CHEMOTHERAPY FOR BREAST CANCER

BREAST CANCER NOW The research & support charity

We’re here

About this booklet

It’s completely natural to feel anxious about having chemotherapy to treat your breast cancer.

This booklet will help you understand and navigate your chemotherapy treatment. It includes information about what chemotherapy is, how it’s given, and the side effects it may cause.

Your treatment team and breast care nurse can help with any questions you have. We also have booklets and online information about specific chemotherapy drugs and drug combinations on our website **breastcancernow.org**

We have a range of services to help you during and after treatment. See page 40 for further details or call our helpline on **0808 800 6000**.

What is chemotherapy?

Chemotherapy is a treatment that destroys cancer cells using anti-cancer drugs.

How does chemotherapy work?

Normal cells in the body divide and grow all the time in an ordered and controlled way.

Cancer cells divide and grow in a disordered and uncontrolled way.

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

Different chemotherapy drugs work in different ways and affect cancer cells at different times in their growth. This is why a combination of drugs is often used and given in cycles. See page 8 for more information about chemotherapy cycles.

Chemotherapy also affects other normal cells throughout the body, which causes side effects (see page 17).

When is chemotherapy given?

Primary breast cancer

Before surgery

You may have chemotherapy before surgery to slow the growth of fast-growing breast cancer. Or you may have it to shrink a larger breast cancer before surgery. This may mean breast-conserving surgery is an option, rather than a mastectomy.

Chemotherapy given before surgery is called primary or neoadjuvant chemotherapy.

You may be more likely to have chemotherapy before surgery if you have inflammatory or triple negative breast cancer, or if your breast cancer is HER2-positive.

You can find more information about surgery, inflammatory breast cancer, triple negative breast cancer and HER2-positive breast cancer on our website **breastcancernow.org**

After surgery

You may have chemotherapy after surgery for primary breast cancer to reduce the risk of the cancer coming back or spreading. This is called adjuvant chemotherapy.

You may be given chemotherapy in combination with other treatments, such as targeted therapy.

Secondary breast cancer

Chemotherapy can also be used to treat secondary breast cancer. Secondary breast cancer is breast cancer that has spread to another part of the body, such as the bones, lungs, liver or brain.

Secondary breast cancer, also called metastatic breast cancer, can be treated but cannot be cured.

Chemotherapy aims to slow down and control the growth of secondary breast cancer and relieve symptoms.

Different chemotherapy drugs are used to treat secondary breast cancer. You may be given them on their own or in combination with other treatments. For example, depending on the features of your cancer you might also have:

- Hormone therapy
- Targeted therapy
- Immunotherapy

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

Chemotherapy and primary breast cancer

If you have primary breast cancer, whether you're offered chemotherapy will depend on:

- The size, stage and grade of your breast cancer
- The oestrogen receptor status
- The HER2 status
- Whether you have an inherited altered gene that increases breast cancer risk, such as BRCA1

Our booklet **Understanding your pathology results** explains these in more detail. You can also find out more about inherited altered genes in our **Family history of breast cancer: managing your risk** booklet.

Your treatment team will also consider your general health and any other medical conditions you have.

Benefits of chemotherapy

The benefits of chemotherapy might be clear for some people but less clear for others.

Your cancer specialist (oncologist) 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 treatment team may suggest tests called genomic assays.

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

The tests are carried out on breast tissue removed during surgery or during the original biopsy on your breast.

The results are provided separately from your pathology report. Your treatment team will consider them alongside your other pathology results to help them decide what treatments to recommend.

Genomic assays are not suitable for everyone. If any of these tests are suitable for you, your treatment team will discuss this with you.

Genomic assays you may be offered are:

EndoPredict

EndoPredict is a test that predicts how likely breast cancer is to spread to somewhere else in the body. It’s suitable for some people who will be taking hormone therapy for at least 5 years.

Oncotype DX

Oncotype DX is a test that predicts how likely breast cancer is to spread to somewhere else in the body. It’s suitable for some people who will be taking hormone therapy for at least 5 years.

The test gives a score between 0 and 100. People who score above a certain number are more likely to be offered chemotherapy.

Prosigna

Prosigna is a test that predicts how likely breast cancer is to spread to somewhere else in the body. It's suitable for some people who will be taking hormone therapy for at least 5 years.

You can find more information about these tests at **breastcancernow.org/chemotherapy-benefit**

Making decisions

Your treatment team may ask you if you want to have chemotherapy. This is a personal decision and you'll need to weigh up the likely benefits against potential side effects.

You can talk this through with your treatment team or breast care nurse. They can answer your questions and support you with your decision. You can also speak to our specialist nurses on **0808 800 6000** or at **breastcancernow.org**

Before starting chemotherapy

Before starting your treatment, a member of your treatment team will discuss how and when you'll have chemotherapy and how side effects can be managed.

You'll have blood tests and your height and weight will be measured.

You may also have tests to check your heart function, such as:

- An ECG (electrocardiogram) – a simple test that checks your heart rhythm
- An echocardiogram (echo) – an ultrasound scan of your heart
- A MUGA (multiple-gated acquisition) scan – a scan using a small amount of radioactive material to check how well the heart is working

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 overnight or at the weekends.

You'll be asked to sign a consent form before you start chemotherapy. The benefits and risks of the treatment should be fully explained to you before you sign it.

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 the anti-sickness medication.

Things to consider before chemotherapy

- Chemotherapy can cause hair loss (see page 21)
- Chemotherapy may affect your fertility (see page 33). If you're concerned about this, it's important to discuss it with your treatment team before you begin treatment

How is chemotherapy 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)

You may have 1 drug or a combination of 2 or 3 drugs. The exact type and dose of chemotherapy will be tailored to suit you. The drugs used, the dose, how often you have them and the number of cycles may be called your chemotherapy "regime" or "regimen".

How long you have chemotherapy will depend on your individual situation. Your treatment team will discuss this with you.

Chemotherapy cycles

You’ll normally have chemotherapy as a series of treatments with a break between each treatment. This allows your body time to recover from any short-term side effects. The treatment and period of time before the next one starts is called a cycle.

Cycles usually last between 1 and 6 weeks.

You’ll have a blood test shortly before, and sometimes in between, each cycle of treatment.

If the number of blood cells in your body is too low, your treatment may need to be delayed (see pages 17 to 19 for an explanation of how chemotherapy affects the number of blood cells).

Intravenous chemotherapy

How intravenous chemotherapy is given depends on factors such as how easy it is for your chemotherapy team to find suitable veins, and your preferences.

You’ll normally have your treatment at hospital as an outpatient or day case. This means you’ll be able to go home the same day.

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, you may be 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 may be able to take someone with you to keep you company. Talk to your chemotherapy nurse to find out if this is possible.

In some areas of the country, chemotherapy may be given in a mobile treatment centre or in your home. For more information about chemotherapy safety at home, visit Cancer Research UK’s website cancerresearchuk.org and search for “chemotherapy safety at home”.

With some types of chemotherapy, you may need to stay in hospital overnight for your first treatment.

Cannula

The most common way of giving chemotherapy involves inserting a small needle and a plastic tube called a cannula into a vein. It’s usually inserted in the back of your hand or lower arm. The needle is removed and the cannula is left in place. The cannula will be removed before you go home.

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

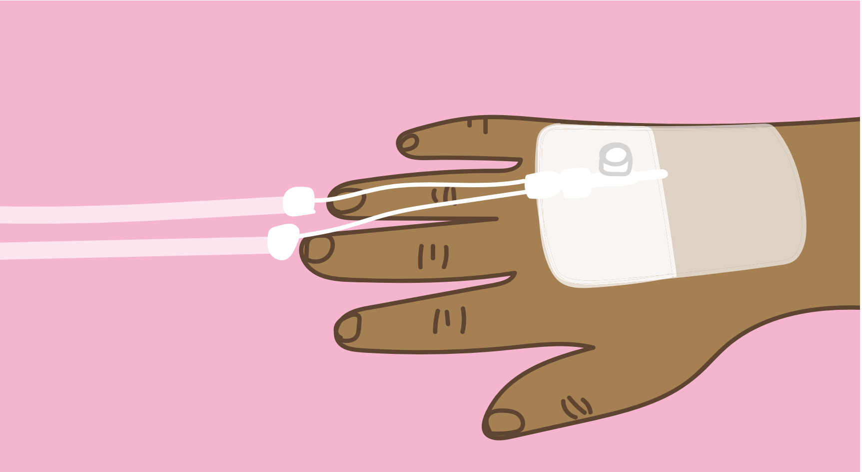

Image showing a cannula in the hand.

Risk of lymphoedema

Lymphoedema is swelling caused by a build-up of fluid in the body’s tissues. It usually affects the arm, but it may also affect the hand and fingers. Lymphoedema can also affect the breast, chest, and occasionally the shoulder or the area on the back behind the armpit.

Some people develop lymphoedema after surgery or radiotherapy to the lymph nodes under the arm and the surrounding area.

There’s no consistent evidence that having injections or intravenous medicines in your “at risk” arm (the arm the side of your operation) will increase your risk of lymphoedema.

While many treatment teams will give chemotherapy into a vein in the arm on the opposite side, practice can vary between hospitals. Some teams may give chemotherapy in the arm on the same side as your surgery, or alternate the arm used each cycle. This is also usually the case if you’ve had surgery on both sides.

If you have lymphoedema

If you have lymphoedema, the cannula will be placed in the arm on the opposite side to where you had surgery. If you have lymphoedema on both sides, your treatment team will talk to you about how your chemotherapy will be given.

Other ways of giving intravenous chemotherapy

Sometimes a central venous access device (a device inserted through a vein that fluids and medication can be given through) is used to give chemotherapy. This stays in place throughout your treatment.

There are different types of intravenous access devices.

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. It's also called a Hickman or Groshong line.

The catheter is usually put in under a local anaesthetic, but a general anaesthetic (medicine to make you sleep) can be used if necessary.

Your chemotherapy nurse will explain how to take care of your catheter.

It can stay in place for several months. Your treatment team can also take blood samples from it.

The catheter will be removed using a local anaesthetic.

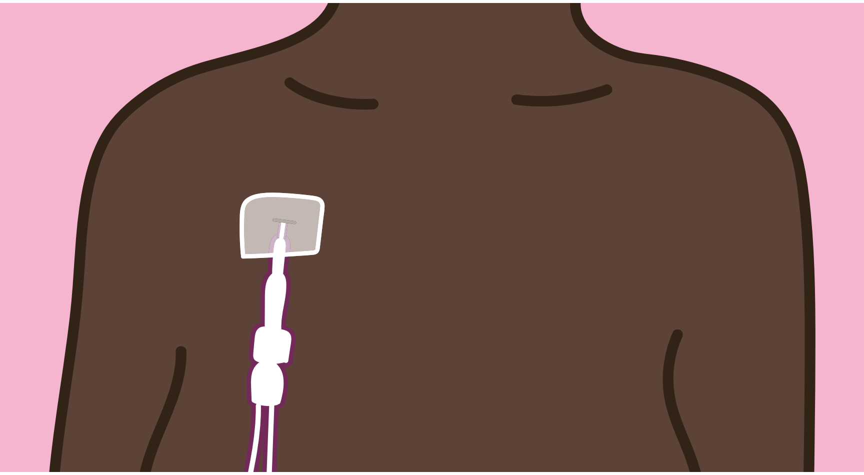

Image of a skin-tunnelled catheter in the chest.

Peripherally inserted central catheter (PICC)

A PICC is inserted into a vein in your arm, at or above the bend in your elbow, and into the large vein leading to your heart. It is usually put in under a local anaesthetic.

The PICC line will be covered by a clear dressing. You'll be given instructions on how to look after it and change the dressing.

It can stay in place throughout your treatment. Your treatment team can also take blood samples from it.

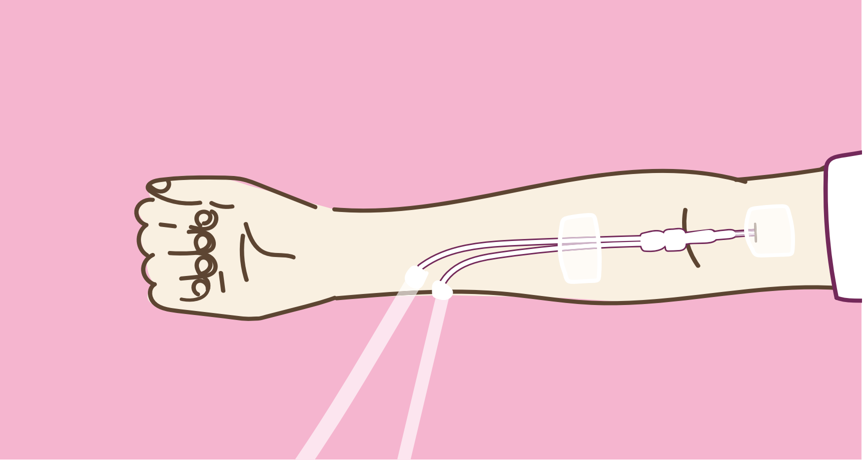

Image showing a PICC line in the arm.

Implanted port

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

It’s usually put in using a local anaesthetic. You may be given medication to help you relax.

Chemotherapy drugs are given directly into the port. The area over the port may be numbed with an anaesthetic cream before a special needle is pushed into the port to give the chemotherapy.

Your treatment team can also take blood samples from it.

The implanted port can stay in place throughout your treatment.

The port can be removed under a local or general anaesthetic. When it needs to be removed, a small cut is made over the site of the port. The port is 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 the port is removed.

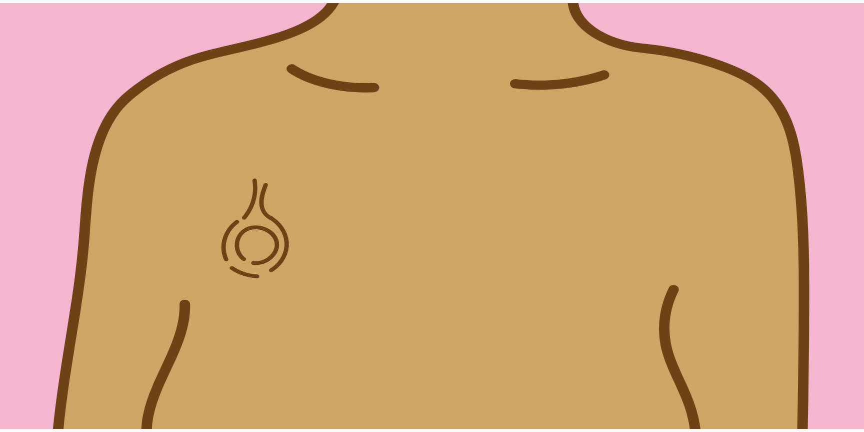

Image of an implanted port in the chest.

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.

Contact your treatment team or go to your local A&E department straight away if you have any of the following symptoms:

- Pain in your arm or leg
- Redness/discolouration of the skin of the arm or leg
- Heat and swelling of the arm or leg
- 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 that comes on suddenly
- Pain or tightness in the chest
- Unexplained cough or coughing up blood

Some symptoms may look different on different skin tones.

If a blood clot forms, you'll be given medication to dissolve it. Your line may need to be removed. See page 20 for more information about blood clots.

These lines can also get blocked or infected. You'll be given information about what to look out for.

Oral chemotherapy

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

The hospital pharmacist or your chemotherapy nurse will give you instructions on how to handle and store oral chemotherapy. They'll also tell you when and how to take it, for example if it should be taken with food.

The drugs you're given by the hospital make up a complete cycle of treatment, so it's important to take them exactly as they're prescribed.

Always read the labels on the boxes before you leave the hospital. If the instructions are unclear, ask your treatment team or pharmacist before taking any of the drugs.

If you cannot take your chemotherapy for any reason, or if you are sick after taking your tablets, do not take an extra dose. Contact your treatment team immediately for advice.

Just like intravenous chemotherapy, oral chemotherapy can cause side effects. You'll also need regular blood tests.

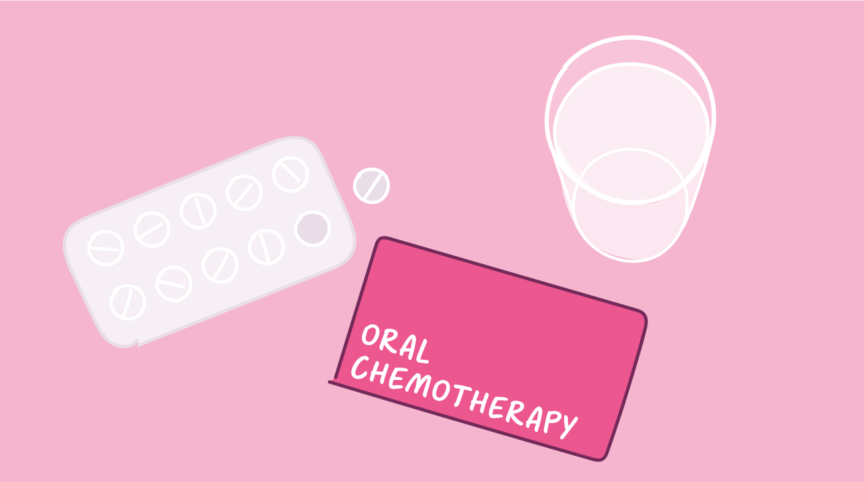

Image showing oral chemotherapy tablets.

Electrochemotherapy

Electrochemotherapy, sometimes called ECT, is a treatment for secondary breast cancer that has spread to the skin (skin metastases).

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

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

For more information, visit our “Secondary (metastatic) breast cancer in the skin” webpage at **breastcancernow.org**

Side effects of chemotherapy

Like any treatment, chemotherapy can cause side effects. Everyone reacts differently to drugs and some people have more side effects than others. These side effects can usually be managed and those described here will not affect everyone.

Your treatment team will give you information about the drugs you're having, details of any side effects they may cause and how these can be controlled or managed. You should be given a 24-hour contact number or told who to contact if you experience any side effects at any time during your treatment. This includes overnight or at the weekends.

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

If you're concerned about any side effects, regardless of whether they're listed here, talk to your treatment team as soon as possible.

Common side effects

Effects on the blood

Chemotherapy can temporarily affect the number of blood cells in the body. Blood is made up of red cells, white cells and platelets.

You'll have regular blood tests. If these show the number of blood cells is too low, your next cycle of treatment may be delayed or the dose of chemotherapy reduced.

Your treatment team may change the dose of a drug to suit you and help manage its side effects.

Risk of infection

Not having enough white blood cells can increase your risk of getting an infection. The number of white blood cells usually returns to normal before your next cycle of chemotherapy is due.

Your treatment team may give you guidelines to follow for reporting signs of an infection. But generally you should contact your hospital immediately if you have any of the following:

- A high temperature (over 37.5°C) or low temperature (under 36°C)
- Suddenly feeling unwell, even with a normal temperature
- Symptoms of an infection, such as a sore throat, cough, needing to pee often or feeling cold or shivery, even if you do not have a high temperature

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 overnight or at the weekends.

You may need treatment if you get an infection.

Sometimes your treatment team may recommend injections of drugs called growth factors. This helps the body produce more white blood cells to reduce your risk of infection.

Anaemia

Having too few red blood cells is called anaemia. If you feel breathless, dizzy or particularly tired, let your treatment team know.

Bruising and bleeding

Chemotherapy can reduce the number of platelets. Platelets help the blood to clot. If your platelets are low you may:

- Bruise more easily
- Have nosebleeds
- Notice that your gums bleed when you brush your teeth
- Take longer to stop bleeding if you cut yourself

Tell your treatment team if you have any of these symptoms.

Tips to help reduce the risk of infection

You can help reduce the risk of infection by:

- Regularly washing and drying your hands thoroughly
- Cleaning any cuts and grazes and covering them with a dressing or plaster
- Avoiding people who are unwell or may be infectious
- Eating as healthily as possible, and following any advice about food and drink given to you by your treatment team
- Drinking plenty of fluids
- Storing and cooking food correctly

Blood clots

People with breast cancer have a higher risk of blood clots. Having chemotherapy also increases the risk of blood clots such as a DVT (deep vein thrombosis).

If you have a DVT, there's a risk part of the blood clot could break away and travel to the lung. This is known as a pulmonary embolism (PE).

Blood clots can be life-threatening and should be treated quickly.

Contact your treatment team or go to your local A&E department straight away if you have any of the following symptoms:

- Pain in your arm or leg
- Redness/discolouration of the skin of the arm or leg
- Heat and swelling of the arm or leg
- 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 that comes on suddenly
- Pain or tightness in the chest
- Unexplained cough or coughing up blood

Nausea and vomiting

You may feel sick (nausea) or be sick (vomit) after having chemotherapy. This will depend on the type and dose of drugs you're having. But it can usually be controlled with anti-sickness medication.

You may start feeling sick straight after chemotherapy, a few hours after or up to several days later. It may only last for a few hours or it might continue for a few days.

You'll be given anti-sickness medication, as tablets or into a vein, before each cycle of chemotherapy. You'll also be given anti-sickness tablets to take at home.

Several types of anti-sickness drugs are available. You may need to take a combination of drugs to relieve your symptoms. This may include taking a low dose of steroids for a short time.

Contact your treatment team if you have persistent nausea, sickness or have difficulty keeping fluids down, even if it happens at the weekend or overnight.

Tips for reducing nausea

Drink plenty of fluids, such as water or mint or ginger 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 try to stop you feeling sick.

If you're concerned about your diet during chemotherapy, ask your treatment team to refer you to a dietitian.

Hair loss or thinning

Chemotherapy can cause hair loss. It's completely natural to find this upsetting.

How likely you are to lose your hair depends on the type and amount of chemotherapy drugs you're given. Not all chemotherapy will make you lose your hair. Some drugs don't cause any hair loss and some cause hair thinning. But others can make your hair fall out completely.

You may begin to lose your hair about 2 weeks after the first treatment, but it can happen earlier. Hair loss is usually gradual, although it can sometimes happen quickly, possibly over a couple of days.

As well as the hair on your head, you may lose your eyebrows, eyelashes, the hair in your nose, and other body hair. You may lose your body hair more slowly than the hair on your head.

Any hair loss is usually temporary. In most cases your hair will begin to grow back a few weeks after your chemotherapy treatment ends. Sometimes hair starts to grow back before the end of chemotherapy.

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 6 months or more after finishing treatment. We currently don't know exactly how often this happens.

If you're concerned about hair loss when making decisions about treatment, talk to your treatment team.

For more information about hair loss, see our booklet **Breast cancer and hair loss**.

Scalp cooling (cold cap)

Scalp cooling may stop you losing some, or all, of the hair on your head. This involves wearing a "cold cap" before, during and for 1 to 2 hours after your treatment. It works by reducing blood flow to your hair follicles, which reduces the amount of chemotherapy drugs reaching them.

How well the cold cap works depends on the drugs and doses used. It doesn't work for everyone. If you do keep your hair, you may find that it's patchy or thinner.

Scalp cooling is not available in all areas. Ask your treatment team if it's available at your hospital and whether they think it would be suitable for you.

Wigs

You may choose to wear a wig until your hair grows back.

Wigs can be made from real or synthetic hair, or a mixture of both, and come in different colours and styles.

Synthetic wigs are available on the NHS. They're 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.

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

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.

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

If your hair loss is caused by chemotherapy, you do not have to pay VAT on wigs bought from a shop or other supplier. To claim back the VAT, you'll need to complete and post a VAT form to the supplier. Most stores will provide this form at the time of purchase.

Financial help may also be available from different organisations and local initiatives. There may be a welfare and benefits service at your hospital.

If you're being treated privately, check to see if your private health scheme covers the cost of your wig.

Some people choose not to wear a wig and prefer to wear headscarves or hats. Others prefer not to wear anything. It's a personal decision so choose whatever you feel comfortable with.

Tips on coping with hair loss

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. These could scratch or cut the skin, which could lead to infection.

For more information about hair loss – including tips on caring for your 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.

You can also get support and information on hair loss from the charity Cancer Hair Care. Visit cancerhaircare.co.uk for more information.

Extreme tiredness (cancer-related fatigue)

Fatigue is extreme tiredness that does not go away with rest or sleep. It's a very common side effect of chemotherapy and may last for weeks or months after your treatment has finished.

If you think you have fatigue, tell your GP or treatment team. They can assess you and offer advice on how to manage your energy levels.

You can find more information on our website or by calling our helpline on **0808 800 6000**. Macmillan Cancer Support produces information on coping with fatigue.

Tips for managing fatigue

The following suggestions may help you manage fatigue:

- Keep a fatigue diary – recording your fatigue level each day, 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
- Try to be active – 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 naps to less than 30 minutes so you sleep at night
- Try relaxation techniques – these can help you relax and regain energy. There are many good relaxation apps, audio downloads and CDs that can help, such as the Calm and Sleepio apps
- Try complementary therapies – these include massage, acupuncture and mindfulness and can help improve fatigue for some people. Speak to your treatment team before trying complementary therapies
- Drink plenty of fluids – being dehydrated can make you more tired
- Try to 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
- Seek emotional support – individual counselling or a support group may help reduce fatigue. You could try talking to others who have gone through a similar experience. Find out more by visiting **breastcancernow.org/information-support/support-you**
- Accept offers of help from others where possible

Sore mouth

Chemotherapy may affect your mouth. It can cause:

- Sore mouth and ulcers
- Dry mouth, which can also increase the risk of tooth decay
- Infection
- Bleeding gums

Looking after your mouth, including your teeth and gums, is very important during treatment.

You'll be given mouthwash to try to reduce soreness and stop mouth ulcers developing. It's a good idea to use a small, soft toothbrush during this time.

If you do get a mouth infection, your treatment team or chemotherapy nurse can advise you about different mouthwashes or suitable medicine.

See your dentist for a check-up before chemotherapy begins. Avoid dental treatment during chemotherapy if possible.

If you do need to have dental work during treatment, talk with your treatment team about the best time to have this.

If you're having difficulty registering with a dentist, let your treatment team know. If you have any mouth problems, let your chemotherapy nurse or treatment team know as soon as possible.

Mouthcare tips

There's some evidence that keeping your mouth cold with ice, iced water or ice lollies while having some types of chemotherapy can reduce the risk of a sore mouth and ulcers.

Other tips to reduce 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
- Use artificial saliva sprays to help with dry mouth
- Chew sugar-free gum to encourage saliva to be produced
- Add sauces or gravies to your food to keep your mouth moist and make swallowing easier
- Avoid foods that can cause irritation such as citrus fruits and spicy, hard or salty foods
- Use a lip balm
- Avoid alcohol (also be aware of alcohol in mouthwash)
- Avoid very hot or cold drinks and foods
- Try to stop or limit smoking as this can cause irritation

Taste changes

You may notice taste changes while having chemotherapy. Some foods may taste different, for example more salty, bitter or metallic. You may no longer like certain foods you used to enjoy.

If this is the case, speak to your treatment team. They may be able to suggest ways of managing this. Your taste should return to normal once your treatment has finished.

See our booklet **Diet and breast cancer** for more information on dealing with changes to your taste and appetite during treatment.

Pain at the injection site

Pain, redness, discolouration or swelling can occur where the needle has been inserted or anywhere along the vein. Redness can be harder to see if you have black or brown skin.

Tell your chemotherapy nurse immediately if you have pain, stinging or a burning sensation around the cannula (small plastic tube) while you're being given chemotherapy.

Skin reactions

Chemotherapy drugs can make your skin dry or more sensitive. They can also cause rashes. Tell your treatment team as soon as possible if you develop a rash.

Some chemotherapy drugs can cause a skin reaction called hand-foot syndrome (palmar-plantar erythrodysesthesia). It usually affects the palms of the hands and soles of the feet, but you may also have symptoms in other areas such as the skin on your knees or elbows.

Hand-foot syndrome can sometimes make it harder to carry out daily activities. It can also have an impact on quality of life. Your treatment team may prescribe gels or creams to apply to the affected areas.

Ask your treatment team if they recommend any particular creams for your skin before using anything on it yourself.

You can find out more information about hand-foot syndrome on our website **breastcancernow.org**

Tips for looking after your skin

The following tips may help you care for your skin:

- Eating a healthy diet
- Drinking plenty of water
- Taking care in the sun by covering your skin and wearing a hat
- Wearing high protection sunscreen
- Staying out of the sun during the hottest part of the day (11am to 3pm)
- Avoiding very hot showers or baths
- Avoiding scented soap
- Applying body lotion to help keep the skin moist (but choose unperfumed lotions without colour to minimise the risk of a reaction)

Nail changes

Chemotherapy may cause changes to the appearance of your fingernails and toenails. 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, but it will grow back.

As you're more at risk of infection while having chemotherapy, it's important to report any signs of infection to your treatment team.

Signs of infection include redness or discolouration, heat, swelling or pain in or under your fingernails and toenails.

Tips for caring for your hands and nails

- Use hand cream to 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
- Keep nails short

Numbness and tingling in your hands or feet

You may have pain, numbness or tingling in your hands and feet while having chemotherapy. This is because some chemotherapy drugs can affect the nerves. This is known as peripheral neuropathy.

Peripheral nerves send messages between the brain and the spinal cord (the central nervous system) and the rest of the body. Peripheral neuropathy happens when these nerves are damaged.

It's most common in the hands and feet.

Symptoms of peripheral neuropathy can include:

- Pain (often burning, stabbing and shooting)
- Numbness in your hands and feet
- Altered sensation in your hands and feet
- Pins and needles or tingling in your hands and feet
- A feeling of warmth or cold in your hands and feet
- Increased sensitivity to pain and hot or cold temperatures
- Difficulty doing "fiddly" tasks, such as doing up buttons
- Muscle weakness in your hands and feet

The symptoms may be mild and go away soon after your treatment stops. However, most people find their symptoms gradually improve over the weeks and months after their treatment finishes.

Some symptoms may not disappear completely and, occasionally, symptoms can get worse after treatment stops. Speak to your treatment team if any symptoms do not improve. They may give you medication to relieve symptoms.

You can find out more about peripheral neuropathy on our website **breastcancernow.org**

Effects on your concentration

You might find your treatment affects your ability to concentrate and makes you more forgetful.

This is sometimes called “chemo brain” or “chemo fog”, but your treatment team may call it cognitive impairment. It usually improves over time after treatment has finished, but can sometimes continue for longer.

There’s not much evidence about the best way to improve your concentration. Some people find mental exercises such as crosswords and puzzles help keep their minds active.

We have more information about this on our website **breastcancernow.org**

Effects on your digestive system

Chemotherapy can affect your digestive system in different ways. Some people become constipated while others have diarrhoea.

Contact your treatment team if you have diarrhoea 3 or more times than usual in 24 hours.

Drink plenty of fluids to avoid dehydration.

Some chemotherapy drugs can make indigestion more likely. Indigestion is discomfort or pain in your upper tummy.

Some may also cause heartburn, which is a burning feeling in your lower chest.

Let your treatment team know if you have any of these side effects. They can prescribe medication to help and give you information about diet. They may also refer you to a dietitian if necessary.

Menopausal symptoms

You may experience menopausal symptoms as a result of chemotherapy. You may have already been through the menopause, but having breast cancer treatment can cause you to have symptoms again.

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.

Even if you stop having periods and experience menopausal symptoms, you may still be fertile and could become pregnant. Your treatment team will usually recommend barrier methods of contraception. See page 37 for more information about contraception.

Some common menopausal symptoms include:

- Hot flushes
- Night sweats
- Mood changes
- Joint aches and pains
- Vaginal dryness
- Memory and concentration problems

You can talk to your treatment team about ways of coping with any of these symptoms.

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 (your fertility). Whether your fertility is affected depends on the type and dose of drugs used, your age and your current fertility status.

Some people stop having periods (amenorrhoea) during chemotherapy, but this may be temporary. Your periods are less likely to return after finishing chemotherapy if you're aged 40 or above.

Some studies have shown that using hormone therapy drugs to suppress the ovaries may protect them during chemotherapy. This is because the drugs temporarily "shut down" the ovaries by stopping them from producing the hormone oestrogen, which means your periods will stop. However, we don't know how effective this is as a method of preserving fertility. It cannot replace other methods such as egg and embryo freezing.

Conversations about fertility can be hard, especially if you weren’t expecting to think about it at this stage. It’s important to discuss any fertility concerns with your treatment team before you begin your treatment. They should offer you a referral to a fertility specialist to discuss the possibility of fertility preservation options.

If you were diagnosed with locally advanced or secondary breast cancer before you started or completed a family, you may be concerned about your fertility. Depending on your diagnosis and treatment, you may be advised not to get pregnant.

You can talk to your treatment team about any possible fertility preservation options before starting treatment.

For more information, see our **Fertility, pregnancy and breast cancer treatment** booklet.

Long-term effects of chemotherapy

Most chemotherapy side effects are temporary and improve once your treatment has finished.

However, you might find side effects continue after you’ve finished treatment. You may also develop side effects months or years after you’ve finished chemotherapy.

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

Complementary therapies

Many people find 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 treatment team or GP before having any complementary therapies. Your GP or treatment team 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 treatment team what's available to you.

Let any therapist you see know about your breast cancer and treatment.

For more information on complementary therapies, visit our website **breastcancernow.org**

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.

Can I take supplements?

Tell your treatment team about any supplements you take or would like to start taking. These include:

- Vitamin and mineral supplements
- Herbal remedies
- Any treatments bought over the counter or online

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 others say they help reduce chemotherapy side effects.

Because the safety evidence is not clear, many specialists recommend not taking high-dose antioxidant supplements during chemotherapy.

Sex, contraception and pregnancy

You can still have sex during treatment. It’s thought chemotherapy drugs cannot pass into vaginal fluids or semen, but this cannot be completely ruled out.

Most treatment teams will advise using barrier methods of contraception, such as condoms, during treatment and for a few days after chemotherapy is given.

You’re advised not to become pregnant while having treatment because chemotherapy can harm a developing baby. If you have not been through the menopause, talk to your team about the most suitable method of contraception for you. It’s still possible to become pregnant even if your periods are irregular or have stopped.

It’s normal for chemotherapy to affect how you feel about sex and intimacy. You may not feel like being intimate when you’re having treatment, or you may find intimacy helps you feel more normal. Everyone responds differently.

For more information, see our booklet **Your body, intimacy and sex** or our sex and intimacy webpages at **breastcancernow.org**

Vaccinations and travel

If you're planning a holiday or need to travel overseas, check with your treatment team first.

You should not have any live vaccines while you're having chemotherapy.

Live vaccines include:

- Mumps
- Measles
- Rubella (German measles)
- Polio
- BCG (tuberculosis)
- 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 usually safe to have these vaccinations 6 months after your treatment finishes. Talk to your GP or treatment team before having any vaccinations.

If anyone you have close contact with needs to have a live vaccine, speak to your treatment team or GP. They can advise what precautions you may need to take depending on the vaccination.

Flu vaccination

Anyone at risk of a weakened immune system, and therefore more prone to infection, should have the flu vaccine. This includes people due to have, or already having, chemotherapy.

The flu vaccine is not a live vaccine so doesn't contain any active viruses.

Talk to your chemotherapy team or breast care nurse about the best time to have your flu jab. You can arrange to have it at your GP or local pharmacy.

COVID-19 vaccination

If you’re having chemotherapy, you’re advised to speak to your treatment team about the best time to have a COVID-19 vaccination.

Finding support

It's important to have the right support during and after treatment.

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

If you'd like to talk through your feelings in more depth, you may find it helpful to speak to a counsellor. Your treatment 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.

Find out more about the support services we offer below or at **breastcancernow.org/oursupport**

Primary breast cancer

Breast Cancer Now has a number of services to help support you:

- You can call our free helpline and speak to our specialist nurses on **0808 800 6000** or talk to us online at **breastcancernow.org**
- You can find trusted information to help you understand your situation and take control of your diagnosis on our website or order booklets at **breastcancernow.org/publications**
- You may find it helpful to talk to someone else who's had chemotherapy. Through our Someone Like Me service, we can put you in touch with someone who has had a similar experience and they'll be on hand to answer your questions
- You can chat to other people going through treatment at the same time as you on our monthly chemotherapy threads at **forum.breastcancernow.org**

Secondary breast cancer

Breast Cancer Now has a number of services to help support you:

- You can call our free helpline and speak to our specialist nurses on **0808 800 6000** or talk to us online at **breastcancernow.org**
- You can find trusted information to help you understand your situation and take control of your diagnosis on our website or order booklets at **breastcancernow.org/publications**
- You can find a range of support services to suit you through our Living with Secondary Breast Cancer services, including face-to-face groups, online support groups and Speakers Live sessions

Useful organisations

Cancer Hair Care

01438 311 322

cancerhaircare.co.uk

A website for people who are experiencing hair loss due to chemotherapy. It has detailed information on scalp and hair care, wigs and headwear, and hair regrowth, and includes video tutorials.

Little Lifts

littlelifts.org.uk

Little Lifts provides handpicked, NHS-approved care packages for people having breast cancer treatment. They have free chemotherapy boxes containing a variety of products to help you through treatment, and anyone having treatment in the UK is eligible to apply for one. You can apply for a box for yourself or for a loved one.

Macmillan Cancer Support

0808 808 00 00

macmillan.org.uk

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

World Cancer Research Fund Cancer and Nutrition Helpline

0300 102 2523

wcrf.org

World Cancer Research Fund believe everyone who has been diagnosed with cancer should have access to the most reliable and up-to-date information about cancer and nutrition. They have a helpline staffed by oncology specialist dietitians who answer questions about cancer and diet.

NOTES

NOTES

BREAST CANCER NOW The research & support charity

We're Breast Cancer Now, the research and support charity. However you're experiencing breast cancer, we're here.

Life-changing support

Whoever you are, and whatever your experience of breast cancer, our free services are here. Whether you're worried about breast cancer, dealing with a diagnosis, working out life with or beyond treatment – or someone you love is.

World-class research

We support over 290 of the brightest minds in breast cancer research. They're discovering how to prevent breast cancer, live well with the disease, and save lives. Every day, they get closer to the next breakthrough.

Change-making campaigns

We fight for the best possible treatment, services and care for everyone affected by breast cancer, alongside thousands of dedicated campaigners.

Could you help?

We don't get any government or NHS funding for our support services or health information. So, we rely on donations and gifts in wills to make our vital work happen. If you'd like to support us, go to **breastcancernow.org/give**

ABOUT THIS BOOKLET

Chemotherapy for breast cancer was written by Breast Cancer Now'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:
Email **health-info@breastcancernow.org**

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

We welcome your feedback on this publication:
health-info@breastcancernow.org

For a large print, Braille or audio CD version:
Email **health-info@breastcancernow.org**

Medical disclaimer
We make every effort to ensure that our health information is accurate and up to date, but it doesn't replace the information and support from professionals in your healthcare team. So far as is permitted by law, Breast Cancer Now doesn't accept liability in relation to the use of any information contained in this publication, or third-party information included or referred to in it.

BCC17 Edition 9, next planned review July 2027

BREAST
CANCER
NOW The research &
support charity

We’re here

Information you can trust, support you can count on

Whatever breast cancer brings, we’re here for you.

Whether you’re looking for information about breast cancer or want to speak to someone who understands, you can rely on us.

Call **0808 800 6000** to talk things through with our helpline nurses.

Visit **breastcancernow.org** for reliable breast cancer information.

Breast Cancer Now

6th Floor
The White Chapel Building
10 Whitechapel High Street
London E1 8QS

Trusted
Information
Creator
Patient Information Forum

Breast Cancer Now is a company limited by guarantee registered in England (9347608) and a charity registered in England and Wales (1160558), Scotland (SC045584) and Isle of Man (1200). Registered Office: 6th Floor, The White Chapel Building, 10 Whitechapel High Street, London E1 8QS.