



Understanding Chemotherapy

A guide for people with cancer,
their families and friends

Treatment

Cancer Council Helpline

13 11 20

www.cancercouncil.com.au

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Understanding Chemotherapy is reviewed approximately every two years. Check the publication date above to ensure this copy is up to date.

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Note to reader

Always consult your doctor about matters that affect your health. This booklet is intended as a general introduction to the topic and should not be seen as a substitute for medical, legal or financial advice. You should obtain appropriate independent professional advice relevant to your specific situation and you may wish to discuss issues raised in this book with them.

All care is taken to ensure that the information in this booklet is accurate at the time of publication. Please note that information on cancer, including the diagnosis, treatment and prevention of cancer, is constantly being updated and revised by medical professionals and the research community. Cancer Council Australia and its members exclude all liability for any injury, loss or damage incurred by use of or reliance on the information provided in this booklet.

Cancer Council NSW

Cancer Council is the leading cancer charity in NSW. It plays a unique and important role in the fight against cancer through undertaking high-quality research, advocating on cancer issues, providing information and services to the public and people with cancer, and raising funds for cancer programs. This booklet is funded through the generosity of the people of NSW. To make a donation to help defeat cancer, visit Cancer Council's website at www.cancercouncil.com.au or phone 1300 780 113.



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Introduction

This booklet has been prepared to help you understand more about chemotherapy, one of the main treatments for cancer. Chemotherapy is a drug treatment that can be given in different ways and for various reasons.

Chemotherapy can cause different side effects in different people. Reactions vary depending on the type of drug used, and they can also vary from one chemotherapy treatment period (cycle) to the next. However, most side effects are temporary, and many can be controlled or reduced.

We hope this information will answer some of your questions and help you think about other questions to ask your treatment team.

This booklet does not need to be read from cover to cover – just read the parts that are useful to you. Some terms that may be unfamiliar are explained in the glossary. You may also like to pass this booklet to your family and friends for their information.

How this booklet was developed

This information was developed with help from a range of health professionals and people affected by cancer who have had chemotherapy.

Cancer Council Helpline **13 11 20** can arrange telephone support in different languages for non-English speakers. You can also call the Translating and Interpreting Service (TIS) direct on **13 14 50**.



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What is cancer?

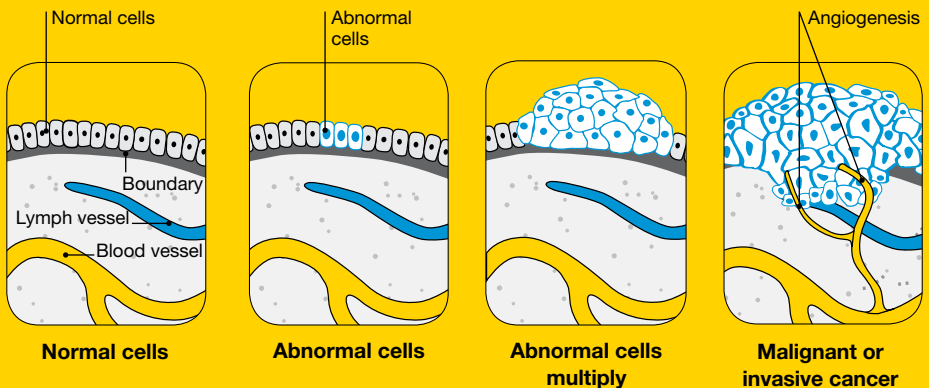
Cancer is a disease of the cells, which are the body's basic building blocks. The body constantly makes new cells to help us grow, replace worn-out tissue and heal injuries. Normally, cells multiply and die in an orderly way.

Sometimes cells don't grow, divide and die in the usual way. This may cause blood or lymph fluid in the body to become abnormal, or form a lump called a tumour. A tumour can be benign or malignant.

Benign tumour – Cells are confined to one area and are not able to spread to other parts of the body. This is not cancer.

Malignant tumour – This is made up of cancerous cells, which have the ability to spread by travelling through the bloodstream or lymphatic system (lymph fluid).

How cancer starts



The cancer that first develops in a tissue or organ is called the primary cancer. A malignant tumour is usually named after the organ or type of cell affected.

A malignant tumour that has not spread to other parts of the body is called localised cancer. A tumour may invade deeper into surrounding tissue and can grow its own blood vessels (angiogenesis).

If cancerous cells grow and form another tumour at a new site, it is called a secondary cancer or metastasis. A metastasis keeps the name of the original cancer. For example, breast cancer that has spread to the liver is called metastatic breast cancer, even though the person may be experiencing symptoms caused by problems in the liver.

How cancer spreads

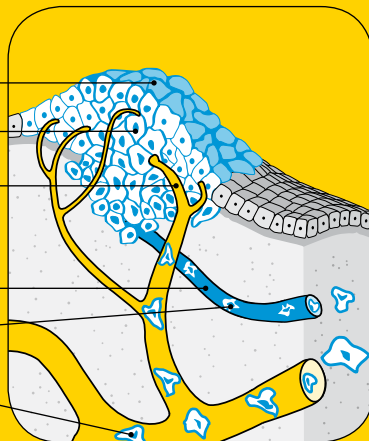
Primary cancer

Local invasion

Angiogenesis –
tumours grow their
own blood vessels

Lymph vessel

Metastasis –
cells invade other
parts of the body via
blood vessels and
lymph vessels





Treatments for cancer

Different treatments for cancer are used alone or in combination. Most cancers are treated with surgery, chemotherapy and/or radiotherapy. Other treatments, such as hormone therapy, can also be used for some types of cancer.

Sometimes drugs known as targeted therapies or biological therapies are used instead of or with chemotherapy. See page 22 for more information.

Your treatment depends on several factors, including:

- the type of cancer you have
- where it began
- whether it has spread to other parts of your body
- your general health and your age
- what treatment you want or are prepared to have.

Cancer Council has information about different cancer types and their treatments, as well as booklets about surgery and radiotherapy. Call Cancer Council 13 11 20 for free copies of these resources or download them from the website.

Chemotherapy for children

This booklet is for adults having chemotherapy, although some of the information will also be relevant for children. Talk to your doctor or treatment clinic for specific information about chemotherapy for children.



Key questions

Q: What is chemotherapy?

A: Chemotherapy is the use of drugs to kill or slow the growth of cancer cells.

Chemotherapy drugs are also called cytotoxics, which means poisonous (toxic) to cells (cyto).

Some of these drugs are obtained from natural sources such as plants, while others are completely developed in the laboratory. There are many types of chemotherapy drugs, which are often used in different combinations and at different strengths.

Q: How does it work?

A: Most chemotherapy drugs enter the bloodstream and travel throughout the body to reach cancer cells in the organs and tissues.

Chemotherapy drugs target and injure rapidly dividing cells, but because the drugs are not cancer specific, both cancer cells and some normal cells are affected. When normal cells are damaged, this can cause side effects (see pages 27–45).

By the time your next treatment starts, your body's normal cells have usually recovered but the cancer cells have not. This is because cancer cells don't repair easily, so they recover more slowly than normal cells. This means that more cancer cells are destroyed with every treatment.



Some types of chemotherapy can be delivered directly at the tumour site rather than travelling through the bloodstream. Examples include chemotherapy wafers for brain cancer (see page 16) and chemoembolisation for liver cancer (see page 17). As the treatment is localised, side effects are less common.

Q: Why have chemotherapy?

A: Chemotherapy can be used for different reasons:

Cure – Some cancers can be cured by chemotherapy on its own or in combination with other treatments, such as surgery or radiotherapy.

To help other (primary) treatments – Chemotherapy can be given either before or after other treatments. Used beforehand (neo-adjuvant therapy), its purpose is to make the cancer smaller so your primary treatment is more effective. If chemotherapy is given after your primary treatment (adjuvant therapy), its aim is to get rid of any remaining cancer cells that may not be seen on scans.

To control the cancer – If the cancer is too large and can't be cured, chemotherapy can be used to control the cancer's growth for an extended period of time.

Symptom relief – When the cancer can't be cured but causes symptoms such as pain, treatment – such as chemotherapy – can provide relief. This is called palliative treatment.

Q: How is chemotherapy given?

A: Chemotherapy can be given in a variety of ways. Most people have chemotherapy through a vein (intravenously). It can also be given orally (tablets or capsules), as a cream, or as injections into different parts of the body. For more information, see pages 13–17.

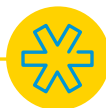
Q: Does chemotherapy hurt?

A: Having intravenous chemotherapy may feel like having your blood taken.

- If you have a temporary tube (cannula) in your hand or arm, only the initial injection may hurt. See page 14 for more information.
- If you have a central venous access device, it should not be painful. See page 14.

Some treatments will cause side effects. However, chemotherapy drugs are constantly being improved to give you the best possible results and to reduce side effects.

If you feel burning, coolness, pain or any other unusual sensation where a cannula or central venous access device enters your body, or if you have tenderness or redness over the injection site, tell your doctor or nurse immediately.



Q: Where will I have treatment?

A: Most people have chemotherapy on an outpatient basis during day visits to a hospital or clinic. Sometimes an overnight hospital stay may be needed. Some people who have oral chemotherapy or use a portable pump (see page 15) can have chemotherapy at home.

Q: How long does treatment last?

A: How often and how long you have chemotherapy depends on the type of cancer you have and the drugs that are used. You may have treatment daily, weekly or monthly for several months to a year.

Chemotherapy is commonly given in courses (cycles), with rest periods in between. This allows normal cells to recover and your body to regain its strength. If your body needs more time to recover, i.e. for the blood count to return to normal, your next cycle may be delayed.

Your doctor will discuss your treatment plan with you. Sometimes people have chemotherapy over 6–12 months, but it's possible to have it for a shorter or longer period.



Some people who have chemotherapy to control the cancer or to relieve symptoms (palliative treatment) have regular treatment for many months or years.

Q: How much does treatment cost?

A: Chemotherapy drugs are expensive, but most people only pay a fraction of the cost as many drugs are heavily subsidised by the Pharmaceutical Benefits Scheme (PBS). However, there are some drugs that are not covered by the PBS.

Your nurse, specialist or clinic will tell you what you will have to pay. You will usually have to cover the cost of medications taken at home to relieve the side effects of chemotherapy (such as anti-nausea drugs).

If you have private health insurance and elect to have your treatment privately, you may have to pay for out-of-pocket expenses and contribute to the cost of the drugs. Check with your doctor and your health fund before you start treatment.

Q: Can you have chemotherapy during pregnancy?

A: Being diagnosed with cancer during pregnancy is rare – about one in 1000 women are affected.

It is possible for some pregnant women to have chemotherapy. Your medical team will discuss all of the available treatment options with you. Their recommendations will be based on the type of cancer you have, its stage, the other treatment options, and how to avoid harming your developing baby. Sometimes chemotherapy or other treatment can be delayed until after the baby's birth.



Most pregnant women with cancer feel anxious about the potential effect of treatment on their unborn child. Being well-informed about possible treatments and side effects can make it easier to make decisions and cope with what happens.

If you have chemotherapy during pregnancy, your doctor will probably advise you to stop having it at least 3–4 weeks before your delivery date. This is because chemotherapy increases your risk of bleeding or getting an infection during the birth. Stopping chemotherapy allows your body time to recover from the side effects.

Researchers are currently doing long-term studies on women and children to explore this issue further. It is known that giving chemotherapy in the first trimester (12 weeks) increases the risk of birth defects. However, some studies on children who were exposed to chemotherapy in the womb during the second and third trimesters show that chemotherapy did not affect their development.

Different chemotherapy drugs may affect a developing baby in different ways. For example, chemotherapy may cause premature delivery. Pre-term babies often have other health problems, such as respiratory problems and delayed development.

Your doctor can talk in detail about your specific situation and what is best for your health and your unborn baby.

Treatment

Intravenous (IV) chemotherapy

Chemotherapy is most commonly given as a liquid drip into your vein (intravenously). It is usually given through a tube – see pages 14–15. Depending on the treatment, this could take about 20 minutes or several hours. Sometimes chemotherapy is given continuously over a few days via a portable pump or device.

Before chemotherapy, you may be given medication so you don't feel sick (anti-nausea or anti-emetic medication). You may also be encouraged to drink several glasses of water during the treatment.

You will probably be in a room or a lounge area with other patients when you are having chemotherapy. You are usually able to walk around the ward during the treatment, for example if you need to go to the toilet.

The nurses will assess you before chemotherapy, and monitor you during and after the treatment. They will let you know when you are able to go home.

Your nurses will also talk to you about managing side effects and tell you about any medication you need to take at home.

Many people feel well enough to travel to and from the hospital or clinic by themselves during chemotherapy. However, it is recommended that a relative or friend comes with you to your first appointment to support you and help you get home if necessary.



Inserting the intravenous device

To prepare you for IV chemotherapy, you will need to have a tube inserted, usually in a vein in your arm. There are different types – the doctor will select the most appropriate one depending on how often you need chemotherapy and how long each treatment will last.

Cannula – A small single use plastic tube that is temporarily inserted into a vein using a needle. When the needle is removed, the cannula remains in place in your arm or the back of your hand. The cannula can be kept in place if you are required to stay in hospital for a few days. If you have day treatment every few weeks, the cannula is usually put in and taken out each time you visit.

Central venous access device (CVAD) – A type of thin plastic tube that remains in your vein throughout the entire course of treatment, often for several weeks to months. Blood for testing can sometimes be taken through this tube. Common types of CVADs include:

- central line – inserted into the chest or neck
- Hickman line – inserted into the chest
- peripherally inserted central catheter – inserted into the arm
- port-a-cath (port) – small device inserted under the skin of the chest or arm.

“ My chemo infusions took about eight hours, because I had two drugs and a saline solution in-between. It was a long day, sitting in the chair having infusions. I was lucky my partner stayed with me each time. ” Cheryl (ovarian cancer)

All tubes or lines need to be kept clean to prevent infection or blockage. If you have a CVAD, a nurse may visit you at home to clean, dress and flush your line, or this can be done at a clinic. Dressings usually happen weekly; flushing depends on the device.

A line doesn't cause pain or discomfort if it is properly placed and cared for, although you will be aware that it is there. Tell your doctor or nurse immediately if you have pain, discomfort, redness or swelling around the line. This could mean that you have an infection.

Intravenous chemotherapy at home

Some people are able to have their chemotherapy at home using a portable pump. The pump is programmed to give the prescribed amount of chemotherapy over a specified period.

A chemotherapy pump can be carried in a bag or belt holster. It is usually attached to a central line. The nurses at the clinic or hospital will show you how to care for the pump.

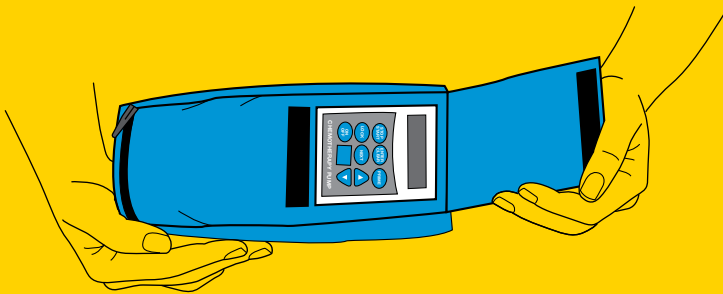


Illustration of portable chemotherapy pump

Other ways of having chemotherapy

There are other ways of having chemotherapy, depending on the drugs being used and the type of cancer you have.

Oral chemotherapy – Some people take chemotherapy tablets or capsules at home. Your doctor, nurse or pharmacist will tell you how and when to take them, how to handle the medication safely, and what side effects to expect.

Cream – Some skin cancers are treated using a chemotherapy cream applied directly to the skin.

Injections – Less commonly, chemotherapy can be injected using a needle into different parts of the body:

- intramuscular – into a muscle, usually in your buttock or thigh
- subcutaneous – just under the skin
- intrathecal – into the fluid around the spine (also known as a lumbar puncture)
- intra-arterial – into an artery, for example, the hepatic artery in the liver
- intraperitoneal – into your abdominal area (peritoneum)
- intrapleural – into the outer lining of the lungs
- intravesical – into the bladder
- intralesional – into the tumour; this method is rare.

Chemotherapy wafers – Some people who have surgery for a brain tumour (craniotomy) will have small, dissolvable gel wafers of chemotherapy placed directly into the tumour site during the operation.

High-dose chemotherapy – This is a treatment given as part of a bone marrow or peripheral blood stem cell transplant for blood cancers, such as leukaemia or lymphoma. The high-dose chemotherapy kills off all the cancer cells in the blood before the new, healthy cells are transplanted a day or two later.

Chemoembolisation – Used for liver cancer or some types of cancer that have spread to the liver, chemoembolisation is a procedure of injecting chemotherapy directly into the blood vessels supplying a tumour. The chemotherapy is mixed with tiny spheres that block the vessels and stop the tumour getting nutrients and oxygen.

Chemoradiation – Giving chemotherapy together with radiotherapy is used for some cancers, such as head and neck cancer or rectal cancer. The chemotherapy is given during the course of radiotherapy to make the radiotherapy more effective.

Smoking and chemotherapy

If you smoke, it's best to try to quit, especially while you are having chemotherapy.

suggest that smoking during chemotherapy may reduce the effectiveness of the treatment.

Research shows that people who have never smoked or ex-smokers have a better survival rate from cancer than smokers. Recent studies also

Talk to your doctor for advice, or call **13 QUIT (13 7848)** to talk to a Quitline adviser and request a free Quit Pack. See www.quitnow.gov.au for tips.

Chemotherapy is time consuming

When you have chemotherapy you may spend a lot of time waiting, usually in the hospital or clinic: waiting for the doctor, for blood tests, for test results, for your drugs to be prepared and for the drugs to be given. There are sometimes additional delays due to safety checks, emergencies or workload of the treatment centre. Bring water and snacks with you in case of long delays.

To pass the time, you may want to do the following:

- read a book or magazine, or listen to music
- complete a crossword or other puzzle
- chat with a companion
- use a laptop, tablet or other electronic device – check with the treatment centre if this is okay and the availability of power points
- write or draw in a journal
- meditate or practise relaxation techniques.

“ I became good friends with another lady who began chemotherapy on the same day as me. We ended up going walking several times a week for 18 months. The companionship was a great support. ” *Tania (breast cancer)*

At first, you may feel uncomfortable being around people who are sick because of cancer or their treatment. You may not identify with them. However, many people find support from others who are receiving chemotherapy at the same time as them.

Safety precautions

Chemotherapy is strong medicine that can be harmful to healthy people. That's why the oncology nurses and doctors wear gloves, goggles, gowns, and sometimes masks. This protective clothing reduces their risk of exposure to the drugs as they administer the chemotherapy. When treatment is over, these items are disposed of in special bags or bins.

After chemotherapy treatment, the drugs may remain in your body for up to a week. This depends on the types of drugs used. The drugs are then released into urine, stools and vomit. They could also be passed to other body fluids such as saliva, sweat, semen and breast milk.

Some people worry about the safety of their friends and family during chemotherapy treatment, especially if looking after someone at home. Your family and friends, including children, babies and pregnant women, can visit you while you're having chemotherapy. Research about the effects of coming into contact with chemotherapy drugs is continuing, and it is recommended family and friends take the safety measures listed on the next page when caring for someone at home.

If you still have questions after reading the chemotherapy safety in the home information on pages 20–21, talk to your treatment team or call Cancer Council Helpline **13 11 20**.



Chemotherapy safety in the home

Follow these safety guidelines to reduce exposure to chemotherapy while at home. Safety precautions can vary depending on the drugs you receive, so ask your medical oncologist about your individual situation.



- Put the lid down when flushing the toilet for up to a week following a treatment session to avoid splashing.



- Wash items soiled with body fluids in a separate load. Choose the maximum cycle that the fabric will allow.* Line dry these items.

*Workplace Health and Safety Queensland Department of Industrial Relations *Guide for Handling Cytotoxic Drugs and Related Waste* recommends one wash cycle.



- Keep a supply of disposable rubber gloves and cleaning cloths handy. Seal used gloves and cloths in a plastic bag before putting them in the bin.



- Wear rubber or disposable waterproof gloves when handling clothing or bed sheets soiled with vomit or other body fluids, such as urine or stools.



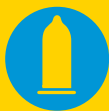
- If body fluids or chemotherapy medication spill onto household surfaces (such as the carpet or a mattress), wear rubber gloves, soak up the spill with disposable paper towels, clean around the area with a disposable cloth and soapy water, and rinse the area with water.



- If medication spills on your skin, wash the area with soap and running water. Contact the hospital if any redness or irritation caused by the spillage doesn't clear up within the hour.



- Avoid pregnancy while you are having chemotherapy (see page 44). If you have a baby, you will not be able to breastfeed during your course of chemotherapy.



- Use a condom or a female condom if having any type of sex within 7 days of chemotherapy treatment. Your doctor or nurse can give you more information about how long you need to use this protection.



- Don't crush, chew or cut chemotherapy tablets. If you can't swallow a tablet whole, talk to your doctor or pharmacist.



- Store chemotherapy tablets, capsules or injections as directed by your doctor or pharmacist – do not keep them in a pill organiser with other medications. Keep them out of reach of children. Seal empty tablet containers in a plastic bag and return them to your pharmacy or hospital oncology department for disposal.

Targeted therapies

Other drugs, called targeted therapies, may be used instead of or together with chemotherapy to target particular types of cancer cells while minimising harm to healthy cells.

Targeted therapies have different actions to help destroy or stop the growth of cancer cells. Not all cancers respond to targeted therapies, and some of these therapies are only available in clinical trials (see page 47).

Side effects

You may have side effects that are caused by the targeted therapy rather than by the chemotherapy. Side effects depend on the medication used. Some typical effects include fevers, allergic reactions, rashes, diarrhoea and blood pressure changes. Some targeted therapies can affect the way your heart works.

Rarely, some targeted therapies may cause life-threatening side effects. Your doctor will discuss this with you.



Tell your doctor if you plan to take over-the-counter medications, home remedies or complementary therapies, such as herbal or nutritional supplements, before or after chemotherapy treatment.

These may make side effects worse or affect how chemotherapy works in your body. For example, the herb St John's Wort can reduce how well some drugs work.

Drug therapies

Several different types of targeted therapies are used to treat cancer.

angiogenesis inhibitors

For cancer cells to grow and spread to other areas of the body, they need to make their own blood vessels. Drugs known as angiogenesis inhibitors attack developing blood vessels so that the cancer can't grow and spread.

tyrosine kinase inhibitors

These drugs may block certain proteins or enzymes that tell cancer cells to grow. They are sometimes called small molecule drugs.

apoptosis-inducing drugs

Apoptosis means cell death. These drugs target the part of the cancer cell that tells it when to die.

Immunotherapies

Immunotherapies (also called biological therapies) strengthen the immune system so it finds and kills cancer cells.

active immunotherapies

Stimulate your immune system to fight infection and disease. You might be given a vaccine to make your body produce antibodies to fight cancer.

passive immunotherapies

These use man-made (synthetic) antibodies developed in a laboratory to get your immune system to fight cancer cells.

receptor blocking agents

Blocking receptors can assist with cancer cell death in some cancers. For example, female hormones in breast cancer or male hormones in prostate cancer.

Is the treatment working?

Your doctor will use physical examinations, and in some cases, blood tests and scans to see if the cancer has shrunk or disappeared. If this is the case, the chemotherapy may continue.

You may wonder whether getting side effects is a sign that the chemotherapy is working. However, side effects are not usually a sign of how successful the chemotherapy is going to be.

If tests show that the cancer has shrunk and is unable to be detected, this may be called remission, which means there is no evidence of active cancer. Although the cancer is gone, your doctor will monitor you for several months or years before you are considered cured. This is because cancer can sometimes come back in the same place or grow in another part of the body.

If you are having adjuvant chemotherapy to prevent cancer coming back, it is not possible to tell if this treatment has been effective for some years. If chemotherapy is being given as palliative treatment, the relief of your symptoms will show if the treatment is working.

Which health professionals will I see?

Your general practitioner (GP) will refer you to a specialist, who can advise you about your treatment options. Your GP may also play an important role in your ongoing care.

You will be cared for by a range of health professionals during chemotherapy. This multidisciplinary team may include:

Health professional	Role
medical oncologist and haematologist	specialists who can prescribe and coordinate the course of chemotherapy
radiation oncologist	specialist who prescribes and coordinates the course of radiotherapy, which is sometimes used with chemotherapy
registrar	a qualified doctor undergoing additional training to be a specialist (for example, as a medical oncologist or radiation oncologist)
nurses	give the course of treatment and support and assist you through all stages of your treatment
cancer nurse coordinator/ clinical nurse consultant/ cancer care coordinator	coordinates your care and liaises on your behalf with different specialist care providers
pharmacist	dispenses medications and gives advice about drugs, dosage and side effects
social worker, physiotherapist and occupational therapist	link you to support services and help you to resume your normal activities
dietitian	recommends an eating plan to follow while you are in treatment and recovery
palliative care team	helps you and your family with needs you have, including symptom management



Key points

- Chemotherapy is most commonly given via a tube into a vein (intravenously).
- Usually people will have chemotherapy as an outpatient at a hospital or clinic, but sometimes they can have it at home using a portable pump.
- Oral chemotherapy as tablets or capsules is also common.
- Some chemotherapy is specific for some types of cancers: e.g. cream for skin cancer, chemoembolisation for liver cancer, or wafers for brain cancer.
- You may have one drug or a combination of drugs. Different drugs and combinations are effective for different cancer types.
- Chemotherapy can be harmful to others if they are exposed to it. For this reason, nurses and doctors wear protective clothing when giving chemotherapy. However, it is safe to be around family members and friends, including children and pregnant women.
- Your medical team will advise you about taking precautions at home to make sure your family members don't come into contact with your body fluids, such as urine or vomit, as the drugs may be passed into them. You should also handle medication with care.
- Drugs known as targeted therapies may be used instead of or with chemotherapy to target particular types of cancer cells.
- You will see a range of health professionals when you have chemotherapy. This may include a medical oncologist or haematologist, nurses and allied health professionals.



Managing side effects

While chemotherapy can kill cancer cells, it can also affect normal cells that grow or divide rapidly, such as those in the bone marrow, digestive tract, skin, hair and reproductive organs. When the normal cells are damaged, this causes side effects.

This chapter discusses the most common side effects people experience and offers suggestions to help manage them. Whether or not you experience side effects, and how severe they are, depends on the type and dose of drugs you've been prescribed and how you react individually from one treatment cycle to the next.

Side effects vary greatly. Some people will have no side effects, others will experience a range. If you have side effects, they will usually start during the first few weeks of treatment, however they can accumulate with each cycle.

Most side effects are temporary and can be managed. They tend to gradually disappear once treatment has stopped and your normal healthy cells have recovered. Depending on the side effects you experience, your doctor may change the dose or type of chemotherapy.

You should talk to your doctor or nurse before your treatment begins about the side effects you should watch out for or report, and who to contact out of hours if you have immediate concerns.

If the side effects change your appearance and self-esteem, consider attending the free Look Good...Feel Better program. For more details and to book, call 1800 650 960 or visit www.lgfb.org.au.

Chemotherapy diary

It can be useful to record information about your chemotherapy treatment in one place so you recall details about when you experienced side effects, how long they lasted and what helped to reduce them. Some people use a notebook or a diary, while others prefer technology such as a smartphone. You may want to make a note of the date, time, symptoms experienced.

Sharing the information you record with your doctors and nurses will help them give you suggestions for dealing with side effects or adjust your treatment, if appropriate.

Feeling tired and lacking energy

Feeling tired and lacking energy (fatigue) is the most common and often, debilitating side effect of chemotherapy. Fatigue can include feeling exhausted, drowsy, confused or impatient. You may have a heavy feeling in your limbs, or find it difficult to do daily activities.

Fatigue can appear suddenly and rest may not relieve it. You might still feel tired for weeks or months after a treatment cycle ends.

“ I had no idea that I would still be feeling tired five months after finishing treatment...I didn't know how to make it better and I was scared that's how it would be: that I wouldn't go back to normal, that I would never go back to having energy again. ” *George (bowel cancer)*

- Save your energy. Help your body recover by doing only the things you really need to do and resting more.
- Let people help you. Family, friends and neighbours often want to assist but may feel unsure about what to do. They could help with shopping, driving, housework or gardening.
- If you have children, ask for help looking after them during chemotherapy and a few days afterwards.
- Plan activities for the time of day when you tend to feel most energetic.
- Do light exercise, such as walking, and/or keep up with your normal exercise routine. Regular exercise can help reduce fatigue and increase appetite. Talk to your health care team about suitable activities for you.
- Try to eat a well-balanced diet with plenty of fruits and vegetables.
- Do relaxation or meditation exercises to see if they improve your sleep or give you more energy. For a copy of Cancer Council's *Relaxation and Meditation* CDs, call **13 11 20**.
- If you have a poor appetite, nausea or vomiting, see page 31 for tips.
- Check with your doctor whether your fatigue is related to low red blood cells (anaemia) so that this can be treated – see page 37.
- Discuss the impact of your treatment with your employer. Some workplaces may allow you to work flexibly during or after chemotherapy. Options include taking a few weeks off work, reducing your hours or working from home.

Appetite changes, nausea or vomiting

It is common for your appetite to change when you are going through chemotherapy, and some drugs temporarily change the taste of foods. Sometimes you may not feel hungry, or you may not enjoy the foods you used to like or crave foods you don't usually eat.

Chemotherapy can make you feel sick (nauseated) or cause you to vomit. Your medical oncologist will tell you if the drugs you are given are likely to cause nausea and vomiting. Not everyone feels sick during or after chemotherapy but, if nausea affects you, it usually starts a few hours after treatment. Nausea may last for many hours and be accompanied by vomiting or retching. Sometimes nausea lasts for days after treatment.

Anti-nausea (anti-emetic) medication helps most people avoid chemotherapy related nausea or vomiting. This medicine can be taken before, during or after treatment. It may be available as:

- **injections** – usually given before chemotherapy
- **tablets** – can be taken regularly at home
- **liquids** – added to the chemotherapy
- **wafers** – dissolved under or on top of the tongue
- **suppositories** – placed in the rectum where they dissolve.

Finding a combination of anti-nausea medication that works for you can take time. If you still have nausea or vomiting after using the prescribed medication, let your nurse or doctor know.

Being unable to keep liquids down because of vomiting can cause you to become dehydrated.

- If you are nauseous or have vomited a lot, try to keep your fluids up so that you don't get dehydrated. If you aren't able to keep fluids down, contact your doctor immediately.
- Eat a light meal before your treatment (e.g. soup and dry biscuits or toast), and drink as much fluid as possible.
- Sip fluids throughout the day, rather than trying to drink a lot at once. Sucking on ice cubes, ice-blocks or jellies can also help to increase your fluid intake.
- If your stomach is upset, try drinking fizzy drinks such as soda water or dry ginger ale.
- If you wake up feeling sick, eat a dry biscuit or a slice of toast rather than skipping food altogether or forcing yourself to have a full meal.
- Breathe deeply and gently through your mouth if you feel like you're going to vomit.
- Avoid strong odours and cooking smells.
- Eat and drink slowly. Chew your food well to make it easier to digest.
- Prepare meals between treatments and freeze them for the days you don't feel like cooking.
- Eat what you feel like, when you feel like it. For example, have cereal at dinner time and a main meal at lunch.
- Have small, frequent snacks instead of large meals.
- If the taste of certain types of food has changed, don't force yourself to eat them. Your sense of taste should return to normal after treatment ends, but it may take some time.
- Ask your treatment team about taking a stool softener if the drugs make you constipated.
- Speak to the hospital dietitian for advice about eating.
- Call Cancer Council Helpline **13 11 20** for free information about eating healthily during and after treatment.

Hair loss

Many people having chemotherapy worry about hair loss. Some people lose all their hair quickly, others lose it after several treatments, or others may only lose a little hair or none at all.



Whether or not you lose your hair depends on the drugs you receive. Some drugs don't cause this side effect. Ask your doctor if hair loss is a possibility and how you can prepare.

When hair loss does occur, it usually starts 2–3 weeks after the first treatment and grows back when chemotherapy is completed. Before, and while your hair is falling out, your scalp may feel hot, itchy, tender or tingly. Some people find that the skin on their head is extra sensitive, and they may develop pimples on their scalp.

Although losing head hair is most common, you may also lose hair from your eyebrows, eyelashes, arms, legs, chest and pubic region.

It takes 4–12 months to grow back a full head of hair. When your hair first grows back, it may be a different colour or curly (even if you have always had straight hair). In time your hair usually returns to its normal condition.

Many people find losing their hair very difficult. You may feel that your hair is part of your overall image and its loss can make you feel physically unattractive, vulnerable or sad. It's natural to feel this way. Talking to your medical team may be helpful.

- Keep your hair and scalp very clean.
- Use a mild shampoo like baby shampoo. If you want to use lotion on your head, use sorbolene. Check with your nurse before using any other hair or skin care products.
- Comb or brush your hair gently using a large comb or hairbrush with soft bristles.
- Cut your hair, especially if long, before it falls out. This can be less upsetting.
- Wear a light cotton turban or beanie to bed if you are cold at night, or to collect hair.
- Use a cotton, polyester or satin pillowcase, as nylon can irritate your scalp. If you prefer to leave your head bare, protect it against sunburn and the cold.
- Limit the use of hair dryers, rollers and harsh products.
- Talk to your hairdresser about making your hair look as good as possible even if it is thin or patchy. If you want to dye your hair, use vegetable-based dyes or those low in chemicals. Test a small area of hair for a reaction before colouring your whole head.
- If your eyelashes fall out, wear glasses or sunglasses to protect your eyes from the dust and sun while outside.
- Tell your nurse or doctor if the skin on your scalp is very sensitive, or if you have a lot of discomfort and itchiness.
- Wear a wig, toupee, hat, scarf or turban. Do whatever feels the most comfortable and gives you the most confidence.
- Consider choosing a wig before chemotherapy starts. You can borrow a wig from hospitals or treatment centres with a wig library. If you want to buy a wig and you have private health insurance, check with your fund if you are eligible for a rebate.
- Call Cancer Council Helpline **13 11 20** for assistance in finding a wig library or shop.

Skin and nail changes

Some chemotherapy drugs can affect your skin. It can darken, peel or become dry and itchy. It is also likely to be more sensitive to the sun, during and after treatment.

Some people find their nails also change and become brittle and dry, develop ridges, or have white lines across them.

tips

- Use a moisturising soap or sorbolene cream as a soap replacement.
- After showering, gently pat your skin dry with a towel. Try not to rub your skin too hard.
- Use a moisturising lotion or cream containing the ingredient urea to stop the dryness.
- Wear loose, non-restricting clothing. Choose cotton fabric instead of rough wool or synthetic fibres.
- Wash your clothing in mild detergent for people with sensitive skin.
- Stop shaving or waxing until your skin is completely healed.
- Protect your skin from the sun – especially between 10am and 3pm – by wearing high-protection sunscreen (SPF 50+), a hat and protective clothing. This advice applies to everyone, but is especially important for people having chemotherapy.
- If your skin becomes red or sore in the area where the intravenous device went in, tell your doctor or nurse immediately.
- Avoid chlorinated swimming pools as the water can make skin changes worse.

Mouth sores

Some chemotherapy drugs can cause mouth sores such as ulcers or infections. This is more likely if you have had or are having radiation to the head, neck or chest, or if you have dental or gum problems. If you notice any change in your mouth or throat, such as sores, ulcers or thickened saliva, or if you find it difficult to swallow, contact your doctor.

tips

- Discuss any dental problems with your doctor before seeing the dentist. If you need any dental work, tell your dentist you are having chemotherapy.
- Use a soft toothbrush to clean your teeth twice a day.
- Soothe tender gums and mouth sores with plain yoghurt.
- Keep your mouth clean and use a mouthwash to help heal mouth sores. Don't use commercial mouthwashes containing alcohol as they may dry out or irritate your mouth. Try a homemade mouthwash (1 tsp bicarbonate of soda or salt in a glass of warm water) at least four times a day. Start when treatment commences to prevent mouth ulcers occurring.
- Sip fluids, especially water, and eat moist foods such as casseroles or soups if you have a dry mouth. Moisten foods with butter and sauces.
- Try sucking on ice while you're having intravenous chemotherapy to reduce mouth ulcers.
- Blend foods to make them easier to eat.
- Avoid very hot foods, and spicy, acidic or coarse foods, (e.g. nuts or grains), as these can aggravate mouth sores.
- Don't smoke or drink alcohol, as this irritates the mouth.

Memory and concentration changes

Some people say they have trouble thinking clearly following chemotherapy. This is called cognitive impairment or, sometimes, ‘chemo brain’. You may find that it takes you more time to process information, or you may experience short-term memory loss or have trouble concentrating for long periods.

There is some evidence that self-help techniques such as relaxation, exercise and memory games can help. Tell your doctor if this issue is affecting your day-to-day life.

tips

- Use a calendar to keep track of tasks, appointments, social commitments, birthdays, etc.
- Write down what you have to remember. For example, make to-do lists or record where you parked the car.
- Choose activities that require less concentration. For example, read magazines with short articles instead of books with several characters or complex storylines.
- Learn something new, take up a new hobby, or do crosswords or number puzzles.
- Plan activities so you do things that require more concentration when you are fresher, such as in the morning.
- Get plenty of sleep. Deep sleep is important for memory and concentration.
- Do light exercise each day. This may help you to clear your mind and sleep better.
- Talk to your partner, family or friends about how you’re feeling. This can help prevent misunderstandings and frustration.

Effects on the blood and immune system

Some chemotherapy drugs affect the bone marrow, which is the soft and spongy material inside the bones. The bone marrow makes three types of blood cells:

- **red blood cells** – carry oxygen throughout the body
- **white blood cells** – fight infection
- **platelets** – help blood to clot and prevent bruising.

The bone marrow's job is to maintain normal levels of blood cells (your blood count) to keep you fit and healthy. When chemotherapy affects the bone marrow, your blood count is reduced. The count may fall with each treatment. This can cause problems such as anaemia, infections and bleeding problems, depending on the type of blood cell affected.

Your health care team will do regular blood tests to make sure your blood cells return to normal levels before your next treatment.

Anaemia

A low red blood cell count is called anaemia. This can make you feel tired, lethargic, dizzy or breathless.

You may need a blood transfusion to build up your red blood cells and treat the anaemia.

Eating a nourishing diet with foods rich in iron and B vitamins is also important if you are anaemic. Good sources include wholegrain breads and cereals, lean meat and green leafy vegetables.

Infections

If white blood cell numbers drop during chemotherapy, it can make you more prone to infections. Sometimes doctors recommend taking antibiotics as a precaution against infection.

If the number of neutrophils (a type of white blood cell that help protect against infection) drop during chemotherapy, you may be given an injection of granulocyte-colony stimulating factor (G-CSF) after chemotherapy. Your doctor or nurse will speak to you about possible side effects. Some people may experience bone pain or tenderness at the injection site, or show signs of an allergic reaction.

When to contact your doctor

Contact your doctor or treatment centre urgently if any of the following occur:

- chills or sweats
- a temperature of 38°C or more
- persistent or severe vomiting
- severe abdominal pain, constipation or diarrhoea
- unusual bleeding
- redness or swelling around the site of the intravenous chemotherapy device
- any serious unexpected side effects or sudden deterioration in health.

Also, contact your GP or treating specialist if you experience other symptoms that may be due to an infection. For example, sweating, especially at night; sore throat; mouth ulcers; burning or stinging on passing urine; or easy bruising.

Managing the risk of infections when your immunity is low

- Check your temperature every day.
- See your doctor if you are unwell, even if you just have a cold.
- Wash your hands with soap and water before preparing food and eating, and after using the toilet.
- Try to eat freshly cooked or prepared foods. Avoid pre-made sandwiches, salads and takeaway; soft cheeses; raw or rare fish, meat and eggs; unpasteurised dairy products and soft-serve ice-creams.
- Use separate chopping boards and utensils for raw and cooked foods, and clean thoroughly with hot, soapy water.
- Wash fruits and vegetables well, or peel where possible.
- Store raw and cooked foods separately.
- Put leftover food in airtight containers in the fridge as soon as possible.
- Cook food thoroughly to reduce the risk of bacteria developing.
- Don't eat food or drinks past their use-by or best before dates.
- Avoid people who are unwell, especially if they have the flu, conjunctivitis, measles, mumps, a cold sore or chickenpox.
- Avoid crowded places such as public transport during rush hour, shopping centres or public pools to reduce the risk of picking up an infection. This is not always practical, so use your commonsense.
- Check with your doctor about having the flu vaccine if you are having chemotherapy in winter.
- Let your doctor know if you think you have been in close contact to someone with chicken pox.

Bleeding problems

A decrease in platelets can cause you to bleed for longer than normal after minor cuts or scrapes, or to bruise more easily. You may need a platelet transfusion if they are low.

tips

- Be careful when using scissors, needles, knives or razors. Small cuts or nicks can harbour germs where an infection can start.
- Use an electric razor when shaving to reduce the chance of nicking yourself.
- Wear thick gloves when gardening to avoid injury, and to prevent infection from soil, which contains bacteria.
- Use a soft toothbrush to avoid irritating your gums.
- If you bleed, apply pressure for about 10 minutes and bandage, if appropriate.
- If you have problems with bleeding, talk to your doctor.

Change in hearing

Some chemotherapy drugs can affect your hearing. Your doctor may recommend that you have a hearing test before you start treatment.

You may be at risk of losing the ability to hear high-pitched sounds. Chemotherapy can also cause a continuous ringing noise in the ears known as tinnitus. While these changes are usually temporary, let your doctor know if you notice any change in your hearing.

Constipation or diarrhoea

Some chemotherapy drugs, pain relief medicines and anti-nausea drugs can cause constipation or diarrhoea. Tell your doctor or nurse if your bowel habits have changed.

Constipation

- Eat more high-fibre foods, such as wholegrain bread and pasta, bran, fruit and vegetables, nuts and legumes (For example, baked beans or lentils).
- Ease constipation by drinking fruit juice. Try prune, apple or pear juice.
- Drink plenty of other fluids, both warm and cold, to help loosen the bowels.
- Do some light exercise, such as walking.
- Don't use enemas or suppositories. They are not recommended for people having chemotherapy.
- Let your doctor or nurse know if you have constipation for more than a couple of days. They may change your medication or give you other medication to relieve it.

Diarrhoea

- Choose bland foods such as clear broth or boiled rice. Avoid spicy foods, wholegrain products, fatty or fried foods, rich gravies and sauces, and raw fruits or vegetables with skins or seeds.
- Limit alcohol, fruit juice, soft drinks, strong tea or coffee and dairy products, as these may further stimulate the bowel.
- Drink water to help replace the fluids lost through diarrhoea.
- Talk to your pharmacist for advice about using over-the-counter medications to treat diarrhoea at home.
- If the diarrhoea becomes severe, it can cause dehydration and you may need to be admitted to hospital.

Sex and fertility

Chemotherapy may impact on your desire or ability to have sex. It may also affect sexual organs and functioning in both women and men. This can lead to a temporary or permanent effect on your ability to have children (your fertility).

Changes in sexuality

Many people have a range of worries that cause them to lose interest in sex while they're having treatment. Aside from feeling tired and unwell, you may feel less confident about who you are and what you can do, or there may be a physical reason for not being able or ready to have sex. For example, vaginal dryness or erection difficulties are common issues after treatment.

Partners may also feel concerned about having sex – they might fear injuring the person with cancer or feel uncomfortable with the changes in their partner. If you have sex after receiving chemotherapy, you should take safety precautions – see page 21.

Sexual intercourse may not always be possible, but closeness and sharing can still be a part of your relationship. Talk about how you're feeling with your partner, and take time to adapt to any changes. Try to see yourself as a whole person (body, mind and personality) instead of focusing only on what has changed.



For more information, call Cancer Council Helpline **13 11 20** for free resources on sexuality and intimacy.

Changes in fertility

If you want to have children in the future, talk to your doctor about how chemotherapy might affect you and what options are available. Women may be able to store eggs (ova) or embryos and men may be able to store sperm for use at a later date. This needs to be done before chemotherapy starts.

Effects on women

- For some women, periods become irregular during chemotherapy but return to normal after treatment. For others, chemotherapy may cause periods to stop completely (menopause).
- After menopause, women can't have children. Signs of menopause include hot flushes, sweating – especially at night – and dry skin.
- Menopause – particularly if before age 40 – may, in the long term, cause bones to become weaker and break more easily. This is called osteoporosis.
- Talk to your doctor about ways to manage menopausal symptoms.

Effects on men

- Chemotherapy drugs may lower the number of sperm produced and reduce their ability to move. This can sometimes cause infertility, which may be temporary or permanent.
- The ability to get and keep an erection may also be affected but this is usually temporary. If the problem is ongoing, seek medical advice.

Contraception

Although chemotherapy reduces fertility, it is still possible for some women to become pregnant while having chemotherapy, and a man having chemotherapy could still make his partner pregnant.

Chemotherapy drugs can harm an unborn baby, so women should not become pregnant during the course of chemotherapy, and men should not father a child. Should you or your partner become pregnant, talk to your treating doctor immediately.

The type of birth control you choose will depend on what you and your partner are comfortable using. Some people use barrier contraception (e.g. condoms), which provide protection against any cytotoxic drug by-products that may be secreted in body fluids. Young women may be prescribed the Pill as a contraceptive and to help protect the ovaries from the effects of chemotherapy.

Nerve and muscle effects

Some drugs can cause tingling and loss of sensation in your fingers and/or toes, and muscle weakness in your legs. If this happens, tell your doctor or nurse before your next treatment. Your treatment may need to be changed or the problem carefully monitored.

“ I had numbness and terrible pain in my hands from one drug. Doing exercises and soaking my hands in warm water helped. The doctors stopped that drug so the side effects wouldn't become permanent. ” *Ann (ovarian cancer)*



Key points

- Many people experience side effects from chemotherapy. Side effects are caused when the chemotherapy damages rapidly dividing healthy cells.
- Most side effects are temporary and gradually go away after you've finished treatment.
- Common side effects include feeling tired, loss of appetite, nausea, mouth sores, digestive problems, hair loss and skin problems.
- You may also have nerve and muscle effects, hearing changes and a reduced ability to concentrate or remember things.
- You will also be at an increased risk of infections. This is because chemotherapy can reduce your levels of white blood cells, which are necessary for fighting infections.
- You may have sexuality and fertility problems, such as reduced sexual desire (libido) or loss of fertility. You might be able to store eggs (ova), embryos or sperm for use at a later date. Talk to your doctor about these issues.
- Your doctor or nurse will advise you on how to cope with any side effects. You may be given medication or suggestions for eating, drinking and looking after yourself.
- If you have any side effects that weren't discussed with you before treatment, let your health care team know so that they can help you.
- It may be helpful to record your symptoms, when they occurred and what you did to relieve them. Show your notes to your doctor or nurse so they are aware of how the chemotherapy is affecting you.



Making treatment decisions

Sometimes it is difficult to decide on the type of treatment to have. You may feel that everything is happening too fast. Check with your doctor how soon your treatment should start, and take as much time as you can before making a decision.

Understanding the disease, the available treatments and possible side effects can help you weigh up the pros and cons of different treatments and make a well-informed decision that's based on your personal values. You may also want to discuss the options with your doctor, friends and family.

You have the right to accept or refuse any treatment offered. Some people with more advanced cancer choose treatment even if it only offers a small benefit for a short period of time. Others want to make sure the benefits outweigh the side effects so that they have the best possible quality of life.

Talking with doctors

When your doctor first tells you that you have cancer, you may not remember the details about what you are told. Taking notes or recording the discussion may help. Many people like to have a family member or friend go with them to take part in the discussion, take notes or simply listen.

If you are confused or want clarification, you can ask questions – see page 52 for a list of suggested questions. If you have several questions, you may want to talk to a nurse or ask the office manager if it is possible to book a longer appointment.

A second opinion

You may want to get a second opinion from another specialist to confirm or clarify your doctor's recommendations or reassure you that you have explored all of your options. Specialists are used to people doing this.

Your doctor can refer you to another specialist and send your initial results to that person. You can get a second opinion even if you have started treatment or still want to be treated by your first doctor. You might decide you would prefer to be treated by the doctor who provided the second opinion.

Taking part in a clinical trial

Your doctor or nurse may suggest you take part in a clinical trial. Doctors run clinical trials to test new or modified treatments and ways of diagnosing disease to see if they are better than current methods. For example, if you join a randomised trial for a new treatment, you will be chosen at random to receive either the best existing treatment or the modified new treatment.

Over the years, trials have improved treatments and led to better outcomes for people diagnosed with cancer.

It may be helpful to talk to your specialist or clinical trials nurse, or get a second opinion. If you decide to take part, you can withdraw at any time. For more information, call the Helpline for a free copy of *Understanding Clinical Trials and Research* or visit www.australiancancertrials.gov.au.



Cancer Council services

Cancer Council offers a range of services to support people affected by cancer, their families and friends.

Cancer Council Helpline 13 11 20 – This is many people's first point of contact if they have a cancer-related question. Trained professionals will answer any questions you have about your situation. For more information, see the inside back cover.

Practical help – Your local Cancer Council can help you access services or offer advice to manage the practical impact of a cancer diagnosis. This may include access to transport and accommodation or legal and financial support. Call 13 11 20 to find out what is available in your state or territory.

Support services – You might find it helpful to share your experiences with other people affected by cancer. For some people, this means joining a support group. Others prefer to talk to a trained volunteer who has had a similar cancer experience.

Cancer Council can link you with others by phone, in person or online at www.cancerconnections.com.au. Call us to find out what services are available in your area.

Life after cancer – It's natural to feel a bit lost after finishing treatment. You might notice every ache or pain and worry that the cancer is coming back.

Cancer Council can provide support and information to people adjusting to life after cancer – call the Helpline for details.

Printed, online and audiovisual resources – In addition to this resource, there is a wide variety of free information available about cancer-related topics. Cancer Council produces easy-to-read booklets and fact sheets on more than 20 types of cancer, treatment, emotional issues and recovery.

Cancer Council publications are developed in consultation with health professionals and consumers. Content is reviewed regularly, according to best practice guidelines for health information.

Related publications*

You might also find the following free Cancer Council publications and audiovisual resources useful:

- *Emotions and Cancer*
- *Nutrition and Cancer*
- *Talking to Kids About Cancer*
- *Understanding Clinical Trials and Research*
- *Complementary Therapies* booklet, *Relaxation and Meditation* CDs
- *Cancer, Work & You*
- *Overcoming Cancer Pain*
- *Caring for Someone with Cancer*
- *Sexuality, Intimacy and Cancer*
- *Living Well After Cancer*
- *Living with Advanced Cancer*
- *Understanding Palliative Care*
- *Facing End of Life*

Call **13 11 20** for copies, or download them from your local Cancer Council website.

** May not be available in all states and territories.*



Caring for someone with cancer

You may be reading this booklet because you are caring for someone with cancer. Being a carer can be stressful and cause you much anxiety. Try to look after yourself – give yourself some time out and share your worries and concerns with somebody neutral such as a counsellor or your doctor.

Many cancer support groups and cancer education programs are open to carers, as well as people with cancer. Support groups and programs can offer valuable opportunities to share experiences and ways of coping.

Support services such as Home Help, Meals on Wheels or visiting nurses can help you in your caring role. There are also many groups and organisations that can provide you with information and support, such as Carers Australia, the national body representing carers in Australia. Carers Australia works with the Carers Associations in each of the states and territories. Phone 1800 242 636 or visit www.carersaustralia.com.au for more information and resources.

You can also call Cancer Council Helpline 13 11 20 to find out more about carers' services and get a copy of the *Caring for Someone with Cancer* booklet.



Useful websites

The internet has many useful resources, although not all websites are reliable. The websites listed below are good sources of support and information.

Australian

Cancer Council Australia.....	www.cancer.org.au
Cancer Australia.....	www.canceraustralia.gov.au
Cancer Connections.....	www.cancerconnections.com.au
Carers Australia.....	www.carersaustralia.com.au
Department of Health.....	www.health.gov.au
Healthdirect Australia.....	www.healthdirect.gov.au

International

American Cancer Society.....	www.cancer.org
Macmillan Cancer Support.....	www.macmillan.org.uk
National Cancer Institute.....	www.cancer.gov
Chemocare.....	www.chemocare.com



Question checklist

You may find this checklist helpful when thinking about the questions you want to ask your doctor about your disease and treatment. If your doctor gives you answers that you don't understand, ask for clarification.

- Why do I need chemotherapy?
- What are the advantages and disadvantages of chemotherapy for me?
- How successful is chemotherapy for my type of cancer?
- Are there any other treatments I can have instead?
- How much does treatment cost?
- What drugs will I be receiving? How will they be given?
- How often will I receive this treatment? How long will I have treatment?
- Where will I have the chemotherapy? Can I have it close to where I live?
- What are the possible side effects of this treatment and what can I do to control them?
- Are there any complementary therapies that may help?
- How will I know if the treatment is working?
- Will chemotherapy affect my sex life and fertility?
- After treatment has finished, will I need check-ups?
- Who should I contact for information or if I have a problem during treatment? Who is my after-hours contact?



Glossary

adjuvant therapy

A treatment given with or shortly after another treatment to enhance its effectiveness.

anaemia

Deficiency in the number or quality of red blood cells in the body.

angiogenesis

The formation of new blood vessels. This enables tumours to develop their own blood supply, which helps them survive and grow.

antibody

Part of the body's immune system. Antibodies are proteins made by the blood in response to an invader (antigen) in the body. They help protect against viruses, bacteria and other foreign substances.

apoptosis

A type of programmed (normal) cell death. This is the body's normal way of getting rid of damaged, unneeded or unwanted cells.

benign

Not cancerous or malignant. Benign lumps are not able to spread to other parts of the body.

biological therapies

A range of medicines made from purified versions of chemicals that are naturally made in the body. They include monoclonal antibodies and immunotherapy. Also called biotherapies.

bone marrow

The soft, spongy material inside bones. Bone marrow contains stem

cells that produce red blood cells, white blood cells and platelets.

cannula

A plastic tube inserted into a narrow opening (usually a vein) so that fluids can be introduced or removed.

cells

The basic organisational unit of all living things. A human is made of billions of cells, which are adapted for different functions.

central line

A type of central venous access device used to give direct access to a vein in the chest or neck.

central venous access device (CVAD)

A type of thin plastic tube inserted into a vein. The CVAD gives access to a vein so blood or chemotherapy can be given, and blood can be taken. Types of CVADs include central lines, Hickman lines, peripherally inserted central catheters and port-a-caths.

chemotherapy

The use of cytotoxic drugs to treat cancer by killing cancer cells or slowing their growth. May be given in combination or with other treatments.

chemotherapy pump

A portable device that allows a person to receive chemotherapy at home. The pump is usually attached to a central line and carried around a person's waist in a bag or belt holster.

cycle

The time between one chemotherapy treatment session and the next.

cytotoxic

A substance (e.g. chemotherapy) that can kill or slow the growth of cancer cells.

fertility

The ability to conceive a child.

genes

The tiny units that govern the way the body's cells grow and behave. Genes are found in every cell of the body and are inherited from both parents.

granulocyte-colony stimulating factor (G-CSF)

A protein that helps increase the bone marrow production of certain white blood cells called neutrophils, which fight infection.

Hickman line

A type of central venous access device inserted into a vein in the chest.

hormone treatment

A treatment that blocks the body's natural hormones that help cancer grow, which is used when the cancer is growing in response to hormones. Also called hormone therapy.

immunotherapy

Treatment that stimulates the body's immune system to fight cancer's response. Types include active and passive therapy. Also called biological therapy.

infusion

A slow injection of a substance into a vein or other tissue.

intravenous (IV)

Inserted into a vein.

malignant

Cancer. Malignant cells can spread (metastasise) and can eventually cause death if they cannot be treated.

menopause

When a woman stops having periods (menstruating). This can happen naturally, from treatment or because the ovaries have been removed.

metastasis

A cancer that has spread from another part of the body. Also known as secondary cancer.

neo-adjuvant therapy

Giving treatment before the primary treatment to try and make the primary treatment more successful.

neutrophil

A type of white blood cell that defends the body against bacteria.

oncologist

A doctor who specialises in the study and treatment of cancer.

palliative treatment

Medical treatment for people with advanced disease, to help them manage pain and other physical and emotional symptoms.

peripherally inserted central catheter (PICC)

A type of central venous access device that is inserted into a vein in the arm.

platelets

One of three types of cells found in the blood. These help the blood to clot and stop bleeding. Also called thrombocytes.

port-a-cath (port)

A type of central venous access device. A thin tube put into a vein with an opening under the skin for delivering medication.

primary cancer

The original cancer. Cells from the primary cancer may break away and be carried to other parts of the body, where secondary cancers may form.

radiotherapy

The use of radiation, usually x-rays or gamma rays, to kill cancer cells or injure them so they cannot grow and multiply. Also called radiation therapy.

red blood cells

One of three types of cells found in the blood. They carry oxygen around the body. Also called erythrocytes.

remission

When the symptoms of the cancer reduce or disappear. A partial remission means a significant improvement in the cancer. A complete remission means no evidence of active cancer.

secondary cancer

A tumour that has spread from the original site to another part of the body. Also called a metastasis.

side effect

Unintended effect of a drug or treatment.

targeted therapy

Treatment that attacks specific weaknesses of cancer cells while minimising harm to healthy cells. Two types of targeted therapies are small molecule drugs and immunotherapies.

tissue

A collection of cells that make up a part of the body.

tumour

A new or abnormal growth of tissue on or in the body. A tumour may be benign or malignant.

tyrosine kinase inhibitor

An example of a small molecule targeted therapy that block enzymes involved with cell growth.

vaccine

A substance given to stimulate the body's production of antibodies and provide immunity against a disease.

white blood cells

One of three types of cells found in the blood. They help fight infection. Types of white blood cells include neutrophils, lymphocytes and monocytes. Also called leucocytes.

Can't find what you're looking for?

For more cancer-related words, visit www.cancerCouncil.com.au/words or www.cancervic.org.au/glossary.



How you can help

At Cancer Council we're dedicated to improving cancer control. As well as funding millions of dollars in cancer research every year, we advocate for the highest quality care for cancer patients and their families. We create cancer-smart communities by educating people about cancer, its prevention and early detection. We offer a range of practical and support services for people and families affected by cancer. All these programs would not be possible without community support, great and small.

Join a Cancer Council event: Join one of our community fundraising events such as Daffodil Day, Australia's Biggest Morning Tea, Relay For Life, Girls Night In and Pink Ribbon Day, or hold your own fundraiser or become a volunteer.

Make a donation: Any gift, large or small, makes a meaningful contribution to our work in supporting people with cancer and their families now and in the future.

Buy Cancer Council sun protection products: Every purchase helps you prevent cancer and contribute financially to our goals.

Help us speak out for a cancer-smart community: We are a leading advocate for cancer prevention and improved patient services. You can help us speak out on important cancer issues and help us improve cancer awareness by living and promoting a cancer-smart lifestyle.

Join a research study: Cancer Council funds and carries out research investigating the causes, management, outcomes and impacts of different cancers. You may be able to join a study.

To find out more about how you, your family and friends can help, please call your local Cancer Council.



Cancer Council Helpline 13 11 20

Cancer Council Helpline is a telephone information service provided by Cancer Council NSW for people affected by cancer.

For the cost of a local call (except from mobiles), you can talk about any concerns confidentially with oncology health professionals. Helpline consultants can send you information and put you in touch with services in your area. If you need information in a language other than English, an interpreting service is available.

You can call the Helpline, Monday to Friday, 9am to 5pm.

If you have difficulty communicating over the phone, contact the National Relay Service (www.relayservice.com.au) to help you communicate with a Cancer Council Helpline consultant.

For more information, go to www.cancercouncil.com.au.

Regional offices

Central and Southern Sydney

Woolloomooloo
02 9334 1900

Hunter and Central Coast

Charlestown
02 4923 0700

North Sydney

Crows Nest
02 9334 1600

Northern

Byron Bay
02 6639 1300

Southern

North Wollongong
02 4223 0200

Western

Wagga Wagga
02 6937 2600

Western Sydney

Parramatta
02 9354 2000

For support and information on cancer and cancer-related issues, call Cancer Council Helpline. This is a confidential service.

For further information and details please visit our website: www.cancercouncil.com.au



Cancer Council
Helpline

13 11 20