

CHEMOTHERAPY FOR BREAST CANCER

The background is a solid pink color. Overlaid on this are two large, overlapping, organic shapes. The shape on the left is a vibrant orange, and the shape on the right is a bright yellow. They overlap in the center, creating a darker pink area where they meet.

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INTRODUCTION

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

It's common to feel anxious or frightened about having chemotherapy. 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.

We also have booklets and online information on specific chemotherapy drugs and drug combinations on our website **breastcancernow.org**

Your chemotherapy team and breast care nurse can help with any questions you have.

On page 36 there's a glossary to help you understand some of the terms used in this booklet.

We have a range of services that can help you during and after treatment. See page 34 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 in a disordered and uncontrolled way.

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

Different chemotherapy drugs work in different ways and interfere with cancer cells at different times in their growth. This is why a combination of drugs is often used.

Chemotherapy also affects healthy cells throughout the body and because of this can cause a number of side effects (see page 13).

WHEN IS CHEMOTHERAPY GIVEN?

Primary breast cancer

After surgery

Chemotherapy may be used after surgery for primary breast cancer to reduce the risk of cancer returning or spreading. This is called adjuvant chemotherapy. You may be given chemotherapy in combination with other treatments.

Before surgery

Chemotherapy may be used before surgery to slow the growth of rapidly growing breast cancer. 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).

Chemotherapy given before surgery is called primary or neo-adjuvant chemotherapy.

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

There's information about inflammatory breast cancer, HER2 positive breast cancer and triple negative breast cancer on our website **breastcancernow.org** You can also find out more about surgery.

Secondary breast cancer

Chemotherapy can also be used to treat secondary breast cancer. Secondary breast cancer occurs when breast cancer cells have spread to another part of the body. Secondary breast cancer, also called metastatic breast cancer, can be treated but cannot be cured.

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

Different chemotherapy drugs are used to treat secondary breast cancer. You may be given them alone or in combination with other treatments. For example, you might have hormone therapy, targeted therapy, immunotherapy or radiotherapy depending on the features of your cancer.

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 people with a secondary diagnosis and get information and support at a Living with Secondary Breast Cancer meet-up.

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

CHEMOTHERAPY AND PRIMARY BREAST CANCER

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

- The stage of the cancer
- The grade of the cancer
- The oestrogen receptor and HER2 status

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

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

Benefits of chemotherapy

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

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 treatment team may suggest a test called a genomic assay.

These tests look at groups of genes found in 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, and don't involve having any more tissue removed.

The results are provided separately from your pathology report and 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 which may be offered are:

EndoPredict

EndoPredict is a test that predicts how likely breast cancer is to spread to somewhere in the body within 10 years in people who will be taking hormone therapy for at least five years.

Oncotype DX

Oncotype DX is a test that predicts how likely breast cancer is to come back after surgery and the likely benefit of having chemotherapy.

The test gives a score between 0 and 100, and 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 in the body within 10 years in people who will be taking hormone therapy for at least five years.

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

Making decisions

You may be asked to decide if you want to have chemotherapy and making this decision is a personal one. You'll need to weigh up the likely benefits against the potential side effects.

You can talk this 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.

BEFORE STARTING CHEMOTHERAPY

Before starting your treatment most 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 bloods tests and some people will have an ECG (electrocardiogram), a simple test that checks your heart rhythm. You may also have an echocardiogram (echo), an ultrasound scan of your heart. Your height and weight will be measured. This is to work out the correct dose of chemotherapy for you.

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

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

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 14 for an explanation of how chemotherapy affects the number of blood cells).

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.

Things to consider before chemotherapy

- See your dentist for a check-up before chemotherapy begins. See page 23–24 for information on dental health during treatment.
- Chemotherapy can cause hair loss (see page 18).
- Chemotherapy may affect your fertility (see page 29). 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)
- Electrochemotherapy

Intravenous chemotherapy

There are various ways that intravenous chemotherapy can be given depending on factors such as how easy it is for your chemotherapy team 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. It is usually inserted in the back of the 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 diluted 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.

Risk of lymphoedema

Lymphoedema is swelling of the arm, hand or breast area caused by a build-up of lymph fluid. Some people develop lymphoedema after surgery or radiotherapy to treat breast cancer.

Current guidance suggests there is no evidence that giving intravenous medicines on the side of your operation increases your risk of developing lymphoedema. While many treatment teams will give chemotherapy into a vein in the arm on the opposite side, practice can vary from hospital to hospital. Some teams may give chemotherapy in the arm on the same side as your surgery, or alternate the arms used each cycle. This is also usually the case if you have 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 discuss with you how your chemotherapy will be given.

Other ways of giving intravenous chemotherapy

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.

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. They are called Hickman or Groshong line. The catheter is usually put in under a local anaesthetic, but a general anaesthetic can be used if necessary.

It can stay in place for several months. Blood samples can also be taken from it.

Your chemotherapy nurse will explain how to take care of your catheter. After you have completed your treatment the catheter will be removed. This is usually done using 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 into the large vein leading to your heart. It is usually put in under a local anaesthetic.

It can stay in place until your whole course of treatment is finished. Blood samples can also be taken from it.

The PICC line will be covered by a clear dressing and you will be given instructions on how to look after it and change the dressing. After you have completed your treatment the PICC will be removed by a nurse or doctor.

Implanted port

An implanted port is a small disc 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. It is usually put in using a local anaesthetic. You may be given some 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 and a special needle is pushed into the port.

It can stay in place until your whole course of treatment is finished. Blood samples can also be taken from it.

When it needs to be removed a small cut is made over the site of the port using local anaesthetic. Sometimes a general anaesthetic may be used. The port is then removed and the catheter is taken out of the vein. The wound is stitched and covered with a dressing.

You will 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.

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

- Swelling, redness or tenderness in the arm, chest area or up into the neck
- Shortness of breath
- Pain or 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 16 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 will also tell you when to take it, and you'll be given other written instructions such as whether to take it with food.

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 treatment team before taking any of the drugs.

If you cannot take your medicines 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.

Oral chemotherapy can cause side effects like 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 (skin metastases). 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 treatment team can refer you to the nearest available hospital for treatment.

For more information visit our **Secondary breast cancer that has spread to the skin (skin metastases)** webpage at **breastcancer.org**

WHERE IS CHEMOTHERAPY GIVEN?

Unless you're having chemotherapy as tablets, you'll normally be given your treatment at hospital as an outpatient or day case. This means you'll be able to go home on 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, some people are there for most of the day. You may be asked to have blood tests a few days before you have your chemotherapy.

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 chemotherapy may be given in a mobile treatment centre or in your home.

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

HOW LONG WILL I HAVE CHEMOTHERAPY FOR?

Chemotherapy is most commonly given 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 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.

The length of time that you have chemotherapy will depend on your individual situation. Your treatment team will discuss this with you.

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 are having, details of any side effects they may cause and how these can be controlled or managed.

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.

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 are concerned about any side effects, regardless of whether they are listed here, talk to your chemotherapy nurse or cancer specialist (oncologist) as soon as possible.

Common side effects

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
- Blood clots
- Nausea and vomiting
- Hair loss or thinning
- Extreme tiredness
- Sore mouth
- Taste changes
- Bowel changes

Effects on the blood

Chemotherapy 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 found in the hollow part of bones) to replace those that are naturally used up in the body. Chemotherapy reduces the ability of the bone marrow to make these cells.

You will have regular blood tests throughout your treatment to check your blood count. If the number of blood cells is too low, your next treatment cycle may be delayed or the dose of the 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. 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 experience any of the following:

- **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 symptoms of an infection, for example a sore throat, a cough, a need to pass urine frequently or feeling cold or shivery**

Before starting chemotherapy, your treatment team should give you a 24-hour contact number or tell you how to get emergency care. You may need antibiotics.

Sometimes your doctor may recommend injections of drugs called growth factors. This helps the body make more 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 treatment team know.

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 treatment team if you have any of these symptoms.

Tips

You can help reduce the risk of infection and bleeding by:

- Regularly washing and drying your hands thoroughly
- Cleaning any cuts and grazes and cover 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 hospital
- Drinking plenty of fluids
- Storing and cooking food correctly

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

Having chemotherapy increases the risk of blood clots such as a deep vein thrombosis (DVT).

People with a DVT are at risk of developing a pulmonary embolism (PE). This is when part of the blood clot breaks away and travels to the lung. 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 treatment team straight away:

- **Pain, redness/discolouration, heat and swelling of the calf 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**
- **Pain or tightness in the chest**
- **Unexplained cough or coughing up blood**

Feeling sick (nausea) and being sick (vomiting)

Feeling sick and being sick after chemotherapy depends on the type and dose of drugs you're having. But this can usually be controlled. You may start feeling sick 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 actually be sick.

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. If you keep feeling sick or are being sick let someone in your treatment team know.

Contact your hospital if you keep being sick and have difficulty keeping fluids down, even if it happens at the weekend or during the night.

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 try to stop you feeling sick. Herbal teas such as mint or ginger can also help settle the stomach.

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

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 very much at all.

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

Any hair loss should be temporary and in most cases your hair will begin to grow back a few weeks after your treatment has ended. 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 six months or more after finishing treatment. There is currently no definite evidence to say exactly how often this happens.

If you are 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 one to two hours after your treatment.

How well the cold cap works depends on the drugs and doses used, and it does not work for everyone. If you do keep your hair, you may find that it's patchy or thinner. It's not available in all areas, so ask your specialist or chemotherapy nurse if it would be suitable for you.

Wigs

Hair loss can affect how you feel about yourself and some people choose to wear a wig, headscarf or other headwear 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. They are available in various colours and styles.

Synthetic wigs are available on the NHS. They 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.

Some hospitals give patients a free synthetic wig even if they are 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.

People whose hair loss is caused by chemotherapy 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. Most stores will provide this form at the time of purchase.

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

If you're being treated privately, ask your treatment team about the supply of wigs. 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. Different people prefer to wear different things so choose what you feel comfortable with at the time.

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.

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

Extreme tiredness

Cancer-related 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 your treatment has finished. Occasionally fatigue is a long-term effect.

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

Fatigue affects people in different ways and there are different ways of coping with and managing it. Your treatment team may be able to help you with this. You can find lots more information on our website or by calling our Helpline on **0808 800 6000**. Macmillan Cancer Support produces a booklet called Coping with fatigue.

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 – 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 – 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 – individual counselling or a support group may help reduce fatigue. If you can't attend a support group you could try our online Forum **breastcancer.org/forum**
- Accept offers of help from others where possible

Sore mouth

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
- Bleeding gums

You'll usually be given mouthwash to reduce the risk of a sore mouth developing. If you do get a mouth infection your specialist or chemotherapy nurse can advise you about different mouthwashes or suitable medicine.

It's advisable to see your dentist for a check-up before chemotherapy begins, and to avoid dental treatment during chemotherapy if possible. If you have any mouth problems let your chemotherapy nurse or treatment team know as soon as possible.

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.

Some 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
- 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

Some people notice that their taste changes while having chemotherapy. Some food may taste different, for example more salty, bitter or metallic. You may no longer enjoy some 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.

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

Skin reactions

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

Some chemotherapy drugs can cause a skin reaction called hand-foot syndrome, often called Palmar-Plantar syndrome. 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 the knees or elbows.

For some people, hand-foot syndrome can make it harder to carry out daily activities and can 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 breastcancer.org

Tips

The following tips may help you care for your skin:

- Eating a healthy diet
- Drinking lots 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 creams with the least amount of perfume and colour to minimise the risk of a reaction)

Nail changes

Chemotherapy may cause changes to the appearance of your nails on your fingers and toes. 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 nails will grow back.

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 to your treatment team.

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

Numbness and tingling in hands or feet

People having chemotherapy may have pain, numbness or tingling in their hands and feet. This is due to the effect of some chemotherapy drugs on the nerves and 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 because the nerves are longer than in other parts of the body.

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. 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 treatment team if any symptoms do not improve.

Effects on your concentration

Some people find treatment affects their ability to concentrate and makes them more forgetful. This is sometimes referred to as ‘chemo brain’ or ‘chemo fog’ but your treatment team may call it cognitive impairment. It usually improves over time after treatment has finished, but for some people it can continue for longer.

We have more information about this on our website breastcancer.org

Tips

There’s not much evidence about the best way to treat chemo brain, but some of the tips to reduce cancer-related fatigue may also help:

- Regular physical activity
- Eating a healthy diet
- Relaxation techniques such as mindfulness or meditation to reduce stress
- Mental exercises such as crosswords and puzzles to keep your mind active

Effects on your digestive system

Chemotherapy can affect your digestive system in different ways. Some people get constipated, other people have diarrhoea. Your hospital will have its own guidelines, but if you have four or more episodes of diarrhoea within 24 hours contact your GP or treatment team. Drink plenty of fluids to avoid dehydration.

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 medication to help and can also give you information about diet. You can also be referred to a dietitian if necessary.

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.

Even if you stop having periods and experience menopausal symptoms, you may still be fertile and could become pregnant. Your specialist will usually recommend barrier methods of contraception, such as condoms.

Some common menopausal symptoms include:

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

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. The likelihood of becoming infertile depends on the type of drugs used, the dose given, your age and your current fertility status.

Some women stop having periods (amenorrhoea) during chemotherapy, but this may be temporary. Women aged around 40 and above are less likely to have their periods return after completing chemotherapy than women under this age.

It's important to discuss any fertility concerns with your treatment team before you begin your treatment. Your treatment team should offer you a referral to a fertility specialist to discuss the possibility of fertility preservation options.

For more information, see our **Fertility, pregnancy 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.

Long-term effects of chemotherapy

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

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. 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.

COMPLEMENTARY THERAPIES

Many people find 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 treatment team or GP before having any complementary therapies, and mention your breast cancer and treatment to any therapist you see. 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.

For more information on complementary therapies visit our website breastcancer.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.

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.

SEX, CONTRACEPTION AND PREGNANCY

You can still have sex during treatment. 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. Most hospital specialists will advise using barrier methods of contraception, such as condoms during treatment, and for a few days after chemotherapy is given.

If you haven't been through the menopause, it's important to use contraception because chemotherapy drugs can harm a developing baby 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 intrauterine 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 may be advised to have this removed.

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.

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

TRAVEL AND VACCINATIONS

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

You shouldn't have any live vaccines while you're having chemotherapy. Live vaccines include mumps, 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 vaccinations six 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.

Coronavirus (Covid-19) vaccination

People having chemotherapy are advised to speak to their treatment team before having a coronavirus (Covid-19) vaccination.

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.

Chat to other people going through treatment at the same time as you on the monthly chemotherapy threads at **[breastcancer.org/forum](https://www.breastcancer.org/forum)**

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 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.

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

- Speak to our nurses or trained experts by calling our Helpline on **0808 800 6000** (Monday to Friday 9am– 4pm and Saturday 9am–1pm). You can also find trusted information you might need to understand your situation and take control of your diagnosis or order booklets at **breastcancer.org/publications**
- When you're facing breast cancer, it can help to talk it through with someone who's been there too. Call our Someone Like Me service on **0114 263 6490**. You can also chat to other people 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 **breastcancer.org/forum**
- Join one of our courses or support groups, based in your local area or online. We'll give you the chance to find out more about treatments and side effects as well as meet other people like you. Visit **breastcancer.org** for more information

Find out more about the support services we offer at **breastcancer.org/oursupport**

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. The 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.

Stage The size of the cancer and how far it has spread.

HER2 A protein involved in the growth of cells. Around 15–20 per cent of breast cancers have higher than normal levels of HER2 (known as HER2 positive) which helps the cancer to grow.

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 Proteins within cancer cells that attach to the hormone oestrogen and help the cancer to grow. It may be abbreviated to ER, from the US spelling estrogen.

Oncologist A doctor who specialises in cancer (oncology). A medical oncologist specialises in cancer drugs. A clinical oncologist specialises in radiotherapy alone or radiotherapy and cancer drugs.

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

Other organisations

Macmillan Cancer Support

0808 808 0000

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.

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 case studies and tutorials.

HELP US TO HELP OTHERS

If you have found this information helpful, would you consider making a donation to support our care and research work? You can donate on our website

breastcancer.org/donate

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@breastcancer.org



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BREAST CANCER

NOW The research
& care charity

At Breast Cancer Now we're powered by our life-changing care. Our breast care nurses, expertly trained staff and volunteers, and award-winning information make sure anyone diagnosed with breast cancer can get the support they need to help them to live well with the physical and emotional impact of the disease.

We're here for anyone affected by breast cancer. And we always will be.

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

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Patient Information Forum

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