breast cancer care

the breast cancer support charity

Chemotherapy for breast cancer

Treatments and side effects

Contents

Introduction

This booklet is for anyone who would like more information about chemotherapy. It explains what chemotherapy is and the most common general side effects.

We hope that it will help you talk with your cancer treatment specialist (oncologist), chemotherapy nurse or breast care nurse (if you have one) about any concerns you have and help you to feel included in planning your treatment. You'll also be given relevant information about your particular chemotherapy by your own treatment team.

If you would like more information on specific chemotherapy drugs and drug combinations, see our range of booklets.

As well as contacting your hospital team with any questions you can call us free on **0808 800 6000**. We are available 9am-5pm Monday to Friday and 10am-2pm Saturday.

What is chemotherapy?

Chemotherapy is a treatment using anti-cancer (also called cytotoxic) drugs which aims to destroy cancer cells. It is known as a systemic treatment.

Many different types of chemotherapy drugs are used to treat breast cancer. They can be given in different ways and in different combinations, according to an individual's situation.

How does chemotherapy work?

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

Chemotherapy and primary breast cancer

Primary breast cancer is breast cancer that is found in the breast and/or the lymph nodes (glands) under the arm (axilla) and which hasn't spread anywhere else in the body. To decide whether or not you're offered chemotherapy, various factors are looked at, such as the size of your breast cancer, whether the lymph nodes are affected, the grade of your cancer (how different your cancer cells are from normal breast cells and how quickly the cancer cells are growing) and the oestrogen receptor (ER) and hormone receptor (HER2) status (for more information on these see our **Understanding your pathology report** booklet). Your general health and any other medical conditions will also be considered.

Chemotherapy is commonly given in addition to surgery and/or radiotherapy for primary breast cancer. It is given to reduce the risk of the breast cancer returning and is known as adjuvant chemotherapy. Chemotherapy is usually started a few weeks after surgery, giving your body some time to recover from the effects of the operation. National guidance states that treatment should begin within 31 days of your surgery, unless there is a medical reason why it cannot be given, for example, a wound infection.

In some circumstances chemotherapy is given before surgery. This is known as primary or neo-adjuvant chemotherapy. For example, it may be used to slow the growth of rapidly growing breast cancer and reduce the chance of it spreading to other parts of the body or to shrink a larger breast cancer before surgery. If you're offered primary chemotherapy your specialist and/or breast care nurse will explain why.

How much will I benefit from chemotherapy?

If you have primary breast cancer the aim of chemotherapy is to reduce the risk of the cancer returning in the future.

Your cancer specialist may use an online programme to help estimate the benefit you might expect to receive from chemotherapy. They may be able to show you a graph showing this information, or discuss the benefit in the form of a percentage.

The level of possible benefit you get will depend on several factors including your age, whether lymph nodes are affected and the type, size, grade and stage (the size of the cancer and how far it has spread). In some circumstances the benefits of chemotherapy are clear; in others they are less certain or quite small and it can be difficult to decide whether or not to go ahead with chemotherapy.

The decision to have chemotherapy is a personal one and you'll need to weigh up the likely benefits against any potential side effects. Your decision may be influenced by any previous experience you have of chemotherapy, your personal priorities, your family and your work commitments. You can discuss these issues with your cancer specialist or breast care nurse who will try to answer your questions and support you with your decision.

You can also contact us on **0808 800 6000** to talk through your options or to be put in touch with our Someone Like Me service – to speak to someone who has been through breast cancer.

Oncotype DX

Oncotype DX is a test that can help your specialist team decide if you would benefit from having chemotherapy as part of your treatment and how likely it is that your cancer will return in the future. You may also hear this test called a gene expression profiling (GEP) test, a gene expression analysis test or a gene assay.

The test is carried out on breast tissue removed during surgery.

It’s only suitable in certain circumstances and doesn’t always provide a definite answer.

You can ask your specialist team whether this test would be suitable for you and if it’s available.

Chemotherapy and secondary breast cancer

Secondary, or metastatic breast cancer, is when breast cancer cells have spread from the breast to other parts of the body, such as the bones or lungs. Although it can't be cured, it can be controlled and sometimes for many years.

Chemotherapy can be used to treat secondary breast cancer to shrink or slow its growth. It can also be given to reduce some symptoms. Your oncologist may also try other treatments before or alongside chemotherapy. For example, hormone therapy (if the breast cancer is oestrogen receptor positive) or biological therapy such as trastuzumab (Herceptin) (if the breast cancer is HER2 positive).

Radiotherapy may also be used depending on the site of the secondary breast cancer.

For more information see our **Secondary breast cancer resource pack** and our individual secondary breast cancer site booklets.

What can I expect?

Chemotherapy for primary breast cancer is most commonly given as a series of treatments at intervals of three to four weeks over a period of several months. The period between each chemotherapy treatment gives your body time to recover from any short-term side effects. The exact type and dose of chemotherapy will be tailored to suit your individual situation.

You’ll normally be given your treatment as an outpatient so you’ll be able to go home the same day. You may be at the hospital for a short time but some people find they are there for most of the day (depending on tests, waiting times and how long it takes to prepare and give the chemotherapy drugs).

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

With some types of chemotherapy you may be given your first treatment as an inpatient and you would need to stay in hospital overnight.

A member of your breast care team will explain which chemotherapy drugs you will be having and on which days you'll have them. You may hear people refer to your chemotherapy 'regime' or 'regimen'. This means the chemotherapy drugs used, their dose, how often they are given and the number of cycles overall. For example, if you have treatment every three weeks each three-weekly chemotherapy is known as a cycle: you have cycle 1, then cycle 2 three weeks later, cycle 3 three weeks after that, and so on.

Chemotherapy regimes given every two weeks instead of every three, known as 'dose-dense chemotherapy', are being trialled. This means that the drugs are given with less time between treatments than in a standard treatment plan although the same total dose of chemotherapy is given. For example, if a standard dose of chemotherapy was eight treatments over 24 weeks, a dose dense treatment might be eight treatments over 16 weeks. Your oncologist will discuss if this is appropriate for you.

Shortly before each cycle of treatment, and sometimes in between, you'll have a blood test.

You'll usually be given anti-sickness (also called anti-emetic) drugs before your chemotherapy. This will vary depending on the type of chemotherapy being given but will often include a steroid drug called dexamethasone in addition to other anti-sickness medication.

How chemotherapy is given

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

- into a vein (intravenously)
- by mouth (orally) as a tablet or capsule.

Intravenous chemotherapy

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

The most common way involves inserting a small needle and plastic tube called a cannula into a vein, either in the back of the hand or lower arm. The needle is removed and the plastic tube left in place. The diluted drugs are then slowly injected into the vein. If a large volume of fluid is used it can be given as an infusion (drip) through the cannula over a fixed period of time.

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

The cannula will usually be on the opposite arm to where you had (or are having) surgery. This is to avoid the risk of lymphoedema. Lymphoedema is swelling of the arm, hand or breast area caused by a build-up of lymph fluid in the surface tissues of the body. It can occur as a result of damage to the lymphatic system because of surgery or radiotherapy to the lymph nodes under the arm and surrounding area. For more information see our booklet **Reducing the risk of lymphoedema**.

If you had or are having a bilateral mastectomy (removal of both breasts) and surgery to the lymph nodes on both sides speak to your doctors about how your chemotherapy will be given.

If it‘s difficult to find a vein, there are alternatives to a cannula. For example, a central venous access device is sometimes used. This stays in place throughout the course of the treatment and the chemotherapy is given through it. Various types of central venous access devices are described below.

Skin-tunnelled catheter

A skin-tunnelled catheter (a catheter is a tube that allows fluids to be given or to drain away) is a fine silicone tube that is inserted into a vein through a small cut in the chest wall. You may hear this referred to as a Hickman or Groshong line. It can stay in place for several months, which means that you don’t need to have a cannula put into the vein each time you’re given the chemotherapy drugs. Blood samples can also be taken from the catheter.

The catheter is usually put in under a local anaesthetic but a general anaesthetic can be used if necessary. A tunnel is made under the skin and the catheter is inserted into the large vein leading to the heart. There is a small ‘cuff’ around the catheter that lies immediately under the skin at the opening. Tissue grows around the cuff, which helps to keep the catheter firmly in place. Until this occurs, a stitch will be used to hold it in place. Care must be taken to keep the opening clean to minimise the risk of infection. Your chemotherapy nurse will explain what you need to do to take care of your catheter. After you have completed all your treatment the catheter will be removed under a local anaesthetic.

Peripherally inserted central catheter (PICC)

Alternatively you can have a catheter inserted into a vein in your arm, at or above the bend in your elbow, which extends into the large vein leading to your heart. This is known as a peripherally inserted central catheter (PICC) and, like a skin-tunnelled catheter, it stays in place until your whole course of treatment is finished. It’s usually put in under a local anaesthetic in an outpatient department or on a ward. While you have a PICC it will be covered by a dressing and you’ll be given instructions on how to care for and change this dressing. Blood samples can also be taken from this device. When it’s no longer needed, the PICC will be removed by a nurse or doctor.

Implanted port

An implanted port is a thin, soft, hollow tube made of plastic that can be put into a vein under the skin, usually on the chest or in the arm. One end of the tube goes into a large vein just above the heart and the other end connects to the port under the skin. Chemotherapy drugs can be given directly into the port by puncturing it each time with a special type of needle. It can also be used to take blood samples. An implanted port is put in by a surgeon or radiologist in the operating theatre. A general anaesthetic can be given, or the port can be put in and removed under local anaesthetic. Unlike a skin-tunnelled catheter or PICC, the port is hidden but can be felt under the skin.

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

If you have a Hickman, Groshong or PICC line, it's possible for a blood clot (thrombosis) to form in your vein at its tip and you may be given medication to help prevent this. Signs of a blood clot around the central venous access device include swelling, redness and/or tenderness in the arm, chest area or up into the neck (on the same side as the central line). You should also contact your hospital doctor or nurse immediately if you develop any shortness of breath or tightness in your chest.

Oral chemotherapy

This is chemotherapy taken by mouth and it may be given either as tablets or capsules. Oral chemotherapy is usually taken at home as all or part of your treatment. Your chemotherapy nurse will tell you when to take it and you'll be given other written instructions such as whether or not to take it with food.

If you can't take your medicines for any reason or if you are sick (vomit) after taking your tablets you should contact your doctor immediately for advice.

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

The hospital pharmacist or your chemotherapy nurse will give you instructions on the safe handling and storage of chemotherapy that you keep at home.

Oral chemotherapy can cause side effects similar to treatment given intravenously. It's important to be aware of these when taking your other medicines and you will still require regular blood tests.

Electrochemotherapy

Electrochemotherapy is a new treatment and is not widely available. It's sometimes used to treat breast cancer that has spread to the skin. Chemotherapy is injected either directly into the area of skin affected or into the bloodstream. An electric pulse is then used to help the chemotherapy reach the cancer cells. Once inside the cancer cells, the chemotherapy destroys them.

Possible side effects

Chemotherapy drugs work by destroying cancer cells, which grow and divide rapidly. However normal cells are also affected and this can result in side effects. The aim is to give a sufficient dose to destroy breast cancer cells while causing the least damage possible to normal cells. Breast cancer cells can’t repair themselves very well but normal cells can repair themselves quickly. This means that side effects are usually temporary.

Chemotherapy affects people in different ways. The side effects depend on your individual situation and the drugs you’re receiving. Two people receiving the same combination of drugs may feel completely different during the course of their treatment. Some people experience very few side effects and are able to continue with their usual activities, while others find their lives are affected to varying degrees. Some of the most common side effects are:

- risk of infection from not having enough white blood cells, anaemia (a drop in the number of red blood cells) and bruising and bleeding
- sickness (nausea) and vomiting
- hair loss or thinning
- sore mouth (mucositis)
- mouth ulcers
- fatigue.

There are more details about these side effects and others in this section. Your hospital team will give you information about your drugs, details of any specific side effects they may cause and how they could be controlled. They should also give you details of who to contact at any time during your treatment including at night or at weekends should you feel unwell.

Effects on the blood

Chemotherapy drugs can temporarily affect the number of healthy blood cells within 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 which are naturally used up within the body. Chemotherapy reduces the ability of the bone marrow to make these cells.

You'll have regular blood tests throughout your treatment to check your blood count. If your blood count is too low it may be necessary to delay the next course of treatment or reduce the chemotherapy dose given.

Risk of infection

Not having enough white blood cells can increase the risk of getting an infection. Your resistance to infection is usually at its lowest point around 7-14 days after having chemotherapy. The number of white blood cells usually returns to normal before your next course of chemotherapy is due. When the white blood cells fall below a certain level, it's known as neutropenia. If you also have a high temperature (above 38°C), it's known as febrile neutropenia

If you feel unwell, are shivering or have a temperature above 38°C at any time during your treatment you should contact the hospital immediately even if this happens at the weekends or during the night.

You should be given a 24-hour contact number or advice about seeking emergency care by your specialist team before starting chemotherapy.

At some point during your treatment you may need to be treated with antibiotics. In certain circumstances, your doctor may recommend injections of drugs that stimulate the production of white blood cells to reduce your risk of further infection. Your specialist will explain more about these injections if you are going to have them.

Anaemia

Having too few red blood cells can mean that you are anaemic. If you feel particularly tired, breathless or dizzy, you should let your specialist team know. Occasionally a blood transfusion may be necessary during your treatment.

Bruising and bleeding

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

Taking some of the following precautions may help reduce the risk of problems such as infection and bleeding:

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

Sickness (nausea) and vomiting

The likelihood of experiencing nausea and vomiting following chemotherapy will depend on the type and dose of drugs you are having. Other factors can also influence how people respond, for example, people who are very anxious or prone to travel sickness or morning sickness in pregnancy may be more likely to experience vomiting.

You'll be given anti-sickness medication by mouth and/or intravenously before each cycle of chemotherapy as well as some anti-sickness tablets to take home, but some people will still experience nausea and vomiting.

Nausea can start immediately 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. Nausea can usually be lessened and in most cases controlled. Several types of anti-sickness drugs are available. You may need to take a combination of drugs to relieve your nausea. This may include taking a low dose of steroids for a short time. If nausea and vomiting are affecting you make sure you let someone in your specialist team know.

It’s important to try to keep drinking fluids, and eating regularly. This can be difficult when you feel nauseous or are being sick. Try to have small but frequent amounts of drinks and food.

You should contact your hospital, even if it's the weekend or during the night if you’re experiencing severe vomiting and are unable to drink any fluids without vomiting.

Hair loss or thinning

Hair loss can be one of the most distressing side effects of chemotherapy. Some people find it helps if they are prepared to lose their hair before it actually happens. Some women choose to cut their hair shorter or shave it off completely before starting chemotherapy.

Not all chemotherapy drugs cause complete hair loss. Some cause thinning while others may not affect the hair at all. The likelihood of losing your hair depends on the type and amount of chemotherapy drugs you’re given.

If you lose your hair it usually begins within two to three weeks of starting treatment. Hair loss can also affect your body hair including eyebrows, eyelashes and pubic hair as well as the hair on your head.

You may find that you lose your body hair at a slower rate than the hair on your head. Hair loss should be temporary and your hair should grow back after chemotherapy has finished. Sometimes hair will start to grow back before the end of chemotherapy. In a very small number of cases, prolonged or permanent hair loss has been reported following chemotherapy treatment.

Scalp cooling

For some people scalp cooling may be appropriate to prevent or lessen hair loss. This involves wearing a ‘cold cap’ before, during and after you have the chemotherapy drugs. Scalp cooling is thought to work by temporarily reducing the blood flow to the hair follicles in the scalp to prevent the drugs from reaching and damaging them. It may also affect the cells within the hair follicles, making them less sensitive to the effects of the chemotherapy drugs. The success of scalp cooling varies depending on which chemotherapy drugs are used and from person to person. It's not available in all areas, so ask your specialist or chemotherapy nurse if this treatment would be suitable for you and if it is available.

Wigs

Your breast care nurse or chemotherapy nurse can let you know about their provision of wigs as it varies depending on the hospital and area. Many hospitals have an appliance officer or specialist wig fitter who can provide advice and fit you with a suitable wig.

Most modern wigs are natural looking and comfortable. They can be made from real or synthetic hair or a mixture of both, and are available in various colours and styles.

Synthetic wigs are available on the NHS but you will be charged for one unless you qualify for a free wig or help with charges.

At the time of printing, you're entitled to a free synthetic wig on the NHS if you are:

- an inpatient when the wig is supplied
- in possession of a valid war pension exemption certificate
- entitled to or named on an NHS Tax Credit Exemption Certificate
- named on an HC2 certificate (an NHS Low Income Scheme certificate for full help with costs)
- receiving Income Support, Income-based Jobseeker's Allowance, Income-related Employment and Support Allowance or Pension Credit Guarantee Credit, or if your partner is.

Some hospitals may provide you with a free wig regardless of whether you meet any of the conditions above.

You might get some help with the cost of your wig if you are named on a valid HC3 certificate (an NHS Low Income Scheme certificate).

To find out more about help with these costs ask your hospital for an HC1 form or there's detailed information on the NHS Business Services Authority website

www.nhsbsa.nhs.uk/HealthCosts/1128.aspx

If you don't qualify for help with the cost of a wig, the NHS charge (at the time of printing) for an acrylic wig is £64.95. Financial help towards the cost of a wig may be available from Macmillan Cancer Support (see 'Useful addresses') and your doctor, nurse or social worker will need to apply on your behalf.

If you buy a wig from a shop or other supplier you don't have to pay VAT (Value Added Tax) on it as your hair loss is caused by cancer treatment. To claim back the VAT you'll need to complete a VAT form – which most stores will provide at the time of purchase – and post it to the address on the form. The tax can't be claimed back at a later date.

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

For more information, see our **Breast cancer and hair loss** booklet. Breast Cancer Care provides a free hair loss advisory service throughout the UK called HeadStrong.

For more information, call us on **0808 800 6000**
or visit **www.breastcancercare.org.uk/services**

Mouth and dental problems

Chemotherapy may affect your mouth in a number of ways. These include:

- sore mouth and ulcers (oral mucositis)
- dry mouth (xerostomia) which can also increase the risk of tooth decay
- infection
- oral thrush
- bleeding gums
- taste changes.

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

Other ways you can help to minimise problems include:

- cleaning your teeth/dentures after each meal
- using a soft toothbrush
- using a mouthwash (often provided by the hospital)
- taking regular sips of water to keep the mouth moist
- chewing sugar-free gum to encourage the production of saliva.

If you have any mouth problems let your chemotherapy nurse or specialist team know as soon as possible. There are different things that can help ease a sore mouth. This may include mouthwashes, protective gels and lubricants, and pain relief. The following suggestions can also help.

- Avoid spicy, salty or acidic foods.
- Avoid alcohol and tobacco (also be aware of alcohol in mouthwash).
- Avoid course or hard foods such as crisps or crusty bread.
- Adding gravies and sauces to your food to help keep your mouth moist and swallowing easier.
- Avoid very hot or cold beverages and foods.
- Use a lip balm to keep lips moistened.

While you're having chemotherapy your taste can change and some food may taste different (for example more salty, bitter or metallic). You may find you no longer enjoy some foods you used to enjoy and you may want to experiment to find the tastes and textures that you find most appealing at this time. Your taste should return to normal once your treatment has finished although for some this can persist after treatment.

Fatigue

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

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

Each person’s experience of fatigue is different. If you continue to work through your chemotherapy treatment or care for children, this may contribute to how tired or fatigued you feel. Try to know your limits and not expect too much of yourself. The following suggestions may also be helpful in managing tiredness and fatigue.

- Consider keeping a fatigue diary. This can identify the causes of fatigue and show changes in energy levels, helping you plan your day to get the most out of times when you have more energy. There’s an example of a fatigue diary on our website.

Week one

		M	T	W	Th	F	S	Su
Energy level	1							
	2							
	3							
	4							
	5							
	6							
	Treatment							
	Activity							

- There’s strong evidence that exercise reduces fatigue. Aim to do short amounts of activity or light exercise regularly such as walking or yoga. A local walking group can be a good way to get regular exercise as well as meeting people. Best Foot Forward is a new walking group run by Breast Cancer Care for people who are moving forward from breast cancer. Call **0808 800 6000** to find out if there’s a group near you.
- Allow time to rest in between your daily activities but try to limit a nap to less than 30 minutes so that you sleep at night.
- Complementary therapies such as massage and relaxation can help with an overall feeling of wellbeing. There are relaxation CDs and apps that can guide you through different techniques.
- Drink plenty of fluids as being dehydrated can make you tired.

- Make the most of the times when your appetite is good, choosing healthy well-balanced foods. You can find out more about this in our **Diet and breast cancer** booklet.
- Think about emotional (psychological) support. This could be individual counselling or in a support group. There's some evidence this may help reduce fatigue. If you aren't able to attend a support group you could try our online Forum or our Live Chat events. Visit **www.breastcancercare.org.uk** for more information.
- Accept offers of help from others where possible.

Breast Cancer Care's **Eat well, keep active after breast cancer** DVD may give you some ideas for exercises and activities to help with fatigue. Macmillan Cancer Support produces a booklet called 'Coping with fatigue' which you may find useful. See page 30 for contact details.

Skin and nail changes

Some chemotherapy drugs can make your skin dry. Your skin may be more sensitive or prone to reactions. Some chemotherapy drugs can also cause rashes. If you develop a rash tell your specialist team as soon as possible.

You can moisturise your skin to help with the dryness but choose creams with the least amount of perfume and colour to minimise the risk of a reaction and test on small area of skin first.

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

Chemotherapy may cause changes to the appearance of your nails. This can be a change in the nail colour or texture such as the formation of ridges. Nails can become more brittle and cracked. Occasionally the nail may lift off the nail bed entirely and fall out.

During treatment handcream will help moisturise your hands, feet and nails and using gloves for household chores can protect your nails. If your toenails are affected you may want to avoid tight-fitting shoes. Don't wear false nails during chemotherapy treatment as these can lead to infection or mask the signs of it.

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

Cognitive impairment ('chemo brain')

Some people also find chemotherapy affects their ability to concentrate and makes them more forgetful. This is sometimes referred to as 'chemo brain' or 'chemo fog'. It usually improves over time after treatment has finished.

There's not a great deal of research evidence to support the best way to treat 'chemo brain' but some of the tips to help reduce cancer-related fatigue may also be helpful: physical exercise, eating a healthy, varied diet and relaxation techniques to reduce stress. Some people say mental exercises such as crosswords and puzzles are helpful in keeping their mind active.

Effects on your digestive system

Chemotherapy can affect your digestive system in different ways. Some people find they get constipated (hard or infrequent bowel movements), others experience diarrhoea (loose or frequent bowel movements). Some chemotherapy drugs can make you more likely to have indigestion. Some may also cause heartburn, which is a burning sensation in the lower chest.

Let your chemotherapy team know if you are experiencing any of these side effects. There are medications which can help; they can also offer dietary advice. You can also be referred to a dietician if necessary.

Your hospital will have its own guidelines but if you have four or more episodes of diarrhoea within 24 hours you should contact you GP or specialist team. Make sure you drink plenty of fluids to stop you from becoming dehydrated.

Menopausal symptoms

Women who have not yet reached the menopause (pre-menopausal) find their periods stop or become irregular during chemotherapy. Some women experience menopausal symptoms because their ovaries, which produce oestrogen, are affected by the treatment. Common symptoms include hot flushes, night sweats, mood changes, joint aches and pains and vaginal dryness. Whether your periods return will depend on the type of drug(s) used, the dose given and your age. You can talk to your breast care nurse or specialist team about ways of coping with any of these symptoms. For more information, see our **Menopausal symptoms and breast cancer** booklet.

Fertility

Chemotherapy causes changes within the ovaries, which may lead to infertility. The risk of infertility is greater if you're over 35 years of age and rises the older you are. This can be a particularly distressing side effect.

If you want children in the future or even if you are unsure it's important that you discuss the possible effects of the drugs you'll be having on your fertility with your cancer specialist. This will help you make an informed decision regarding your options. If a referral to a fertility specialist is needed then it's important that this occurs as soon as possible to minimise any delay in starting your chemotherapy. For more information, see our **Fertility issues and breast cancer treatment** booklet. Call us on **0808 800 6000** to find out about our Younger Women Together events where you can learn more about fertility. For men, chemotherapy can affect sperm production which can lead to temporary or permanent infertility. If you're concerned about the effect chemotherapy may have on your fertility talk to your specialist before starting treatment. For more information, see our **Men with breast cancer** publication.

Longer-term effects of chemotherapy in primary breast cancer

Most chemotherapy side effects are temporary and disappear once your treatment is over. For some the side effects can linger or other effects may develop months or years after the chemotherapy has finished. Some chemotherapy drugs can cause heart or lung problems. There's also a risk with some drugs of getting another cancer in the future. However, these late effects are rare and your specialist can discuss with you the benefits of treating your breast cancer with chemotherapy against the risk of these rare effects occurring.

Sex, contraception and pregnancy

Chemotherapy will almost certainly affect how you feel about sex and intimacy. You may not feel like being intimate at a time 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**.

If you're pre-menopausal it's important to use contraception even if your periods become irregular or stop completely as it's still possible to become pregnant. Chemotherapy drugs can harm a developing foetus in the first three months of pregnancy.

Your specialist can advise you on the best form of contraception for you. They will usually recommend barrier methods – such as condoms. The contraceptive pill is not routinely recommended because it contains hormones. The morning after pill can still be used in emergencies.

An interuterine device (IUD or coil) can be used as long as it's not the type that releases hormones.

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

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

Complementary therapy

Many people find that complementary therapies can help them cope with the side effects of chemotherapy, even though there may not necessarily be research evidence to support this. There are many different types including acupuncture, relaxation, visualisation, aromatherapy, reflexology, meditation and hypnotherapy.

Some therapies are available in NHS hospitals, so ask your specialist or breast care nurse for details of what is available to you. If you're thinking of trying a complementary therapy you should go to a recognised practitioner. For more information, see our **Complementary therapies** booklet.

Diet and supplements

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

Many people wonder if they should follow a specific diet during chemotherapy and there are many conflicting theories about diet and breast cancer, which can be confusing. It's important to make sure you eat and drink what you feel able to, wherever possible trying to maintain a healthy, well-balanced diet.

You may be advised by your doctors to follow a particular diet.

Tell your specialist about any vitamin and mineral supplements that 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 your chemotherapy treatment. Some studies suggest it 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 will recommend that people avoid taking high dose anti-oxidant supplements during chemotherapy. For the same reason, you should discuss with your specialist about taking any herbal remedies or supplements.

For more information see our **Diet and breast cancer** booklet.

Travel

If you're planning a holiday, or need to travel overseas for any reason, check with your specialist first. It's sometimes possible to plan your treatment around your travel plans. Going abroad may not always be advisable, particularly if you have experienced side effects or are going to a country for which you need to have live vaccine injections (see the 'Vaccinations' section opposite).

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

Getting travel insurance while having treatment for breast cancer isn't always straightforward. Macmillan Cancer Support produces a booklet on travel and cancer. See page 34 for their contact details.

Vaccinations

You shouldn’t have any live vaccines while you’re having chemotherapy. Live vaccines contain a small amount of live virus or bacteria that has been altered so if you have a weakened immune system, which you may do during chemotherapy treatment, they could be harmful. Live vaccines include measles, rubella (German measles), polio, BCG (tuberculosis) and yellow fever. It’s safe to have these vaccines six months after your chemotherapy finishes. Talk to your GP or specialist before having any vaccinations.

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

Inactivate vaccines, such as the seasonal flu vaccine are safe and usually recommended for people starting or on chemotherapy to reduce their risk of getting the flu virus.

Your immune system needs to be healthy in order to make the antibodies to the vaccine that protects you from the flu. This takes about two weeks to fully develop after having the vaccination. Therefore it’s best to have the vaccination at least two weeks before your chemotherapy starts. If you’re already having chemotherapy then you will need to talk to your specialist or breast care nurse about the best time to have your flu jab. This will usually be at a point in your chemotherapy cycle when your white blood cell count is recovering.

Further support

Being told that chemotherapy is part of your treatment can cause a range of emotions. Many people feel anxious and frightened. This is completely natural. Not knowing what to expect or how effective the treatment will be, as well as not knowing how side effects will affect you, can be very distressing. Finding out as much as possible about your chemotherapy treatment before it starts can help.

Feeling low, tired, irritable or tearful at any point during your treatment, isn't unusual and there are people there to help you. Let other people, particularly your family and friends, know how you're feeling so that they can support you. It can also help to discuss your feelings or worries with your specialist, chemotherapy nurse or breast care nurse. Alternatively, a professional counsellor might be more appropriate if you want to talk through your feelings in more depth over a period of time. Your specialist team or GP can usually arrange this.

You might find it easier to share your feelings with someone who has had a similar experience to you. You can do this either one to one or in a support group. For more information on individual support or support groups in your area call Breast Cancer Care on **0808 800 6000** (Text Relay **18001**) or visit **www.breastcancercare.org.uk**

Other organisations

Macmillan Cancer Support

Macmillan Cancer Support
89 Albert Embankment
London SE1 7UQ

General enquiries: 020 7840 7840
Helpline: 0808 808 00 00
Website: www.macmillan.org.uk
Textphone: 0808 808 0121 or Text Relay

Macmillan Cancer Support provides practical, medical, emotional and financial support to people living with cancer and their carers and families.

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Cancer Research UK

Cancer Research UK Angel Building
407 St John Street
London EC1V 4AD

General enquiries: 0300 123 1022
Website: www.cancerresearchuk.org

Cancer Research UK is the world's leading charity dedicated to beating cancer through research.

Helping you face breast cancer

Treatments for breast cancer can be complex and if you're wondering where to turn for support in making treatment decisions or coping with side effects, we can help with practical and emotional support.

Ask us

Our free Helpline is answered by specialist nurses and trained staff with personal experience of breast cancer. They understand your issues and can answer questions. Or you can Ask the Nurse by email on our website.

Free Helpline **0808 800 6000** (Text Relay 18001)
Monday–Friday 9am–5pm, Saturday 10am–2pm
www.breastcancercare.org.uk/ATN

Talk to someone who understands

Our Someone Like Me service puts you in contact by phone or email with someone else who's had breast cancer and who's been trained to help.

Online, you can chat to other people going through breast cancer on our professionally moderated discussion Forum or join a free, weekly Live Chat session.

In your area

We provide a variety of services in person across the UK, including:

HeadStrong prepares you for the possibility of losing your hair because of cancer treatment. In a private meeting, trained volunteers talk with you about how to look after your scalp before, during and after treatment. They'll also share ideas on how to make the most of scarves, hats and other headwear.

Moving Forward Information Sessions and longer courses on adjusting to life after treatment. Both have expert speakers and offer the chance to talk to other people in the same situation as you.

Find out about all our services for people affected by breast cancer at **www.breastcancercare.org.uk/services** or phone the Helpline. We can help you decide which of our services are right for you.

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

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

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

Donate by post

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

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

Donate online

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

My details

Name ____

Address ____

____

____________________________ Postcode ____________

Email address ____________________________________

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

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

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

Please return this form to Breast Cancer Care, Freepost RRKZ-ARZY-YCKG,
5–13 Great Suffolk Street, London SE1 0NS

About this booklet

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

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

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

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

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Email publications@breastcancercare.org.uk

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Certified Member

breast cancer care
the breast cancer support charity

Breast Cancer Care is the only UK-wide charity providing specialist support and tailored information for anyone affected by breast cancer.

Our clinical expertise and emotional support network help thousands of people find a way to live with, through and beyond breast cancer.

Visit **www.breastcancercare.org.uk** or call our free Helpline on **0808 800 6000** (Text Relay 18001).

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