin. If it becomes sore and flaky, your doctor can prescribe creams or dressings to help this. Skin reactions settle down 2 - 4 weeks after radiotherapy.

Here are some tips to help with skin irritation:

- Don't put anything on your skin in the treated area without checking with your doctor first.
- You can take a bath daily with normal or slightly warm water. Water can come over the area of breast or chest which is receiving radiotherapy but do not apply any soap or chemicals to this area unless your doctor has given specific permission for this.
- Pat the area dry gently with a soft towel. Don't rub the area.
- Wear loose cotton clothing as they are less likely to irritate your skin.

You need to avoid directly exposing the treated area to bright sunshine for at least 6 months after treatment completion. Use sun cream with a high sun protection factor (SPF) of at least 30 to protect your skin if it's exposed.

Tiredness

Some women experience slight tiredness during and radiotherapy and this may last up to a month or two after treatment. Try to get plenty of rest and pace yourself.

Balance this with some physical activity, such as short walks, which will give you more energy.

We have more information about "Coping with fatigue".

Aches and swelling

You may have a dull ache or shooting pains in the breast that last a few seconds or minutes and/or your breast may become swollen. These effects usually improve quickly after treatment. Some women still have occasional aches and pains in the breast area after radiotherapy.

Late effects

Radiotherapy to the breast may cause side effects that occur months or longer after radiotherapy. If you're worried about a particular side effect, talk to your cancer specialist.

The most common late effect is a change in how the breast looks and feels. Small blood vessels in the skin may be affected causing red 'spidery' marks (telangiectasia) to appear on the surface of the breast. Your breast may feel firmer, and shrink slightly in size.

With modern radiotherapy planning and delivery it is rare for it to cause any heart problems or problems with the ribs in the treated area. Lung problems as a result of radiotherapy are also rare.

Chemotherapy

Chemotherapy uses anti-cancer (cytotoxic) drugs to destroy cancer cells. Cytotoxic means toxic to cells. These drugs disrupt the way cancer cells grow and divide but they also affect normal cells to a certain extent.

When do you need chemotherapy

Your cancer specialist may recommend you to have chemotherapy before or after surgery to reduce the risk of breast cancer coming back. This is called neoadjuvant and adjuvant chemotherapy respectively. Your doctor will explain the benefits, the likely side effects and precautions during this therapy.

You are usually offered chemotherapy if the cancer is:

- large
- high-grade
- has spread to the lymph nodes
- triple negative
- HER2 positive

Some women have chemotherapy before surgery to shrink a large cancer (neo-adjuvant treatment). If it works well, you may only need part of the breast to be removed instead of the entire breast. Women with inflammatory breast cancer usually have chemotherapy before their surgery.

How do you have chemotherapy

You usually have chemotherapy in the chemotherapy day care unit and go home after it. The drugs are usually given into a vein (intravenously) as a short injection or a drip infusion and some are taken as tablets.

You usually have them through a small tube (cannula) in your hand or arm. Sometimes they are given through a soft plastic tube called a central line or PICC line. These lines go into a large vein in your chest. Chemotherapy can also be given into a thin, soft plastic tube with a rubber disc (port), under the skin on your upper chest. Chemo port insertion is usually done at the time of your surgery. It can be done as a minor surgical procedure at a later date also if your treating oncologist feels that it's necessary or if there is difficulty in finding veins in your upper limb for the infusion.

Chemotherapy is given into the vein as several sessions of treatment. Each session takes a few hours. After the session, you will have a rest period of a few weeks. The chemotherapy session and the rest period is called one cycle of chemotherapy.

The length of a cycle depends on the chemotherapy drugs you're taking, but most cycles are 1-3 weeks long. Your doctor will explain more about this. Most, (but not all), courses of chemotherapy consist of six-eight cycles.

The drugs used

You will have a combination of different chemotherapy drugs. Some commonly used combinations include:

- AC or EC - doxorubicin and cyclophosphamide or epirubicin and cyclophosphamide
- TC - docetaxel and cyclophosphamide
- EC-T - epirubicin and cyclophosphamide followed by docetaxel
- EC-P - epirubicin and cyclophosphamide followed by paclitaxel

Your doctor may offer you a choice of chemotherapy treatments. If so, you will be given more information to help you make a decision. The choice of these regimens depends on your general fitness for chemotherapy, the presence of other comorbidities in you like diabetes, cardiac problems, hypertension, neuropathy, kidney problems etc. Multiple factors are taken into consideration before choosing the, best effective chemotherapy regimen for you.

If you have HER2 positive breast cancer, you may have a targeted therapy called trastuzumab / trastuzumab emtansine along with your chemotherapy.

Side effects

Chemotherapy drugs can cause side effects. Many of these can be controlled well with medicines and will usually go away gradually after your treatment finishes. Your doctor or nurse will tell you more about what to expect. Always tell them about your side effects, as there are measures to minimize them if informed in time.

Risk of infection

Chemotherapy can reduce the number of your white blood cells, which are body's defense mechanism and help fight infection. If the number of white blood cells is low, you'll be more prone to infections. A low white blood cell count is called neutropenia.

Always contact the hospital immediately if:

- you develop a high temperature, which may be over 38°C (100.4°F); follow the advice that you have been given by your chemotherapy team
- you suddenly feel unwell, even with a normal temperature
- you feel shivery and shaky or fatigued and exhausted
- you have any symptoms of an infection such as a cold, sore throat, cough, passing urine frequently (which could be a sign of urine infection) or diarrhoea.

If necessary, you'll be given antibiotics to treat an infection. You may need intravenous antibiotics sometimes which will be decided after examining you.

You'll have a blood test before each cycle of chemotherapy to make sure your white blood cells and platelets have recovered. Occasionally, your treatment may need to be delayed if your number of white blood cells or platelets are still low.

Your doctor may give you injections of a drug called G-CSF under the skin. It encourages the bone marrow (where blood cells are made) to make more white blood cells. You might experience body ache and rise of temperature post this injection which is transient.

Bruising and bleeding

Chemotherapy can reduce the number of platelets in your blood. Platelets are cells that help the blood to clot. If you develop any unexplained bruising or bleeding such as nosebleeds, bleeding gums, blood spots or rashes on the skin, contact your doctor or the hospital straight away. If you have low platelets and bleeding from somewhere, you may have to receive platelet transfusions till your bone marrow recovers from the effects of chemotherapy and starts making enough platelets.

There are no injections routinely used to increase the platelet count. We usually wait for platelets to recover spontaneously. Your doctor may give you injections of a drug called romiplostim under the skin. It encourages the bone marrow (where blood cells are made) to make more mature platelets. If the platelet recovery had been too late causing delay in administration of the next cycle of chemotherapy, your doctor may consider reducing the dose of chemotherapy for the next cycle.

Anaemia (low number of red blood cells)

Chemotherapy may reduce the number of red bloods cells (haemoglobin) in your blood. A low level of red blood cells is known as anaemia, which can make you feel very tired and lethargic. You may also become breathless even with minimal exertion. Let your doctor know if you experience these symptoms.

Feeling sick (nausea)

Some chemotherapy drugs can make you feel sick (nauseated) or possibly cause vomiting. Your cancer specialist will prescribe an anti-sickness (anti-emetic) drug to prevent this; this is given a little before, along with and for a few days after the chemotherapy session is completed. Let your doctor know if your anti-sickness drugs are not helping, as there are several different types you can try. Each patient's tendency to have nausea and vomiting is different. An anti-nausea medicine that has worked for one patient may not work the same way for you. One patient may not have any nausea with a particular chemotherapy regimen while you may have a lot of sickness. We can give you more information about nausea and vomiting.

Tiredness (fatigue)

You're likely to become tired and have to take things more slowly. Cancer itself can cause fatigue and chemotherapy drugs can also make you feel tired. Try to pace yourself and save your energy for things that you want to do or that need to keep going. Balance rest with some physical activity. Do not overwork and exhaust your self. Even just going for a short walk will help increase your energy levels. Our booklet "Coping with fatigue" has more helpful tips.

Hair loss

This is a common side effect of the drugs used to treat breast cancer. Ask your doctor what you should expect. Some women may lose all their body hair including eyelashes and eyebrows.

If you do experience hair loss, your hair should start to grow back about 3-6 months after treatment completion. Your doctor can give you advice about coping with hair loss and how to look after your scalp. You can also get helpful information from our booklet, "Coping with hair loss".

They will let you know if scalp cooling - a way of reducing hair loss during chemotherapy - would be appropriate.

Loss of appetite

Some people lose their appetite during chemotherapy. This can be mild and may only last a few days after completion of the chemotherapy session. If you don't feel like eating during treatment, you could try replacing some meals with nutritious drinks or a soft diet. If it doesn't improve, you can ask to see a dietitian.

Sore mouth

Your mouth may become sore (or dry), or you may notice small ulcers during treatment. Sometimes you may develop fungal infection in your oral cavity (oral thrush or candidiasis). Drinking plenty of fluids, and cleaning your teeth regularly and gently with a soft toothbrush, can help to reduce the risk of this happening. Tell your nurse or doctor if you have any of these problems, as they can prescribe mouthwashes and mouth paints to prevent or clear mouth infections. Some mouth paints will contain local anesthetics which if applied 15-20 minutes before meals will cause numbness in the mouth so that you will not have discomfort and pain while eating.

Diarrhoea

Some chemotherapy drugs can cause diarrhoea. This often starts several days after treatment. If you're taking chemotherapy tablets or capsules at home, it's important to let your doctor or nurse know if you have diarrhoea, as your treatment may need to be interrupted. Medicine can be prescribed to help. It's important to drink plenty of fluids if you have diarrhea to prevent dehydration. If you have diarrhea with blood in stools, crampy abdominal pain and fever or you are unable to maintain your hydration orally due to vomiting, please go to the hospital immediately as you will require intravenous fluids and antibiotics.

Effects on the nerves

Some chemotherapy drugs can affect the nerves in your hands or feet. This can cause tingling or numbness, a sensation of pins and needles or muscle weakness (peripheral neuropathy). Sometimes this is very mild with occasional tingling but sometimes it may be severe enough to cause difficulty in buttoning and unbuttoning a dress , holding small objects with fingers, difficulty in walking with slipping of footwear from your feet.

It's important to let your doctor know if this happens because if this is severe enough to interfere with your activities of daily living, they may need to modify the dose or even change the chemotherapy drug. Usually, peripheral neuropathy gradually gets better when chemotherapy is over, but sometimes it's permanent. We can give you more information about peripheral neuropathy.

Side effects can be hard to deal with, but they usually disappear gradually with time when your treatment finishes.

Contraception

Your doctor will advise you not to get pregnant while having chemotherapy. This is because the drugs may harm an unborn baby. It's important to use effective contraception during your treatment.

Sex

You're usually advised to use condoms if you have sex within the first 48 hours after chemotherapy. This is to protect your partner from the drugs in case they're present in the vaginal fluid.

Early menopause

Younger women may not have periods after chemotherapy. This is called chemotherapy induced amenorrhoea which is because of the chemotherapy drugs suppressing the ovarian cycle. You should know that in hormone receptor positive cancers this improve outcome and hence is good for such patients. Some women may find this difficult to deal with. Menstrual cycles may return at variable periods of time after completion of chemotherapy however it is highly variable and age dependent. Chances of resumption of menstrual functions is higher in younger women (<35 years). For women nearing their menopause, periods may never return and they may start experiencing menopausal symptoms like hot flushes and mood swings.

Infertility

If you're worried about the effect chemotherapy on your fertility, it's important to talk this over with your cancer specialist before treatment starts.

Food during chemotherapy

You will experience loss of appetite alteration in taste and difficulty in having spicy food during chemotherapy. Try to eat small meals more frequently. Don't hesitate to ask for anti-nausea medication if nausea is preventing you from eating. Take the anti-nausea medication 30-60 minutes before having food so that your nausea is well controlled during your meal. You can have anything that is freshly cooked and prepared at home. Your doctor will discourage you from having food from outside as you may be prone to infections during chemotherapy and may have diarrhea if the food is not well prepared or clean. For similar reasons it is advisable to avoid raw foods like salads unless you are sure of their cleanliness. You can have thick peeled fruits after removing the peel and washing them thoroughly in warm water. Avoid fruit juices and sugar cane juice prepared outside as again stringent cleanliness is a problem. You can have freshly prepared fruit juice at home but it has to be consumed immediately after preparation. Avoid storing it and drinking it later. Avoid coconut water from street shops during chemotherapy as the knife used to cut is often unclean. Avoid deeply fried, oily and very spicy food as they add to tummy upset. Other than these, there are no food restrictions for chemotherapy. You can have anything that you like and find tasteful. You can also have eggs, fish, chicken as long as cleanliness is ensured.

Pregnancy associated breast cancer (PABC):

Breast cancer during or within one year of pregnancy is called PABC. With the advances in treatment it is possible to manage pregnancy and breast cancer together; However, drugs and radiation exposure can affect fetus if administered during first trimester of pregnancy hence it is advisable to not conceive once started on chemotherapy or radiotherapy or undergoing radiological investigations like x-ray. You should discuss these issue with your doctor if they are relevant at present.

Hormonal therapies

Hormones help to control how cells grow and what they do in the body. The hormones estrogen and progesterone can encourage some breast cancers to grow (particularly estrogen).

Hormonal therapies reduce the level of estrogen in the body or prevent it from attaching to the cancer cells. They only work for women with estrogen-receptor positive cancers. That is, cancers in which the growth of the cancer cells is driven by estrogen.

You may have hormonal therapy to reduce the risk of breast cancer coming back and to protect your other breast. You'll usually take hormonal therapy for a number of years. (5-10 years)

Your cancer specialist will start your hormonal therapy after surgery or after adjuvant chemotherapy, if you have it. Sometimes doctors prescribe hormonal therapy before surgery to shrink a large cancer, which may mean you can avoid having a mastectomy. This is called as neoadjuvant hormonal therapy.

The type of hormonal therapy you have depends on:

- whether you've been through the menopause or not
- the risk of the cancer coming back
- how the side effects are likely to affect you.

Taking your hormonal therapy

Hormonal therapy reduces the risk of breast cancer coming back.

It's very important to take hormonal therapy for as long as your cancer specialist prescribes it. It may help to build taking it into your daily routine so it becomes a habit. You can fix one particular time of the day for taking the tablet and set up daily reminder in your mobile at that time or put stick-on notes at places in the house that you would not miss seeing.

Most women cope well with the side effects of hormonal therapy. Common side effects are menopausal symptoms like hot flushes, moods wings, and osteoporosis causing bone pain. They may be more troublesome in the first few months, but they usually get better over time. If you continue to have problems or if your side effects are difficult to cope with, talk to your doctor. They can prescribe drugs to help and advise you on other ways of coping. If the side effects don't improve and are very troublesome, your cancer specialist may suggest switching to a different type of hormonal therapy.

Hormonal therapy after the menopause

After the menopause, the ovaries no longer produce estrogen. But women still make some estrogen in their fatty tissue. If you have been through your menopause, your doctor may prescribe one of the following:

- an aromatase inhibitor such as anastrozole, letrozole or exemestane.
- the anti-estrogen drug tamoxifen and an aromatase inhibitor (one type is given after the other)
- tamoxifen on its own.

Aromatase inhibitors (AIs)

Aromatase inhibitors (AIs) are the main hormonal therapy used in post-menopausal women with breast cancer. They stop estrogen being made in the fatty tissue after menopause. Your doctor may prescribe an aromatase inhibitor such as anastrozole, letrozole or exemestane.

These drugs are taken daily as a tablet. Side effects can include:

- tiredness
- joint and muscle pain
- hot flushes.

If taken over a long period of time, AIs can cause bone thinning (osteoporosis). You will have a scan called a DEXA (dual-energy x-ray absorptiometry) scan, to check your bone health (density) periodically.

If you are at risk of osteoporosis, your cancer specialist may prescribe drugs called bisphosphonates to protect your bones. They will probably also advise you to take calcium and vitamin D supplements to help with your bone strength.

Hormonal therapy before the menopause

Before the menopause, the ovaries produce estrogen. If you haven't been through the menopause (pre-menopausal), your doctor may prescribe one of the following:

- the anti-estrogen drug tamoxifen
- a drug, such as goserelin that stops the ovaries from producing estrogen (ovarian suppression)
- surgery to remove both the ovaries
- a combination of tamoxifen with either goserelin or ovarian ablation (this may be an option for women who don't want to have chemotherapy).
- Destroying the ovaries using radiation (RTOA - radiotherapy induced ovarian ablation)

Some hormonal therapies bring on a temporary or permanent menopause. If you have an early menopause, you will have a DEXA (dual-energy x-ray absorptiometry) scan to check your bone health. Women at risk of bone thinning (osteoporosis) may be prescribed drugs called bisphosphonates to protect their bones and are advised to take calcium and vitamin D supplements.

Drugs that stop the ovaries from producing estrogen

Goserelin stops the production of estrogen in the body. It does this by stopping the pituitary gland in the brain from sending messages to the ovaries to produce estrogen. This stops the ovaries from producing estrogen and causes a temporary menopause. The side effects are similar to menopausal symptoms and include:

- hot flushes and sweats
- joint pain
- low sex drive.

Your nurse will give you goserelin as a monthly injection under the skin of the tummy (abdomen). When you finish treatment, your ovaries usually start to produce estrogen again. This means your periods will come back. If you were close to your natural menopause when you started goserelin, your periods may never return.

Permanently stopping the ovaries from working (ovarian ablation)

Other ways of lowering estrogen levels include stopping the ovaries from working. Doctors sometimes call this ovarian ablation. It can be done with a small operation to remove the ovaries or, rarely, with a short course of radiotherapy to the ovaries. Your doctor may ask you to choose between taking goserelin or having ovarian ablation.

The operation can be done during a short stay in hospital using keyhole surgery. The surgeon makes a small cut in the tummy area and inserts a thin tube with a tiny light and camera on the end (laparoscope). The surgeon removes the ovaries through the cut using the laparoscope, which has small surgical instruments attached to it. Women usually recover quickly from this type of operation.

If you have this surgery, your periods will stop straight away. After radiotherapy, women usually have one more period before their periods stop completely. It's important to use contraception for three months after radiotherapy induced ovarian ablation. Sometimes radiotherapy may not be successful in completely destroying the ovarian tissue. That is why it is important to check the estrogen, follicle stimulating hormone (FSH) and leutenizing hormone (LH) levels about 8-12 weeks after radiotherapy induced ovarian ablation to check whether they have reached the post-menopausal range or not.

Both methods (surgery and radiotherapy) cause a permanent menopause. Becoming infertile because of cancer treatment can be very hard to cope with.

Tamoxifen for early breast cancer

Tamoxifen is a drug that stops estrogen from attaching to breast cancer cells and encouraging them to grow.Tamoxifen is the main hormonal therapy for women who have not been through menopause. It's taken daily as a tablet. It is occasionally used in post-menopausal women. Some women take it for a few years

and then go on to take an aromatase inhibitor.

Doctors sometimes prescribe tamoxifen if a post-menopausal woman has problems with bones or troublesome side effects with AIs. Tamoxifen doesn't cause bone thinning in post-menopausal women, but it can slightly increase the risk of uterine cancer. It's important to tell your doctor if you have any vaginal bleeding while you are on tamoxifen. If you are having your regular periods while on tamoxifen, it is important to tell the doctor if you are experiencing any excess bleeding than usual.

The side effects are similar to the effects of the menopause and may include:

- hot flushes and sweats
- weight gain
- tiredness.

Tamoxifen can slightly increase your risk of a blood clot formation in different parts of your body like legs, liver, pelvic veins etc. If you develop swelling and pain in one of your limbs, you must tell your doctor immediately. You will require a Doppler scan of the limb to look for blood clots in your veins. If there is a blood clot, you will have to be started on blood thinning.

You'll usually have tamoxifen for at least five years. But recent trial results show that taking it for 10 years can reduce the risk of the cancer coming back further. You can talk to your doctor about this. It won't be suitable for everyone, especially if you have side effects or want to have children. It can affect fetus so it is not advisable to conceive while on tamoxifen. If you're close to your natural menopause when you start tamoxifen, your doctor may change your treatment to an aromatase inhibitor after a few years.

We have more detailed information on tamoxifen, including how it works, how it's taken and the side effects it may cause.

Ovarian ablation and early breast cancer

This information is for women who have been offered ovarian ablation as part of their breast cancer treatment. Ovarian ablation or ovarian suppression are terms used to describe different ways of stopping the ovaries from working and producing the female

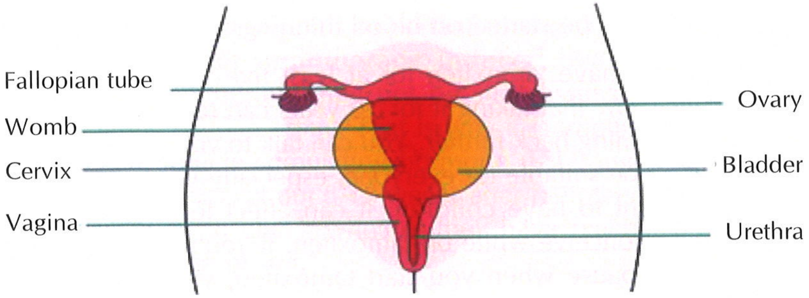
hormones- predominantly estrogen. We use the term ovarian ablation to cover all the different methods.

Ovarian ablation is only suitable for women with ER+ breast cancer who haven't reached their menopause. It can be used to treat women with primary or secondary breast cancer.

This information explains what ovarian ablation is, how it's done, some of the side effects and ways of coping with them.

If you have any further questions, you can ask your doctor or nurse at the hospital where you're having treatment.

In women with estrogen receptor positive (ER+) breast cancer, the hormone estrogen can stimulate breast cancer cells to grow. Before menopause, most of the estrogen in the body is made by the ovaries. Ovarian ablation stops the ovaries from producing estrogen and, as a result, lowers estrogen levels in the body. It may be used to treat women who have primary breast cancer or breast cancer that has spread to other parts of the body (secondary breast cancer).



The ovaries and their surrounding structures

Ovarian ablation can be used:

- after surgery to reduce the risk of the cancer coming back
- to reduce the risk of developing a new breast cancer
- to shrink and control breast cancer that has spread.

Some women have ovarian ablation in combination with the anti-estrogen drug tamoxifen. Ovarian ablation may be offered as an option for some women who don't want to have chemotherapy after surgery. Chemotherapy, which may be given after surgery to reduce the risk of breast cancer coming back, can also bring on an early menopause.

Types of ovarian ablation

There are three different ways to stop the ovaries producing estrogen:

- surgery to remove the ovaries
- hormonal therapy to 'shut down' the ovaries (ovarian suppression)
- radiotherapy to stop the ovaries from working.

Surgery

An operation to remove the ovaries is called an oophorectomy. It's usually carried out under general anaesthesia. The fallopian tubes, which are close to the ovaries, are usually removed at the same time.

The operation is often done using keyhole (laparoscopic) surgery. The surgeon makes up to four small cuts (incisions) in the skin and muscle in the tummy area. They then insert a long, thin, flexible tube called a laparoscope, which has a tiny light and camera on the end, through one of the cuts. The laparoscope is connected to a video camera and television so the inside of your abdomen can be seen on the screen. Gas is introduced into one of the cuts to make the tummy swell so that it's easier for the surgeon to see the ovaries through the camera. The gas is released through the cuts at the end of the operation.

To remove the ovaries your surgeon uses instruments that are attached to the laparoscope and inserted into the other cuts. Afterwards, the cuts are closed with stitches (usually self-dissolving) and covered with a small dressing. You may be in hospital for a day or two, and your recovery is usually quick.

Sometimes it is not possible to remove the ovaries with keyhole surgery. Instead, you'll have one long incision made in the lower part of the abdomen and the ovaries are removed through this (open surgery). You'll usually be in hospital for a few days after this operation as it takes longer to recover from than a keyhole surgery.

Removing the ovaries produces an immediate and permanent menopause. This means you won't have any more periods and you may get menopausal symptoms very shortly after the operation

Hormonal therapy to 'shut down' the ovaries

Hormonal therapies are drugs that work by lowering or blocking the effects of estrogen on breast cancer cells.

Your doctor may recommend drugs (LHRH analogues) that stop the brain from producing the luteinising hormone, which stimulates the ovaries to make estrogen. They cause a temporary menopause by shutting down or suppressing the ovaries (ovarian suppression) from producing estrogen. The drop in estrogen levels is similar to when the ovaries are removed by surgery. Estrogen levels usually drop within three weeks of starting treatment and remain like this as long as treatment continues.

The drug most commonly used are called goserelin or leuprolide acetate .They are given as an injection under the skin (subcutaneously) into the tummy once in every 28 days or every 3 months (depending upon dose used). You'll usually have the first injection given to you at a clinic appointment. After this it can usually be given to you by your nurse or your general physician.

You may have one, or occasionally two more periods after your treatment starts before it takes effect.

They are usually given for 2-5 years but can be given for longer in some situations. Your doctor will talk to you about the length of treatment that's right for you.

When you stop taking the drugs your ovaries may start to work again, usually within six months. This depends on how close you were to your natural menopause when you started treatment. If you were close to your menopause your periods may not come back afterwards.

Although your periods usually stop during treatment, the drugs are not a contraceptive, so you'll need to use effective contraception to make sure you don't get pregnant. Your doctor can give you further advice.

Radiotherapy induced ovarian ablation

Radiotherapy uses high-energy x-rays and can be given to the ovaries to stop them from working and producing estrogen. This method is not commonly used.

You can have the radiotherapy over a few days as an outpatient. The side effects can include diarrhoea and feeling sick, but your doctor can prescribe medicines to control this. You may also feel tired. The side effects go away shortly after treatment is over.

It is rare for radiotherapy in ovarian ablation to cause any long-term effects because the dose used is very low.

Radiotherapy to the ovaries causes a permanent menopause. This doesn't happen straight away and your periods may carry on for up to three months after radiotherapy. It's important to use reliable contraception until you are sure your periods have stopped completely, as you may still become pregnant. Your doctor can give you further advice.

Infertility

Hormonal therapy with LHRH analogues is used to temporarily stop your ovaries from working. After treatment your periods may come back, usually within six months. So this treatment may be suitable for women who want the option of having children after breast cancer. However, if you were close to your natural menopause when treatment started your periods may not come back at all.

Having your ovaries removed or having radiotherapy to your ovaries means you won't be able to have children. This can be very distressing, especially if you were hoping to have children or add to your family. Some women may find it helpful to talk through their feelings with a professional counselor. Your doctor can give you support and advice.

Long-term risks

Estrogen helps keep bones strong, and a lack of it over a long period increases the risk of osteoporosis (thinning of the bones). You may need to have your bone health (density) checked by having a special bone scan called a DEXA scan. There are bone strengthening drugs that your doctor can prescribe, if necessary.

Taking regular exercise and healthy eating can help keep your bones strong. These measures also help protect your heart and reduce the risk of other illnesses. Having an early menopause may increase the risk of heart problems later on, although this hasn't been proven. Your doctor can give you information and advice about the risk of long-term problems after ovarian ablation.

Targeted Therapy

Trastuzumab

Targeted therapies (sometimes called biological therapies) are new drugs that work differently from chemotherapy. The main targeted therapy used in early breast cancer is trastuzumab.

Trastuzumab reduces the risk of breast cancer coming back in women with HER2 positive breast cancer. This is also called as HER 2 targeted therapy

Trastuzumab is an artificially made antibody that attaches to the HER2 receptors on the surface of breast cancer cells and stops them from dividing and growing. You'll usually have trastuzumab every three weeks for up to a year.

It is given with chemotherapy, or on its own. It may initially be given with chemotherapy till the planned number of chemotherapy cycles are completed and later on trastuzumab alone may be continued once in 3 weeks to complete a total of 1 year of trastuzumab based therapy.

How is trastuzumab is given

Trastuzumab can be given as a drip (infusion) into a vein (intravenously) or as an injection under the skin (subcutaneously).

When it's given as a drip, you have it slowly the first time (over an hour and a half) and the nurse will check you for signs of a reaction. You can then have future infusions over about 30 minutes.

It only takes a few minutes to have it as an injection under the skin. But you still have to wait for an hour and a half so they can check you for any reaction.

Side effects

The side effects of trastuzumab are usually mild. Some may occur when you're having the drip or up to four hours after, particularly with the first dose. These include flu-like symptoms such as a headache, high temperature (fever) and chills, or feeling sick. They generally get better within a few hours of completion of the infusion. Another possible side effect is an allergic reaction, but this is rare. The nurses will check for signs of a reaction. If it happens, they can treat it quickly with drugs.

You may get other side effects after treatment. These include diarrhoea, headaches and feeling sick.

Effects on the heart

Trastuzumab may lead to changes in the way your heart works and can cause problems in some women. It can cause weakening of the cardiac muscle and reduce the pumping action of the heart. Usually, any effect is mild and reversible. You may be given heart medicines to counteract the effects of trastuzumab.

You'll have tests which include an ECG and a 2D echo to check your heart functioning before and during treatment to make sure the drug isn't causing any heart damage. It is recommended to do a 2D echo once in 3 months for as long as you are on trastuzumab therapy. Trastuzumab isn't usually given to women who already have heart problems.

Pertuzumab

Pertuzumab is another targeted therapy which can be used to treat breast cancer. It is also an monoclonal antibody that targets HER2. Pertuzumab is designed to block HER2 receptors on the surface of cancer cells, which can help slow down the growth and spread of the cancer.

How pertuzumab is given

Pertuzumab can be given as a drip (infusion) into a vein (intravenously) or as an injection under the skin (subcutaneously).

When it's given as a drip, you have it slowly the first time (over an hour and a half) and the nurse will check you for signs of a reaction. You can then have future infusions over about 30 minutes.

It only takes a few minutes to have it as an injection under the skin. But you still have to wait for an hour and a half so they can check you for any reaction.

Side Effects

Common side effects may include diarrhoea, nausea, fatigue, hair loss, and decreased white blood cell counts. Most side effects are manageable, and healthcare providers can provide supportive care to minimize their impact.

Trastuzumab emtansine

Trastuzumab emtansine is a type of medication called an antibody-drug conjugate. Trastuzumab emtansine is a combination of two components: trastuzumab (Herceptin) and a chemotherapy drug called emtansine (DM1). Trastuzumab targets and binds to the HER2 receptors on cancer cells, while emtansine is a chemotherapy drug that is linked to trastuzumab. Once inside the cancer cell, emtansine is released and works to disrupt the cancer cell's ability to divide and grow.

How Trastuzumab emtansine is given

Trastuzumab emtansine is given as an intravenous (IV) infusion, typically every three weeks. The dosage and treatment schedule are determined by the patient's oncologist based on individual factors.

Side Effects

Common side effects may include fatigue, nausea, muscle pain, low platelet counts, and liver function abnormalities. It's essential for patients to communicate any side effects to their healthcare team, as there are strategies to manage them.

Clinical trials

Cancer research trials are carried out to try to find new and better treatments for cancer. Trials that are carried out on patients are known as clinical trials.

Trials may be carried out to:

- test new treatments, such as new chemotherapy drugs, hormonal therapies or targeted therapies

- look at new combinations of existing treatments, or change the way they are given to make them more effective or reduce side effects
- compare the effectiveness of drugs used to control symptoms
- find out how cancer treatments work
- find out which treatments are the most cost-effective.

Trials are the only reliable way to find out if a different type of surgery, chemotherapy, hormone therapy, radiotherapy, or other treatment is better than what is already available.

Taking part in a trial

You may be asked to take part in a treatment research trial. There can be many benefits in doing this. Trials help to improve knowledge about cancer and develop new treatments. You will be carefully monitored during and after the study. This research will hopefully improve the outlook for future patients.

Usually, several hospitals around the country take part in these trials. It's important to bear in mind that some treatments that look promising at first are often later found not to be as good as existing treatments or to have side effects that outweigh the benefits.

If you decide not to take part in a trial, your decision will be respected and you don't have to give a reason. However, it can help to let the staff know your concerns so that they can give you the best advice. There will be no change in the way that you're treated by the hospital staff, and you'll be offered the standard treatment for your situation.

5. After your treatment

Follow-up treatment

After treatment, you'll usually have regular check-ups and yearly mammograms. Your appointments will be every few months at first, but eventually they may be once a year.

The worst feared thing for a cancer survivor is recurrence. Regular follow-ups help catch these early and treat them while they are still amenable to complete cure.

Appointments are a good opportunity for you to talk to your doctor about any concerns you have. But if you notice any new symptoms between appointments, you can contact your doctor immediately for advice and need not wait.The warning symptoms to be watchful of after treatment completion are any new onset bone pain, low back ache, any new lump felt in the same breast or the opposite breast, or arm pits, any yellowing of eyes , new onset loss of appetite or abdominal bloating or distension , pain in the upper abdomen (may be symptoms of liver enlargement due to the spread of cancer), new onset dry cough , breathlessness on exertion which was not present before.

Instead of routine appointments, some women are given information on what to look out for by their doctor. They are asked to contact their cancer specialist if there's anything they're worried about.

Breast awareness

Although you'll have yearly or once in 18 months mammograms, it's still a good idea to be aware of what's now normal for you. Your treated breast will look and feel different depending on the treatment you've had.

Your doctor can tell you what you should expect and what to look out for. It's also important to be aware of what to look out for in your untreated breast.It is good to do a monthly self-examination of your breasts. This will help you immediately notice any subtle change in the consistency or texture more easily.

If you notice anything unusual between appointments, contact your cancer specialist or doctor straight away.

Sex and fertility

This section is about the effects cancer and treatments can have on your sex life. There's also information about contraception, future pregnancy and your ability to have children (fertility)

Sexuality

Breast cancer, its treatments and side effects may affect your sex life and your feelings about yourself as a woman.

Difficulties often gradually improve after treatment, although for some women, it may take longer.

There may need to be a period of adjustment for you and your partner. You may feel insecure and worry whether or not your partner will find you sexually attractive.

It can help to try to talk about it with them if you feel things are awkward between you.

Cuddles, kisses and massages can show how much you care for someone, even if you don't feel like having sex. You can wait until you and your partner feel ready - there's no right or wrong time.

Let your doctor or nurse know if any difficulties with your sex life don't improve. They may be able to reassure you and can offer further help and support. Some people may find it helpful to talk to a sex therapist.

Contraception

Your doctor will advise you not to use contraception that contains hormones such as the pill, or coils (intra-uterine devices) that release hormones. Coils that don't contain hormones or barrier methods, such as condoms or the cap, are usually the most suitable. Your doctor can give you advice.

Pregnancy

Having a family can be an important part of life after cancer. Some women, particularly if they are under 35, don't have difficulties getting pregnant naturally after treatment.

Doctors sometimes advise women to wait for two years. This is because it's during this time that breast cancer is most likely to come back. But waiting also gives women time to recover from treatment. Studies show that getting pregnant after breast cancer doesn't increase the risk of it coming back. It's always a good idea to talk to your cancer specialist if you're thinking about pregnancy.

Effects on fertility

Some breast cancer treatments can affect your ability to have children (fertility). Chemotherapy can bring on an early menopause, especially in women who are closer to the menopause. But in younger women, even though their periods may stop during treatment, they may start again after it's finished.

It's important to talk to your cancer specialist about your fertility before your treatment starts. Sometimes it may be possible to remove eggs from your ovaries before treatment. These can be fertilised with a partner's sperm, and the embryos (fertilised eggs) can be frozen and stored to use later. Women without a partner can have their eggs frozen and stored.

Becoming infertile can be very hard to live with, whether or not you already have children. Some women find it helpful to talk through their feelings with a trained counselor. If you need more specialist help, ask your doctor to arrange this for you.

Effects after treatment

It can take time to recover after treatment, but there's information and advice that could help.

After treatment, you'll probably be keen to get back to doing the day-to-day things you did before. But you may still be coping with some side effects of treatment and with some difficult emotions. It takes time to recover, often several months, so try not to push yourself too hard. We have more information about life after cancer treatment including ways of coping after treatment.

Lymphoedema

Lymphoedema is a swelling of the arm that sometimes happens after surgery or radiotherapy to the lymph nodes in the armpit. It can develop months or years after treatment.

If you only had a sentinel lymph node biopsy, your risk of lymphoedema is small. Women who had all or a large number of lymph nodes removed are more at risk.

Having radiotherapy to the armpit as well as surgery also increases lymphoedema risk.

There are things you can do to help reduce your chances of developing lymphoedema. It's important to protect your arm and hand, and to look after the skin in that area. Here are some tips:

- Keep your skin clean and moisturize it every day with unperfumed cream or oil to keep it in good condition.

- Wash small grazes and cuts straight away, put on antiseptic cream and cover if necessary.
- See your GP straight away if you get signs of infection around a cut, for example, if it becomes red, hot or swollen.
- Avoid needles (blood tests, injections, drips or acupuncture) and avoid having your blood pressure taken in the affected arm.
- Wear gloves and long sleeves when doing household tasks, gardening or when handling animals/pets.
- Use nail clippers to cut your nails and don't push back or cut the cuticles - use cuticle cream instead.
- Use an electric razor if you shave under your arms.
- Cover up in the sun and use a sun cream with a high sun protection factor (SPF) of at least 30.
- Be regular with the arm exercises taught to you at the time of surgery. Every hospital specialized in treating breast cancer patients will have a physiotherapist and an occupational therapist who can train you on anti-lymphoedema measures that help keep the flow of lymph going and reducing the lymphoedema.

If you notice any swelling in your arm, hand or chest, always get it checked by your doctor or nurse. The earlier lymphoedema is diagnosed, the easier it is to manage and treat successfully.

Early menopause or menopausal symptoms

Some treatments can cause an early or temporary menopause. Hormonal therapy can cause side effects that are the same as menopausal symptoms.

Your symptoms may include:

- hot flushes and sweats
- vaginal dryness
- passing urine more often

- difficulty sleeping
- psychological effects.

There are many simple ways of managing these symptoms.Choosing which are right for you will depend on your personal preferences, the possible risks and benefits of each approach, the type and severity of your symptoms.

Hot flushes and drenching sweats

This is the most common menopausal symptom. Although the exact cause is unknown, body temperature control seems to be affected by falling estrogen levels. Hot flushes can vary from a mild feeling of warmth in the face to more severe symptoms such as drenching night sweats that affect the whole body.

Hot flushes generally last for about 4-5 minutes. During a hot flush you may feel sudden warmth in your face, neck and chest, and you may become flushed and perspire. Some women feel their heart beating faster (palpitations) during a flush.

If you have flushes at night, these may affect your sleep. Night sweats can disrupt your sleep pattern, especially if you need to change your night clothes and bedding.

It's difficult to completely stop hot flushes and sweats, but their frequency or intensity can often be reduced. Using a combination of some of the approaches below is often most successful at controlling or reducing flushes.

Be aware of triggers for hot flushes

Certain situations may bring on or trigger a hot flush. For example, getting too warm, drinking tea, coffee or alcohol, or eating spicy foods. Keeping a record of when you have flushes can help you find out what triggers them, so that you can try to avoid these triggers.

Even if you don't have obvious triggers, keeping a record can help to measure how much a treatment for hot flushes is helping.

Practical tips

There's lots of practical advice available to help women cope with hot flushes. Here are a few tips:

- Wear natural fabrics, such as cotton, and dress in layers, so you can remove clothes as needed.
- Use cotton sheets and have layers of bedding.
- Keep the room temperature cool or use a fan.
- Have cold drinks rather than hot ones
- Try some complementary therapies, such as controlled breathing, yoga, etc.

If these symptoms are very much troubling, please discuss with your doctor for the appropriate advice.

Vaginal dryness

Having a low level of estrogen can cause vaginal dryness and itching, and make having sex uncomfortable or painful Non-hormonal creams and water-based lubricants can help to reduce dryness and any discomfort during sex.

Your doctor can tell you which product is most suitable for you. Your treatment should be regularly reviewed by your doctor, and you should tell them about any new symptoms. Some creams may damage condoms and diaphragms, so you may need to use another form of contraception to avoid pregnancy.

Hormone-based treatments for vaginal dryness

Some treatments contain a small amount of estrogen. The long-term risks of using products containing estrogen after breast cancer are unknown. However, some breast specialists think very little of the estrogen is absorbed and may prescribe some of these treatments for short periods of time.

Lower sex drive

A lower sex drive is a symptom of the menopause. HRT is usually the most effective treatment for this but isn't usually recommended in women who've had breast cancer. A lower sex drive can also happen as a result of coping with the cancer and its treatments.

Other menopausal symptoms such as hot flushes and vaginal dryness can also reduce your interest in sex. Treating these may help to improve your sex life. Talk to your doctor or specialist nurse if you are having sexual problems as there may be treatments that can help, or they may be able to refer you to a sex therapist or counselor. Our booklet on cancer and sexuality has more information.

Passing urine more often

You may pass urine more often, have some urine leakage or be more prone to urinary tract infections.

It's important to drink enough fluid each day (at least 2-3 pints/1.5 litres) to keep your bladder healthy. If you don't drink enough, your urine will become concentrated and irritate the bladder. You'll also be more likely to develop urinary tract infections.

If you have problems with urine leakage, doing regular pelvic floor exercises (Kegel exercises) can help. These exercises strengthen the muscles that hold urine in the bladder. Your nurse or doctor can explain how to do these exercises.

Speak to your doctor if you develop symptoms of a urinary tract infection. Symptoms include cloudy or smelly urine, and pain, burning sensation or discomfort when passing urine, lower abdominal pain at the end of urination (a symptom of bladder inflammation or cystitis).

Difficulty sleeping

You may have difficulty sleeping because of hot flushes, sweats or anxiety. The following suggestions may help you to relax and sleep well.

A warm drink, brushing your teeth or reading in bed for a while can let your brain know that it's time to sleep.

Sleep for the right amount of time without oversleeping - too much time in bed can affect the quality of your sleep. Also, wake up and go to bed at the same time each day.

Get out of bed if you can't sleep, and try reading, or listening to some soothing music. Wait until you feel tired again, and then go back to bed.

Breathing exercises and relaxation techniques, or listening to relaxation CDs, tapes or podcasts, can help reduce anxiety and sleeplessness. Your doctor can prescribe sleeping tablets for a short period of time - these may help you re-establish a sleep pattern.

Emotional and Psychological symptoms

These can include mood swings, feeling anxious, feeling emotionally very labile and problems with concentration and memory. Many women find it helpful to talk through their feelings with family and friends, or their doctor or nurse. A number of organizations provide support to women going through the menopause. Some women may find counseling helpful. Your doctor can give you more advice.

Reducing other complications caused by an early menopause

An early menopause can increase your risk of bone thinning (osteoporosis) and heart disease. There are ways of reducing these risks.

Osteoporosis

Estrogen helps maintain bone calcium levels and bone density, so the risk of osteoporosis increases after the menopause. Regular weight-bearing exercises such as walking, dancing, hiking and gentle weight-lifting will help maintain bone density. Swimming isn't as helpful, because your bones aren't supporting your weight while you swim. If you already have osteoporosis, avoid exercises that put strain on your bones, such as jogging. A physiotherapist or your doctor can give you further advice about exercise after breast cancer.

It's important to make sure that you get enough calcium and vitamin D in your diet. Dairy products are the best source of calcium, but if you prefer not to eat them you can get calcium from eggs, green leafy vegetables, nuts, and whole fish .Vitamin D helps the body use calcium effectively.

A well-balanced diet will normally give you all the calcium and vitamin D you need, but calcium and vitamin D supplements may also be helpful. Your specialist can advise you on this.

Smoking and drinking alcohol can reduce your calcium levels. Stick to sensible drinking guidelines, and if you smoke, the healthiest option is to give up.

If other people in your family have had osteoporosis, you may want to talk to your cancer specialist about drugs called bisphosphonates, which can help prevent osteoporosis.

Tamoxifen, a hormonal drug commonly used to treat early breast cancer, may help to protect the bones in post-menopausal women. A drug called raloxifene (Evista®) can also help prevent osteoporosis.

However, aromatase inhibitors such as anastrozole, which are also commonly used to treat early breast cancer, can increase the risk of osteoporosis.

Guidelines recommend women have their bone health (density) checked by having a special bone scan called a DEXA scan before treatment with an aromatase inhibitor. Depending on the results, you may be prescribed bone-strengthening drugs (called bisphosphonates) to minimize the risk of problems. Your bone health can be monitored during and after treatment.

Heart disease

The risk of heart disease in women increases after the menopause, so you need to follow the well-established advice on reducing your risks:

- If you smoke, stopping smoking is the healthiest decision you can make.
- Eat less animal fat (especially red meat), choose low-fat dairy products and eat more fresh fruit and vegetables.
- Do regular exercise.

If there's heart disease in your family, you may wish to talk to your cancer specialist or your general physicians about using medicines to try to prevent it.

6. Well-being and recovery

After breast cancer treatment, some women choose to make some positive lifestyle changes. It's not to say you didn't follow a healthy lifestyle before, but you might now feel you want to focus more on making the most of your health.

Eat well and keep to a healthy weight

After treatment, it's not unusual for women to find they've put on some weight. This can happen with chemotherapy and hormonal therapy, which you take for a number of years. When you're feeling up to it, you can check with your general physician if your weight is within the normal range for your height.

There's some evidence that keeping to a healthy weight after the menopause may help reduce the risk of breast cancer coming back. We already know it reduces the risk of heart problems, diabetes and developing some other cancers.

Try to:

- only eat as much food as you need
- eat a balanced diet with lots of fruit and vegetables
- eat less saturated fat and sugar
- become more physically active.

There's also more information about healthy eating, which you might find helpful.

Get physically active

Being physically active helps to keep your weight healthy and can reduce stress and tiredness. It helps to keep your bones strong and your heart healthy. There is some evidence that regular physical activity may help to reduce the risk of breast cancer coming back.

Stick to sensible drinking

Stick to sensible drinking guidelines, which recommend that women drink less than two units a day or 14 a week. Try to have a few alcohol-free days a week.

Getting help and support

Different people can help you during and after treatment.

Practical help

If you need help at home during or after treatment, a nurse or hospital social worker may be able to arrange this.

Emotional help

It's common to have different and sometimes difficult feelings after cancer treatment. But as you recover and get back to your everyday life, these usually get easier to deal with. Talking to family and friends often helps. If you think you may be depressed, or feel helpless or anxious a lot of the time, talk to your cancer specialist or nurse. They can refer you to a psychologist or counselor who specializes in the emotional problems of people with cancer.

Support groups

Self-help or support groups offer a chance to talk to other women who understand what you're going through.

7. Your feelings and relationships

Most people feel overwhelmed when they are told they have cancer, and have many different emotions. These are part of the process you may go through when dealing with your illness. Partners, family members and friends often have similar feelings and may also need support and guidance to help them cope.Some people try to relate it with bad conduct/sins in the past; this is not so and anybody can be affected with cancer. Also, this is not a contagious disease and you can live your life normally with your family.

Reactions differ from one person to another - there's no right or wrong way to feel. We describe some of the common emotional effects of cancer here. However, reactions vary and people have different emotions at different times.

JASCAP has a series of booklets on the following topics relating emotional aspects of cancer.

Talking about cancer

Talking to children and teenagers when an adult has cancer

Talking with someone who has cancer

Making or changing your Will

When Cancer Returns

Emotional effects of cancer

Looking after someone with cancer

JASCAP has a series of booklets on the following topics relating physical aspects of cancer.

Dietary advice for cancer patients

Eating Hints Before During and After Cancer Treatment

Cancer and your sex life

Cancer pain

Control of common cancer symptoms

Other symptoms and side effects of cancer and its treatments

Life After Cancer Treatment

Side effects of cancer treatment

Coping with fatigue

Physical activity and cancer treatment

Please also note that all these booklets (PLUS this booklet itself), in various Indian languages are available on our website www.jascap.org for free download.

XXXXX

We hope you found the information in this booklet helpful to you. We will appreciate if you could take some time to give feedback about the contents of the book.

For further information/suggestion, you may write to the following people

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Important

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