Chemotherapy for breast cancer

This booklet explains what chemotherapy is, how and when it's given, and the most common side effects it can cause.

This information is by Breast Cancer Care.

We are the only specialist UK-wide charity that supports people affected by breast cancer. We've been supporting them, their family and friends and campaigning on their behalf since 1973.

Today, we continue to offer reliable information and personal support, over the phone and online, from nurses and people who've been there. We also offer local support across the UK.

From the moment you notice something isn't right, through to treatment and beyond, we're here to help you feel more in control.

For breast cancer care, support and information, call us free on **0808 800 6000** or visit **breastcancercare.org.uk**

breast
cancer
care

Introduction

This booklet is about chemotherapy for treating breast cancer. It includes information about what chemotherapy is, what treatment involves and the side effects it may cause.

It's common to feel anxious or frightened about having chemotherapy. Not knowing what to expect can be very distressing. Finding out about your chemotherapy before it starts can help.

Many people worry about the side effects they might get. But most side effects can be controlled. If you're having chemotherapy, you should be told what side effects to report as well as who to contact, day or night, if you have any concerns or are unwell.

Your chemotherapy team and breast care nurse can help with any questions you have. You can also call us free on **0808 800 6000** for information and support.

We have a range of services that can help you during and after treatment. For example, on our online Forum, you can find people going through treatment at the same time as you on the monthly chemotherapy threads.

We also have booklets and online information on specific chemotherapy drugs and drug combinations.

You can find out about our support services and how to order publications towards the end of this booklet.

On page 9, there's a glossary to help you understand some of the terms used in this booklet.

What is chemotherapy?

Chemotherapy is a treatment using anti-cancer drugs to destroy cancer cells.

Different types of chemotherapy drugs are used to treat breast cancer. They can be given in different ways and in different combinations.

How chemotherapy works

Chemotherapy destroys cancer cells by interfering with their ability to divide and grow.

Normal cells in your body divide and grow all the time in an ordered and controlled way. However, cancer cells divide and grow in a disordered and uncontrolled way. Different chemotherapy drugs work in different ways and interfere with the cancer cells at different times in their growth. This is why a combination of drugs is often used.

Chemotherapy affects cells throughout the body.

Chemotherapy for primary breast cancer

Primary breast cancer is breast cancer that hasn't spread beyond the breast or lymph nodes (glands) under the arm.

Chemotherapy is commonly given in addition to surgery and/or radiotherapy to treat primary breast cancer.

After surgery

Chemotherapy is given after surgery to reduce the risk of cancer coming back in the future. Treatment usually starts within a few weeks of your operation.

When chemotherapy is used after surgery, it's known as adjuvant chemotherapy.

Before surgery

Chemotherapy may be given before surgery to slow the growth of rapidly growing breast cancer and reduce the chance of it spreading to other parts of the body.

Or it might be given to shrink a larger breast cancer before surgery. This may mean breast-conserving surgery is an option, rather than a mastectomy.

People with certain types of breast cancer, such as triple negative breast cancer or inflammatory breast cancer, or whose breast cancer is HER2 positive may be more likely to have chemotherapy before surgery.

When chemotherapy is used before surgery, it's known as primary or neo-adjuvant chemotherapy.

Do I need chemotherapy?

If you've got primary breast cancer, whether you're offered chemotherapy depends on factors such as:

- the size of your breast cancer
- whether the lymph nodes are affected
- the grade of your cancer (how different your cancer cells are from normal breast cells and how quickly the cancer cells are growing)
- the oestrogen receptor and HER2 status

Our booklet **Understanding your pathology report** explains these in more detail.

Your general health and any other medical conditions you have will also be considered.

Estimating the benefit

The benefit of chemotherapy might be clear for some people but less clear in other cases. Your cancer specialist may use an online program to help estimate the benefit you might expect to get from chemotherapy. They may be able to show you a graph of this information, or explain the benefit as a percentage.

Genomic assays (also called gene expression profiling or gene assays)

When the benefit of chemotherapy is less certain, your specialist team may suggest a test called a genomic assay.

These tests look at groups of genes found in the breast cancer. They help identify who is most likely to benefit from chemotherapy and how likely the cancer is to return (recurrence).

The tests are carried out on breast tissue removed during surgery, usually in a laboratory away from your hospital. Genomic assays are not suitable for everyone and sometimes don't provide a clear answer.

You can ask your specialist team whether this type of test would be suitable for you. Not all of the tests are available on the NHS.

The following are examples of genomic assay tests.

Oncotype DX predicts how likely the cancer is to return and the likely benefit of having chemotherapy. The result, called the recurrence score, is reported as a number between 0 and 100. The higher the score, the greater the risk of recurrence of an invasive breast cancer, and the more likely it is chemotherapy will be recommended.

EndoPredict predicts how likely the cancer is to spread within 10 years. The result, called the EPclin score, is reported as high risk or low risk.

Prosigna Breast Cancer Prognostic Gene Signature Assay predicts how likely the cancer is to spread within 10 years. The result is reported as low, intermediate or high risk.

Making decisions

You may be asked to decide if you want to have chemotherapy.

It can be difficult to decide whether or not to go ahead with the treatment. The decision is a personal one and you'll need to weigh up the likely benefits against the potential side effects.

You can talk it through with your cancer specialist or breast care nurse, who can answer your questions and support you with your decision.

You can also call us on **0808 800 6000** to talk about your options or to be put in touch with our Someone Like Me service, where you can speak to someone who has faced a similar decision.

Chemotherapy for secondary breast cancer

Chemotherapy can be given to people with secondary breast cancer. This is when breast cancer cells have spread to another part of the body. Secondary or metastatic breast cancer can be controlled, sometimes for many years, but cannot be cured.

Chemotherapy can be used to shrink or slow the growth of secondary breast cancer. It can also help reduce some symptoms.

Your oncologist may also give other treatments before or alongside chemotherapy. For example, you might have hormone therapy or targeted therapy depending on the features of your cancer. Radiotherapy may also be given depending on where the secondary breast cancer is and the symptoms it's causing.

Our **Secondary breast cancer information pack** and individual secondary breast cancer booklets contain more information about these treatments.

Finding support

You can chat to other people living with secondary breast cancer on our online Forum. You can also meet other women with a secondary diagnosis and get information and support at a Living with Secondary Breast Cancer meet-up. Live Chat is a weekly private chat room where you can talk about whatever's on your mind.

For more information about the support available, go to **breastcancercare.org.uk** or call the Helpline on **0808 800 6000**.

Glossary of breast cancer terms

Adjuvant Treatment given in addition to other treatment, for example chemotherapy given after surgery.

Breast-conserving surgery Also called wide local excision or lumpectomy. Removal of cancer with a margin (border) of normal breast tissue around it.

Grade System used to classify cancer cells according to how different they are to normal breast cells and how quickly they're growing.

HER2 A protein involved in the growth of cells. Around 15–20% of breast cancers have higher than normal levels of HER2 which stimulates them to grow. These are called HER2 positive breast cancers.

Inflammatory breast cancer A rare type of breast cancer where the skin of the breast looks red, and may feel warm and tender (inflamed).

Mastectomy Surgery to remove all of the breast tissue including the nipple area.

Neo-adjuvant Cancer treatment, such as chemotherapy, given before surgery.

Oestrogen receptors Receptors within the cell that bind to the hormone oestrogen, stimulating the cancer to grow. Breast cancer can be oestrogen receptor positive or oestrogen receptor negative.

Oncologist A doctor who specialises in cancer (oncology).

Triple negative breast cancer Breast cancer that is oestrogen receptor negative, progesterone receptor negative and HER2 negative.

Chemotherapy cycles and regimes

Chemotherapy is most commonly given as a series of treatments with a break between each treatment to give your body time to recover from any short-term side effects. The treatment and period of time before the next one starts is known as a cycle.

You may have treatment weekly or every two or three weeks.

You may have one drug or a combination of two or three drugs. The exact type and dose of chemotherapy will be tailored to suit your individual situation. The drugs used, the dose, how often they're given and the number of cycles may be called your chemotherapy regime or regimen.

Dose-dense chemotherapy

Dose-dense chemotherapy is being trialled and is not standard treatment. Dose-dense chemotherapy means the drugs are given with less time between treatments than in a standard treatment plan, although the same total dose of chemotherapy is given.

Where chemotherapy is given

Unless you're having chemotherapy as tablets (see page 14), you'll normally be given your treatment at hospital as an outpatient or day case, which means you'll be able to go home on the same day. With some types of chemotherapy you may be given your first treatment as an inpatient and will need to stay in hospital overnight.

You may be at the hospital for a short time only. However, because of tests, waiting times and how long it takes to prepare and give the chemotherapy drugs, some people are there for most of the day.

You might find it helpful to take things to pass the time as well as snacks and drinks. You could ask someone to go with you to keep you company.

Before you start chemotherapy

Before starting your treatment many hospitals will arrange a chemotherapy information session. At this appointment a nurse will discuss how and when your chemotherapy will be given and how side effects can be managed. You may have extra blood tests and some people might be given an ECG (electrocardiogram), a simple test that checks your heart rhythm. Your height and weight will also be measured.

Contact numbers will be given so you know who to phone if you have any questions or concerns.

You will usually be asked to sign a consent form before you start chemotherapy. The benefits and risks of the treatment should be explained before you sign.

You'll usually be given anti-sickness (also called anti-emetic) drugs before each chemotherapy treatment. The drugs you're given will depend on the type of chemotherapy you're having, but will often include a steroid drug called dexamethasone as well as other anti-sickness medication.

Shortly before each cycle of treatment, and sometimes in between, you'll have a blood test. This is because if the number of blood cells in the body is too low, treatment may need to be delayed (see page 16 for an explanation of how chemotherapy affects the number of blood cells).

Things to consider before chemotherapy

- See your dentist for a check-up before chemotherapy begins. See page 22 for information on dental health during treatment.
- Chemotherapy can cause hair loss (see page 18). Some people find it helps if they're prepared, for example by cutting their hair shorter or choosing a wig.
- If you're concerned about how chemotherapy may affect your fertility (see page 27), it's important to discuss this with your specialist team before you begin treatment.
- You should be given a 24-hour contact number or told who to contact if you feel unwell at any time during your treatment, including at night or at the weekend.

How chemotherapy is given

Chemotherapy can be given in several ways. For breast cancer the drugs are most commonly given:

- into a vein (intravenously)
- by mouth as tablets or capsules (orally)

Intravenous chemotherapy

There are various ways that intravenous chemotherapy can be given depending on factors such as how easy it is for chemotherapy staff to find suitable veins and your preferences.

Cannula

The most common way of giving chemotherapy involves inserting a small needle and plastic tube called a cannula into a vein, either in the back of the hand or lower arm. The needle is removed and the plastic tube left in place.

The diluted drugs are then slowly injected into the vein. If a large volume of fluid is used it can be given as an infusion (drip) through the cannula over a fixed period of time.

The cannula is taken out after you have had the drugs and a new one is inserted before each cycle of chemotherapy.

Chemotherapy is usually given into a vein in the arm on the opposite side to where you had your surgery, as this may help reduce the risk of lymphoedema developing (swelling of the arm, hand or breast area caused by a build-up of lymph fluid). But if this isn't possible the arm on the same side as your surgery may be used. This is also the case if you have had surgery on both sides.

If you have lymphoedema, the cannula will be placed in the arm on the opposite side to where you had surgery.

Other intravenous devices

Although a cannula is the most common way of giving chemotherapy, a central venous access device is sometimes used instead. This stays in place throughout the course of the treatment and the chemotherapy is given through it.

Various types of central venous access device are described below.

Skin-tunnelled catheter (Hickman or Groshong line)

A skin-tunnelled catheter is a fine silicone tube that's inserted into a vein through a small cut in the chest. You may hear this referred to as a Hickman or Groshong line.

It can stay in place for several months, which means you don't need to have a cannula put into the vein each time you're given the chemotherapy drugs. Blood samples can also be taken from the catheter.

The catheter is usually put in under a local anaesthetic but a general anaesthetic can be used if necessary.

Your chemotherapy nurse will explain how to take care of your catheter to minimise the risk of infection. After you have completed all your treatment the catheter will be removed under a local anaesthetic.

Peripherally inserted central catheter (PICC)

A PICC is inserted into a vein in your arm, at or above the bend in your elbow, and extends into the large vein leading to your heart. It stays in place until your whole course of treatment is finished. It's usually put in under a local anaesthetic.

While you have a PICC it will be covered by a dressing and you'll be given instructions on how to care for and change this dressing. Blood samples can also be taken from this device. When it's no longer needed, the PICC will be removed by a nurse or doctor.

Implanted port

An implanted port is a small device connected to a thin tube (catheter). It's put under the skin, usually in the chest or arm. The other end of the tube goes into a large vein just above the heart. The port is hidden but can be felt under the skin.

Chemotherapy drugs are given directly into the port by puncturing it each time with a special type of needle. It can also be used to take blood samples.

An implanted port is usually put in using a local anaesthetic.

When it needs to be removed a small cut is made over the site of the port using local anaesthetic. The port is then removed and the catheter is taken out of the vein. The wound is stitched and covered with a dressing. You'll be given instructions on caring for your dressing and what to do if you feel sore or bruised after having the port removed.

Blood clots

If you have a Hickman, Groshong or PICC line, it's possible for a blood clot to form in your vein at the end of the line. You may be given medication to help prevent this from happening.

Contact your hospital doctor or nurse immediately if you have any of the following symptoms:

- swelling, redness or tenderness in the arm, chest area or up into the neck
- shortness of breath
- tightness in your chest

If a blood clot forms, you'll be given medication to dissolve it. Your line may need to be removed.

See page 26 for more information about blood clots.

Oral chemotherapy

Oral chemotherapy is taken by mouth, either as tablets or capsules. Oral chemotherapy is usually taken at home.

The hospital pharmacist or your chemotherapy nurse will give you instructions on how to handle and store the chemotherapy. They'll also tell you when to take it, and you'll be given other written instructions such as whether or not to take it with food.

If you can't take your medicines for any reason or if you vomit after taking your tablets, contact your treatment team immediately for advice.

The drugs you're given by the hospital make up a complete course of treatment, and it's important to take them exactly as they've been prescribed. Always read the labels on the boxes before you leave the hospital – if the instructions are unclear, ask your nurse or doctor before taking any of the drugs.

Oral chemotherapy can cause side effects similar to treatment given intravenously. You will still need regular blood tests.

Electrochemotherapy

Electrochemotherapy, sometimes called ECT, is a treatment for breast cancer that has spread to the skin. Electrochemotherapy is a relatively new treatment and is not available everywhere.

It combines a low dose of a chemotherapy drug with electrical impulses given directly to the areas being treated using an electrode. This allows the chemotherapy to work in the treated areas only, with little or no effect in other areas.

If this is a suitable treatment option for you, your specialist team can refer you to the nearest available location for treatment.

Side effects of chemotherapy

Side effects of chemotherapy are usually temporary and most can be controlled.

Chemotherapy affects people in different ways, and two people having the same drugs may feel completely different to each other during the course of their treatment. Some people have very few side effects and can continue with their usual activities, while other people find their lives are affected more.

Some of the most common side effects are:

- increased risk of infection
- anaemia (a drop in the number of red blood cells)
- bruising and bleeding
- feeling sick and vomiting
- hair loss or thinning
- sore mouth
- taste changes
- fatigue

Your hospital team will give you information about your drugs, details of any side effects they may cause and how these could be controlled.

Before starting chemotherapy you should be given a 24-hour contact number or told who to contact if you feel unwell at any time during your treatment, including at night or at the weekends.

Between each cycle of chemotherapy, you’ll have an assessment to see how you’re feeling and whether you’ve had any side effects.

Effects on the blood

Chemotherapy drugs can temporarily affect the number of healthy blood cells in the body. Blood cells – white blood cells, red blood cells and platelets – are released by the bone marrow (the spongy material in the hollow part of bones) to replace those naturally used up in the body. Chemotherapy reduces the ability of the bone marrow to make these cells.

You'll have regular blood tests throughout your treatment to check your blood count. If the number of blood cells is too low your next course of treatment may be delayed or the dose of chemotherapy reduced.

Risk of infection

When the white blood cells fall below a certain level, it's known as neutropenia. Not having enough white blood cells can increase the risk of getting an infection. Your resistance to infection is usually at its lowest point around 7–14 days after the chemotherapy has been given. The number of white blood cells usually returns to normal before your next course of chemotherapy is due.

Contact your hospital immediately if:

- **you have a high temperature (over 37.5°C) or low temperature (under 36°C), or whatever your chemotherapy team has advised**
- **you suddenly feel unwell, even with a normal temperature**
- **you have any symptoms of an infection, for example a sore throat, a cough, a need to pass urine frequently or feeling cold or shivery**

You may need antibiotics. Sometimes your doctor may recommend injections of drugs called growth factors to stimulate the production of white blood cells to reduce your risk of infection.

Anaemia

Having too few red blood cells is called anaemia. If you feel particularly tired, breathless or dizzy, let your specialist team know. A blood transfusion may be necessary during your treatment if the number of red blood cells falls significantly.

Bruising and bleeding

Chemotherapy can reduce the number of platelets, which help the blood to clot. You may bruise more easily, have nosebleeds or your gums may bleed when you brush your teeth. Tell your specialist team if you have any of these symptoms. A platelet transfusion can be given, although this is rarely needed as platelet levels usually correct themselves over time.

Tips

Taking the following precautions may help reduce the risk of infection and bleeding:

- regularly wash and dry your hands thoroughly
- clean any cuts and grazes and cover with a dressing or plaster
- avoid people who are unwell or may be infectious
- eat as healthily as possible, and follow any advice about food and drink given to you by your hospital
- drink plenty of fluids
- ensure that everything you eat is stored and cooked correctly

Nausea and vomiting

The likelihood of having nausea (feeling sick) and vomiting (being sick) after chemotherapy depends on the type and dose of drugs you're having. But nausea and vomiting can usually be controlled.

You'll be given anti-sickness medication, by mouth or intravenously, before each cycle of chemotherapy, as well as some anti-sickness tablets to take home. Several types of anti-sickness drugs are available. You may need to take a combination of drugs to relieve your nausea. This may include taking a low dose of steroids for a short time.

Tips

Drink plenty of fluids, such as water or herbal teas. Taking frequent sips is better than trying to drink large amounts in one go.

Eating little and often is a good way to combat nausea. Herbal teas such as mint or ginger can also help settle the stomach.

If you're concerned about your diet during chemotherapy, ask about seeing a dietitian.

If nausea and vomiting are affecting you, let someone in your specialist team know. If you have severe vomiting and can't drink any fluids without being sick, contact your hospital even if it happens at the weekend or during the night.

Nausea can start straight after chemotherapy, a few hours after or up to several days later. For some people it can last for a few hours and for others it can continue for several days.

People who are very anxious or prone to travel sickness or morning sickness in pregnancy may be more likely to experience vomiting.

Hair loss or thinning

For some people, hair loss can be one of the most distressing side effects of chemotherapy. The likelihood of losing your hair depends on the type and amount of chemotherapy drugs you're given. Not all chemotherapy drugs cause complete hair loss. Some cause thinning while others may not affect the hair at all.

Hair loss should be temporary and your hair should grow back after chemotherapy has finished. Sometimes hair starts to grow back before the end of chemotherapy.

Tips

Some people find it helps if they're prepared to lose their hair before it happens. For example, some people cut their hair shorter or shave it off before starting chemotherapy. If you shave your hair off, avoid using a razor or clippers without a guard to reduce the risk of scratching or cutting the skin, which could lead to infection.

For more information about hair loss – including tips on caring for hair and scalp during treatment, information on headwear such as wigs and scarves, and using makeup to recreate eyebrows and eyelashes – see our **Breast cancer and hair loss** booklet.

Hair loss usually begins within two to three weeks of starting treatment. As well as the hair on your head, you may lose your body hair including eyebrows, eyelashes, the hair in your nose and pubic hair. You may lose your body hair at a slower rate than the hair on your head.

There's some evidence that treatment with the chemotherapy drug docetaxel may lead to prolonged hair loss, patchy regrowth or permanent hair loss. Permanent hair loss is defined as incomplete regrowth of hair six months or more after finishing treatment. At the moment there's no definite evidence to say exactly how often this happens.

Scalp cooling (cold cap)

Cooling the scalp can sometimes prevent or reduce hair loss from the head for people having chemotherapy. It involves wearing a cold cap before, during and after you have chemotherapy drugs. Scalp cooling is thought to temporarily reduce blood flow to the hair follicles in the scalp, preventing the drugs from reaching and damaging them.

The success of scalp cooling depends on which chemotherapy drugs are used and varies from person to person. It's not available in all areas, so ask your specialist or chemotherapy nurse if it would be suitable for you.

Wigs

Some women wear a wig until their hair grows back. Most modern wigs look quite natural. They can be made from real or synthetic hair or a mixture of both, and are available in various colours and styles.

Many hospitals have an appliance officer or specialist wig fitter who can give you advice and fit you with a suitable wig. Ask your breast care nurse or chemotherapy nurse what's available in your area.

Synthetic wigs are available on the NHS. These are free in Scotland, Wales and Northern Ireland. In England, you'll usually have to pay a charge for an NHS wig. Or you may qualify for a free wig (for example, if you claim certain benefits) or for help towards paying for one if you have a low income.

Financial help may also be available from Macmillan Cancer Support. Your doctor, nurse or social worker will need to apply for you.

Some hospitals give patients a free synthetic wig even if they're not eligible for help towards the cost.

Human hair and bespoke wigs are not available on the NHS but you can buy them.

People whose hair loss is caused by chemotherapy don’t have to pay VAT on wigs bought from a shop or other supplier. To claim back the VAT you’ll need to complete a VAT form – which most stores will provide at the time of purchase – and post it to the address on the form. The tax can’t be claimed back at a later date.

If you’re being treated privately, ask your medical team or breast care nurse (if you have one) about the supply of wigs. Check to see if your private health scheme covers the cost of your wig.

Fatigue

Fatigue is extreme tiredness and exhaustion that doesn’t go away with rest or sleep. It can affect you physically and emotionally. It’s a very common side effect of breast cancer treatment and may last for weeks or months after treatment has finished. Occasionally fatigue is a long-term effect.

Fatigue can also be caused by conditions such as anaemia (low number of red blood cells). It’s important to let your team know if you’re affected by fatigue to rule out other conditions.

Fatigue affects people in different ways. If you continue to work through your chemotherapy or care for children, this may contribute to how tired you feel. Try to know your limits and don’t expect too much of yourself.

Tips

The following suggestions may help you manage tiredness and fatigue:

- **keep a fatigue diary** – regularly recording your fatigue level, as well as any activities you do and treatment you're having, can help identify the causes of fatigue and show changes in energy levels. This can help you plan your day to get the most out of times when you have more energy
- **do some physical activity** – there's strong evidence that exercise reduces fatigue. Aim to do regular, short amounts of activity or light exercise, such as walking or yoga. A local walking group can be a good way to get regular exercise and meet people
- **allow time to rest** between daily activities but try to limit a nap to less than 30 minutes so you sleep at night
- **complementary therapies** such as massage and relaxation can help improve wellbeing for some people. There are relaxation CDs and apps that can guide you through different techniques
- **drink plenty of fluids** as being dehydrated can make you more tired
- **eat healthily** – make the most of the times when your appetite is good, choosing a balance of healthy foods. You can find out more about diet during treatment in our **Diet and breast cancer** booklet
- **emotional support**, such as individual counselling or in a support group, may help reduce fatigue. If you can't attend a support group you could try our online Forum **breastcancercare.org.uk/forum**
- **accept offers of help** from others where possible

Macmillan Cancer Support produces a booklet called Coping with fatigue.

Sore mouth and dental problems

Chemotherapy may affect your mouth in a number of ways. It can cause:

- sore mouth and ulcers
- dry mouth, which can also increase the risk of tooth decay
- infection
- oral thrush
- bleeding gums

See your dentist for a check-up before chemotherapy begins. If you need any dental work speak to your oncologist about the best time to have this.

To help minimise dental problems:

- clean your teeth or dentures after each meal
- use a soft toothbrush
- use a mouthwash (often provided by the hospital)
- take regular sips of water to keep your mouth moist
- chew sugar-free gum to encourage saliva to be produced

If you have any mouth problems let your chemotherapy nurse or specialist team know as soon as possible.

There are different things that can help ease a sore mouth, including mouthwashes, protective gels and lubricants, and pain relief.

Tips

There's some evidence that keeping your mouth cold with ice, iced water or ice lollies while having some types of chemotherapy can minimise the risk of a sore mouth and ulcers. It's thought the coldness makes the blood vessels in the mouth narrow, reducing the amount of chemotherapy that reaches the mouth.

Adding gravies and sauces to your food can help keep your mouth moist and make swallowing easier.

Use a lip balm to keep your lips moistened.

The following things can cause irritation so you may want to avoid them:

- spicy or salty foods
- citrus fruits
- alcohol (also be aware of alcohol in mouthwash)
- smoking
- hard foods such as crisps or crusty bread
- very hot or cold drinks and foods

Taste changes

While you're having chemotherapy your taste can change. Some food may taste different, for example more salty, bitter or metallic. You may no longer enjoy some foods you used to enjoy.

You may want to experiment to find tastes and textures you find most appealing at this time. Your taste should return to normal once your treatment has finished, although for some people taste changes can last after treatment.

Skin changes

Some chemotherapy drugs can make your skin dry, more sensitive or prone to reactions.

Some chemotherapy drugs can also cause rashes. If you develop a rash tell your specialist team as soon as possible.

Tips

Moisturise your skin to help with dryness, but choose creams with the least amount of perfume and colour to minimise the risk of a reaction. Test on small area of skin first.

Take care in the sun by covering your skin and wearing a hat. Use a high-factor sunscreen and avoid the sun during the hottest part of the day (11am–3pm).

Nail changes

Chemotherapy may cause changes to the appearance of your nails. This can be a change in the nail colour or texture, such as ridges forming.

Nails can become more brittle and cracked. Occasionally the nail may lift off the nail bed and fall out.

As you’re more at risk of infection while having chemotherapy, it’s important to report any signs of infection such as redness, heat, swelling or pain in or under your fingernails and toenails.

Tips

Hand cream will help moisturise your hands, feet and nails.

Use gloves for household chores to protect your nails.

If your toenails are affected, avoid tight-fitting shoes.

Don’t wear false nails during chemotherapy as these can lead to infection or mask the signs of it.

Avoid nail varnish as it tends to dry the nails out more, or you could try a water-based version as this is less harsh.

Peripheral neuropathy

Peripheral neuropathy happens when nerves, most commonly in the fingers and toes, are damaged.

Symptoms of peripheral neuropathy can include:

- pain (often burning or shooting)
- numbness
- pins and needles or tingling
- a feeling of warmth or cold
- increased sensitivity
- difficulty doing ‘fiddly’ tasks such as fastening buttons

For some people the symptoms are mild and go away soon after treatment stops. However, for most people the symptoms gradually improve over the weeks and months after treatment has finished.

Some symptoms may not disappear completely and, occasionally, the symptoms can worsen even after the treatment has stopped. Speak to your doctor if any symptoms don’t improve.

Studies are looking at whether cold therapy (cryotherapy), using specially designed boots and gloves, reduces the risk of peripheral neuropathy with some chemotherapy drugs. It’s not yet known how effective this may be.

Cognitive impairment (‘chemo brain’)

Some people find treatment affects their ability to concentrate and makes them more forgetful. This is called cognitive impairment, but is sometimes referred to as ‘chemo brain’ or ‘chemo fog’. It usually improves over time after treatment has finished.

There’s not much evidence about the best way to treat it, but some of the tips to reduce cancer-related fatigue may help, including physical activity, eating a healthy diet and relaxation techniques to reduce stress.

Some people say mental exercises, such as crosswords and puzzles, help keep their mind active.

Effects on your digestive system

Chemotherapy can affect your digestive system in different ways. Some people get constipated, other people have diarrhoea.

Some chemotherapy drugs can make indigestion more likely. Some may also cause heartburn, which is a burning feeling in the lower chest.

Let your chemotherapy team know if you have any of these side effects. They can prescribe medications to help and can also give you information about diet. You can also be referred to a dietitian if necessary.

Your hospital will have its own guidelines, but if you have four or more episodes of diarrhoea within 24 hours contact your GP or specialist team. Drink plenty of fluids to avoid dehydration.

Blood clots

People with breast cancer have a higher risk of blood clots. Their risk is higher because of the cancer itself and some treatments for breast cancer. Having chemotherapy increases the risk of blood clots such as deep vein thrombosis (DVT). People with a DVT are at risk of developing a pulmonary embolism. This is when part of the blood clot breaks away and travels to the lung.

If the cancer has spread to other parts of the body (secondary breast cancer), this also increases the risk of blood clots.

Blood clots can be harmful but are treatable so it’s important to report symptoms as soon as possible.

If you experience any of the following symptoms contact your local A&E department, GP or specialist team straight away:

- pain, redness or discolouration, heat and swelling of the calf, leg or thigh
- swelling, redness or tenderness where a central line is inserted to give chemotherapy, for example in the arm, chest area or up into the neck
- shortness of breath
- tightness in the chest
- unexplained cough (may cough up blood)

Menopausal symptoms

Some women have menopausal symptoms. This is because chemotherapy affects the ovaries, which produce oestrogen.

If you have not yet reached the menopause, your periods may stop or become irregular during chemotherapy. Whether your periods return will depend on the type of drugs used, the dose given and your age.

Other common menopausal symptoms include:

- hot flushes
- night sweats
- mood changes
- joint aches and pains
- vaginal dryness

You can talk to your breast care nurse or specialist team about ways of coping with any of these symptoms.

Tips

For more information and tips on coping with menopausal symptoms, see our **Menopausal symptoms and breast cancer** booklet.

Effects on fertility

Chemotherapy causes changes in the ovaries, which can affect your ability to become pregnant. The likelihood of becoming infertile depends on the type of drugs used, the dose given, your age and your current fertility status.

It's important to discuss any fertility concerns with your specialist team before you begin your treatment. Your specialist team should offer you a referral to a fertility specialist to discuss the possibility of preserving your fertility. For more information, see our **Fertility and breast cancer treatment** booklet.

Fertility after breast cancer treatment is a topic discussed at our Younger Women Together events. Call us on **0808 800 6000** to find out more.

Longer-term effects of chemotherapy

Most chemotherapy side effects are temporary and disappear once your treatment is over.

For some people side effects can last longer or may develop months or years after chemotherapy has finished.

Some chemotherapy drugs can cause heart or lung problems, and some drugs increase the risk of getting another cancer in the future. However, these late effects are rare. Your specialist can talk to you about the benefits of treating your breast cancer with chemotherapy compared to the risk of these rare effects occurring.

Sex, contraception and pregnancy

Chemotherapy will almost certainly affect how you feel about sex and intimacy. You may not feel like being intimate when you're dealing with treatment, or you may find intimacy helps you feel more normal. Everyone's reaction will be different. There's more information about how breast cancer and treatment can affect intimacy on our website.

It's thought that chemotherapy drugs can't pass into vaginal fluids or semen, but this can't be completely ruled out as chemotherapy drugs can pass into the blood and some other body fluids.

For the first few days after chemotherapy, you may want to avoid unprotected intercourse, oral sex, or any contact that involves the sharing of body fluids to ensure that your partner is not exposed to the chemotherapy drugs. Most hospital specialists will advise using barrier protection such as condoms for a few days after treatment.

If you haven't been through the menopause, it's important to use contraception because chemotherapy drugs can harm a developing foetus in the first three months of pregnancy. It's still possible to become pregnant even if your periods become irregular or stop completely.

Your specialist will usually recommend barrier methods of contraception, such as condoms. The contraceptive pill is not usually recommended because it contains hormones. Emergency contraception such as the morning after pill can still be used.

An interuterine device (IUD or coil) can be used as long as it's not the type that releases hormones. If you have a coil in place that does release hormones, such as the Mirena or Jaydess, when you're diagnosed, you'll probably be advised to have this removed.

Complementary therapies

Many people feel that complementary therapies help them cope with the side effects of chemotherapy, even though there may not be the evidence to support this.

There are many different types of complementary therapies including acupuncture, aromatherapy, reflexology, herbal remedies and hypnotherapy. Check with your specialist team or GP before having any complementary therapies, and mention your breast cancer and treatment to any therapist you see. Doctors may advise avoiding some therapies (particularly herbal remedies) if there's a chance they could affect how your breast cancer treatment works.

Some therapies are available in NHS hospitals, so ask your specialist or breast care nurse what's available to you.

For more information, see our **Complementary therapies, relaxation and wellbeing** booklet.

Diet and supplements

You may be able to eat normally throughout chemotherapy or your eating habits may change because of the side effects of your treatment. Some people lose weight during treatment, while others gain weight.

There are many conflicting theories about diet and breast cancer, which can be confusing. It's important to eat and drink what you feel able to, maintaining a healthy, well-balanced diet wherever possible.

For more information about healthy eating during and after chemotherapy, see our **Diet and breast cancer** booklet.

Tell your specialist about any vitamin and mineral supplements you take or would like to start taking. The evidence is conflicting about how safe it is to take vitamin supplements, particularly high-dose antioxidants (including vitamins A, C and E, Co-enzyme Q10 and selenium), during chemotherapy. Some studies suggest they might make the chemotherapy less effective, while other studies point towards them helping reduce chemotherapy side effects. Because the safety evidence is not clear many specialists recommend not taking high-dose antioxidant supplements during chemotherapy. For the same reason, talk to your specialist about any herbal remedies or supplements you're taking or thinking of taking.

Travel

If you're planning a holiday or need to travel overseas, check with your specialist first. It's sometimes possible to arrange your treatment around your travel plans.

Going abroad may not always be advisable, particularly if you have side effects or are going to a country where you'll need live vaccine injections (see below).

If you're going somewhere hot, don't stay in the sun for long periods as your skin can burn more easily when the chemotherapy drugs are still affecting your system. It's a good idea to avoid the sun during the hottest part of the day (11am–3pm), to use a high-factor sunscreen and keep covered with light clothing and a hat.

Getting travel insurance while having treatment for breast cancer isn't always straightforward. Macmillan Cancer Support produces a booklet on travel and cancer.

Vaccinations

You shouldn't have any live vaccines while you're having chemotherapy. Live vaccines include measles, rubella (German measles), polio, BCG (tuberculosis), shingles and yellow fever.

Live vaccines contain a small amount of live virus or bacteria. If you have a weakened immune system, which you may do during chemotherapy, they could be harmful. It's safe to have these vaccines six months after your chemotherapy finishes. Talk to your GP or specialist before having any vaccinations.

If someone you live with needs to have a live vaccine speak to your specialist or GP. They can advise what precautions you may need to take depending on the vaccination.

Flu vaccine

The flu vaccine is usually recommended for people starting or having chemotherapy to reduce their risk of getting the flu. The flu vaccine is not a live vaccine so doesn't contain any active flu viruses.

Your immune system needs to be healthy in order to make the antibodies to the vaccine that protect you from the flu. This takes about two weeks to fully develop after having the vaccination.

Therefore, it's best to have the vaccination at least two weeks before your chemotherapy starts. If you're already having chemotherapy then you will need to talk to your specialist or breast care nurse about the best time to have your flu jab. This will usually be at a point in your chemotherapy cycle when your white blood cell count is recovering.

Finding support

Chemotherapy may be the only treatment you have or you may be going on to have other treatment such as radiotherapy, targeted therapy or hormone therapy. It's important to have the right support during and after treatment.

Feeling low, tired, irritable or tearful at any point during your treatment isn't unusual, and there are people who can help.

Let other people, particularly your family and friends, know how you're feeling so that they can support you. It can also help to discuss your feelings or worries with your specialist, chemotherapy nurse or breast care nurse.

Alternatively, a professional counsellor might be more appropriate if you want to talk through your feelings in more depth over a period of time. Your specialist team or GP can usually arrange this. Counselling may be available as part of a local support group or service and is also available privately.

You might also find it helpful to share your feelings with someone who has had a similar experience to you. You can do this through our online Forum or Someone Like Me service.

Call Breast Cancer Care on **0808 800 6000**, visit **breastcancercare.org.uk** or see page 33 to find out about the support we offer.

Other organisations

Macmillan Cancer Support

General enquiries: 020 7840 7840

Helpline: 0808 808 0000

Website: macmillan.org.uk

Macmillan Cancer Support provides practical, medical, emotional and financial support to people living with cancer and their carers and families. It also funds expert health and social care professionals such as nurses, doctors and benefits advisers.

breast
cancer
care

4 ways to get support

We hope this information was helpful, but if you have questions, want to talk to someone who knows what it’s like or want to read more about breast cancer, here’s how you can.

Speak to trained experts, nurses or someone who’s had breast cancer and been in your shoes. Call free on **0808 800 6000** (Monday to Friday 9am–5pm, Wednesdays til 7pm and Saturday 9am–1pm).

Chat to other women who understand what you’re going through in our friendly community, for support day and night. Look around, share, ask a question or support others at **forum.breastcancercare.org.uk**

Find trusted information you might need to understand your situation and take control of your diagnosis or order information booklets at **breastcancercare.org.uk**

See what support we have in your local area. We’ll give you the chance to find out more about treatments and side effects as well as meet other people like you.
Visit **breastcancercare.org.uk/in-your-area**

We're here for you: help us to be there for other people too

If you found this booklet helpful, please use this form to send us a donation. Our information resources and other services are only free because of support from people such as you.

We want to be there for every person facing the emotional and physical trauma of a breast cancer diagnosis. Donate today and together we can ensure that everyone affected by breast cancer has someone to turn to.

Donate by post

Please accept my donation of **£10/£20/my own choice of £** ☐

I enclose a cheque/PO/CAF voucher made payable to
Breast Cancer Care

Donate online

You can give using a debit or credit card at
breastcancercare.org.uk/donate

My details

Name

Address

Postcode

Email address

We might occasionally want to send you more information about our services and activities

☐ Please tick if you're happy to receive email from us
☐ Please tick if you don't want to receive post from us

We won't pass on your details to any other organisation or third parties.

Please return this form to Breast Cancer Care, Freepost RRKZ-ARZY-YCKG,
Chester House, 1–3 Brixton Road, London SW9 6DE

About this booklet

Chemotherapy for breast cancer was written by Breast Cancer Care's clinical specialists, and reviewed by healthcare professionals and people affected by breast cancer.

For a full list of the sources we used to research it:

Phone 0345 092 0808
Email publications@breastcancercare.org.uk

You can order or download more copies from breastcancercare.org.uk/publications

We welcome your feedback on this publication: breastcancercare.org.uk/feedback

For a large print, Braille, DAISY format or audio CD version:

Phone 0345 092 0808
Email publications@breastcancercare.org.uk

Health & care information you can trust
The Information Standard Certified Member

Edition 7, next planned review 2020

When you have breast cancer, everything changes. At Breast Cancer Care, we understand the emotions, challenges and decisions you face every day, and we know that everyone's experience is different.

For breast cancer care, support and information, call us free on **0808 800 6000** or visit **breastcancercare.org.uk**

Central Office
Chester House
1–3 Brixton Road
London SW9 6DE
Phone: 0345 092 0800
Email: info@breastcancercare.org.uk