

Understanding

Chemotherapy and other cancer drugs

(including targeted therapies
and immunotherapies)

Caring for people with cancer

Understanding

Understanding chemotherapy and other cancer drugs

(including targeted therapies and immunotherapies)

This booklet has information on:

- Chemotherapy, targeted therapies and immunotherapies
- Side-effects and how to manage them
- Life during and after treatment
- Financial and practical matters

Useful numbers

TELEPHONE

Specialist nurse

Hospital

Family doctor (GP)

Surgeon

Oncologist / haematologist

Radiation oncologist

Emergency

Medical social worker



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Fast facts

What do cancer drugs do? Page 7

Cancer drugs can cure cancer, prevent it coming back or reduce the size of cancer before surgery or radiotherapy. They can also control cancer and ease cancer symptoms.

This booklet has information on:

- Chemotherapy (page 13)
- Targeted therapies (page 19)
- Immunotherapy (page 27)

How does my doctor decide which drug to use? Page 9

The type of drug and dose you need depends on many factors, including the type of cancer you have and your general health. You might have a combination of drugs.

How are cancer drugs given? Page 49

The 2 most common ways to have cancer drugs are by injection into a vein or by mouth. Most people have their treatment in a day hospital or clinic. Some people can have their treatment at home.

How long will I have treatment for? Page 38

Chemotherapy, targeted therapies and immunotherapies are usually given in a course of treatments. A treatment course can last weeks, months or years.

Will I get side-effects? Page 67

The side-effects you might have vary from person to person and depend on the cancer drugs you are having. Most side-effects ease in the weeks and months after treatment. Ask your doctor or nurse to tick the side-effects on page 71 that may apply to you.

There are treatments to help with most side-effects, so tell your doctor if you have any. Don't suffer in silence.

Clinical trials Page 41

Clinical trials are when cancer patients get a new type of treatment to see if it works better than existing treatments. Ask your doctor if there are any trials suitable for you.

We're here for you Page 117

If you or your family have any questions or worries, want to know where to get support, or if you just need to talk, you can talk to one of our cancer nurses.

- Call our Cancer Nurseline on 1800 200 700
- Drop in to a Daffodil Centre
- Email us: cancernurseline@irishcancer.ie

Reading this booklet



This booklet is to help you throughout your cancer treatment and afterwards. You will probably find different sections useful at different times, so keep it for reference. Ask your nurse or doctor to highlight the sections most relevant to you.

If you need more information or don't understand something, ask your doctor or nurse. You can also ask one of our cancer nurses:

- Call our Cancer Nurseline on Freephone 1800 200 700
- Visit a Daffodil Centre
- Email the nurses at cancernurseline@irishcancer.ie

We cannot give advice about the best treatment for you. Talk to your hospital team about your treatment and care - they know your medical history and your individual circumstances.

Introduction

There are many different types of cancer drugs. Some treat cancer and others help to relieve symptoms such as sickness and pain. This booklet is about drugs that treat cancer.

Cancer drugs work in different ways to destroy cancer cells, stop them from spreading or slow down their growth. Knowing more about how these drugs work, how they are given and their possible side-effects can help you cope with treatment.

The drug treatments described in this booklet are:

- Chemotherapy (page 13)
- Targeted therapies (page 19)
- Immunotherapies (page 27)

This booklet does not have information on hormone therapies. For more information on hormone therapies call our Cancer Nurseline on Freephone 1800 200 700 or drop into a Daffodil Centre. You can also visit our website www.cancer.ie

Why and when are chemotherapy and other cancer drugs given?

There are many reasons why chemotherapy, targeted therapies and immunotherapies are given. Sometimes they can be given for more than one reason.

Curing cancer

Cancer drugs can destroy some cancers and cure the disease. The cancer cells will no longer be present in your body.

Reducing the size of cancer

Cancer drugs can be given to shrink a cancer before surgery or radiotherapy. This can make it easier to remove during surgery or make radiotherapy work better. This is called neo-adjuvant therapy. If curing the cancer is not possible, they can shrink cancers that are causing pain and pressure.

Preventing cancer coming back

Cancer drugs may be given after surgery or radiotherapy to destroy any remaining cancer cells. Sometimes cancer cells are so tiny they cannot be seen on X-rays or scans. This is called adjuvant treatment.

Controlling cancer

Cancer drugs can help stop cancer from spreading, slow its growth, or destroy cancer cells that have spread to other parts of your body. This can improve your quality of life and help you to live longer.

Easing cancer symptoms

If a cure is not possible, cancer drugs may be given to shrink and control the cancer, or to reduce the number of cancer cells. This may then improve your quality of life. This is called palliative treatment.

Making radiotherapy and other cancer therapies more effective

Cancer drugs can be given at the same time as radiotherapy to make it more effective. This is called chemoradiotherapy.



How does my doctor decide which drugs to use?

The drug your doctor decides to give you is based on years of research. You may have a combination of cancer drugs. For example, chemotherapy and targeted therapies. Your doctor's choice of drug or drugs depends on:

- The type of cancer you have. Some kinds of cancer drugs are used for many types of cancer. Other drugs are used for just one or two types of cancer
- If the cancer has spread
- If you have had a cancer drug before
- If you have other health problems, such as diabetes, heart disease or kidney disease
- Your age and your fitness level. This is also called your performance status.
- If you have a specific protein or gene that will respond well to a certain drug
- If you have specific genetic changes in your cancer.

Your doctor may also ask you to take part in a clinical trial. This is where a new drug is being tested to see if it might benefit cancer patients. See page 41 for more details about clinical trials.



Cancer Nurseline Freephone 1800 200 700



Chemotherapy

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Chemotherapy



- Chemotherapy gets into cancer cells and either kills them or stops them from being able to grow.
- You can have chemotherapy as a drip (infusion) into the bloodstream, an injection or a tablet.
- Chemotherapy can also affect normal cells, causing side-effects.
- The side-effects of chemotherapy depend on the drugs being used and vary from person to person.

What is chemotherapy?

Chemotherapy is a treatment using drugs that cure or control cancer. Not all forms of cancer are treated by chemotherapy, as other treatments may work better. Also, some cancers are not sensitive to chemotherapy drugs so they are not used.

The drugs mainly used are cytotoxic. This means that they interrupt the way cancer cells grow and divide, but they also affect normal cells.

How does chemotherapy work?

- Chemotherapy drugs affect how a cancer cell divides and grows.
- In the centre of each living cell is the nucleus. This is the control centre of the cell.
- The nucleus contains chromosomes that are made up of genes. Each time a cell divides to make more cells, these genes must be copied exactly.

- Chemotherapy can damage the chromosomes and genes inside the cancer cell. It can also stop the chromosomes being put into a new cell, preventing them from growing.
- Cancer cells are more sensitive to chemotherapy than healthy cells because they divide more frequently.

Some fast-growing, normal cells like those in the lining of your mouth, your bone marrow (which makes blood cells), hair roots, digestive system and your reproductive organs also take up these drugs. Healthy cells usually repair the damage caused by chemotherapy but cancer cells cannot and so eventually die. Damage to the normal cells is usually short term and most side-effects will disappear once the treatment is over. But chemotherapy can cause long-term side-effects that do not go away. For detailed information on side-effects, see page 67.

Naming chemotherapy drugs

Like all drugs, chemotherapy drugs usually have two names: the generic name and the brand name. The generic name is the chemical name of a drug, for example, paracetamol. The brand name or trade name is the name given by the manufacturer of the drug, for example, Panadol. Drugs can be known by their generic or brand names. Ask your doctor or nurse if you would like more information about the name or names of the drugs you are taking.

Cancer is often treated with a combination of anti-cancer drugs. These combinations used by your doctor are often known by a word made up from the first letters of the drug names (an acronym). For example, AC is adriamycin and cyclophosphamide.

Find out more



If you know the name of your chemotherapy drug, visit the Health Product Regulatory Authority's website at www.hpra.ie where you will find more information about:

- What the drug is
- How it is given
- Possible side-effects

How is chemotherapy given?

You can have chemotherapy as:

- A drip (intravenous infusion) into the bloodstream through a vein. For more information see page 50
- An injection into the bloodstream (usually through a vein). For more information see page 50
- Tablets or capsules. For more information, see page 61
- By injection into the fluid around the spine and brain (intrathecal chemotherapy)
- Directly into an organ, such as the liver
- As an injection under the skin (subcutaneous)



Chemotherapy is usually given in a course of treatments. This course can last weeks or months. For more information, see page 38.

For more information on where you will have your chemotherapy, see page 57.

What are the side-effects of chemotherapy?

The effects of the chemotherapy on healthy cells can cause side-effects. These side-effects depend on the drugs being used and vary from person to person. Your doctor and nurse will explain your treatment to you in more detail and tell you about any likely side-effects. Chemotherapy affects some people more than others. Your doctor may need to adjust your dose to take this into account.

Always tell your doctor or nurse if you don't feel well or if you are having any symptoms that are troubling you.


For more information on common side-effects of cancer treatment, see our side-effects section on page 67. Common side-effects are listed on page 71 in alphabetical order. Ask your doctor or nurse to tick the side-effects that your treatment may cause.



Targeted drug therapies

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Targeted drug therapies

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- Targeted drug therapies target certain parts of cancer cells that make them different from normal cells.
 - Different targeted therapies work in different ways.
 - You might have a targeted drug as your main treatment or you might have it with chemotherapy and/or radiotherapy.
 - Targeted drugs can be given as a tablet, an injection under the skin or into a vein through a drip.
 - The side-effects of targeted drug therapies depend on the drugs being used and vary from person to person.

What are targeted drug therapies?

Targeted therapies are drugs that work by 'targeting' certain parts of cancer cells that make them different from other cells. In other words, they take advantage of differences between normal cells and cancer cells.

Different targeted therapies work in different ways. Targeted therapies can work to:

- Block or turn off chemical signals that tell the cancer cell to grow and divide
- Change proteins within the cancer cells so the cells die
- Stop making new blood vessels to feed the cancer cells
- Carry toxins to the cancer cells to kill them
- Help chemotherapy get directly to cancer cells

Am I suitable for targeted therapies?

Targeted drug therapies are not suitable for all types of cancers. Whether you have targeted therapy depends on:

- Your overall health
- The type of cancer you have and how far it has spread (the stage)
- Your treatment history
- Whether you have specific genetic changes in your cancer.

For some cancers, targeted drug therapies are one of the main treatments. For example, melanoma. For other cancers, you might have a targeted drug with other treatments, such as chemotherapy and radiotherapy.

Testing

Before you have some types of targeted drugs you might need to have tests using some of your cancer cells or a blood sample to find out whether the treatment is likely to work. These tests look for changes in certain proteins or genes. This is not the case for all targeted drugs and you don't always need these tests.



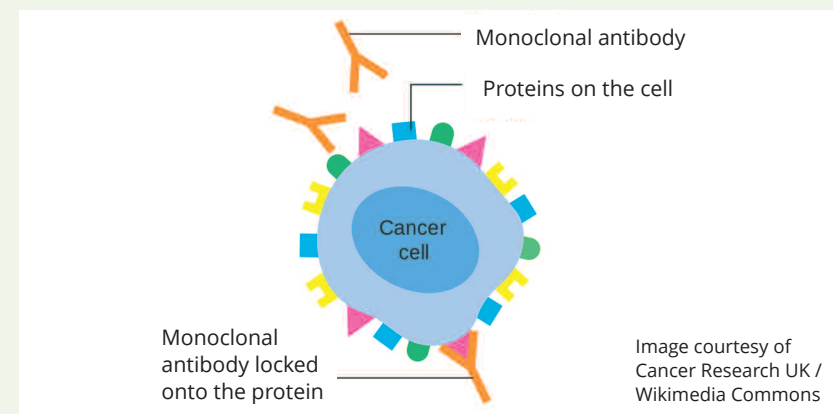
Types of targeted therapies

There isn't a simple way of grouping targeted therapies that is easy to follow. This can sometimes be confusing. Some drugs belong to more than one group because they work in more than one way. For ease, we have grouped targeted drug therapies into:

- **Monoclonal antibodies**
- **Cancer growth inhibitors**
- **Angiogenesis inhibitors**
- **PARP inhibitors**

Monoclonal antibodies

Monoclonal antibodies are made in a laboratory. They locate and attach to specific proteins on cancer cells, and 'lock' onto them like a key in a lock.



Once the monoclonal antibody has 'locked' into a protein it can:

- Block signals telling cancer cells to divide
- Carry a chemotherapy drug straight to a cancer cell

Some monoclonal antibodies trigger the immune system to attack and kill cancer cells. These monoclonal antibodies are also a type of immunotherapy. For more information on monoclonal antibodies that have an effect on the immune system, see page 29.

There are many different types of monoclonal antibodies and each one is made to attach to a different part of the cancer cell. They are usually given as injections into a vein or under the skin.

Cancer growth inhibitors

Cancer cells need to communicate with each other in order to grow and multiply. They do this through a series of chemical signals. Cancer growth inhibitors interrupt the communication process and in this way prevent the cancer from developing.

There are different types of cancer growth inhibitors and they each work in a different way. They can be grouped according to the types of chemical that they block. For example, tyrosine kinase inhibitors (TKIs) block chemicals called tyrosine kinases. Tyrosine kinases help cells to grow, so blocking them stops the cell growing and dividing. Cancer growth inhibitors are usually given as tablets.

Angiogenesis inhibitors

Angiogenesis means the growth of new blood vessels. In a healthy person, angiogenesis is part of the normal healing process. For example, it helps to heal a wound. In cancer, angiogenesis provides a tumour with its own blood supply. A cancer needs a good blood supply to provide itself with nutrients and oxygen.

Angiogenesis inhibitors interfere with the growth of blood vessels. This means that the cancer is unable to receive the oxygen and nutrients it needs to survive. There are different types of angiogenesis inhibitors. They can work to:

- Block the chemical signals that tell blood vessels to grow
- Block the chemicals that cells use to tell each other to grow

Angiogenesis inhibitors are usually given as an injection into the vein.

PARP inhibitors

PARP is a protein in our cells. It helps damaged cells to repair themselves. PARP inhibitors work by stopping the PARP protein from repairing cancer cells. The cancer cell then dies.

How are targeted therapies given?



- Some drugs are given in tablet form. For more information see page 61.
- Others are given as an injection under the skin or into a vein through a drip. For more information see page 50.

How often you have treatment and how many treatments you need will depend on the drug and the type of cancer you have. Targeted therapies are usually given in a course of treatments. This course can last weeks, months or years. For more information, see page 38.

For more information on where you will have your targeted therapy, see page 57.

Find out more



If you know the name of the targeted therapy you are looking for, visit the Health Product Regulatory Authority's website at www.hpra.ie where you will find more information about:

- What the drug is
- How it is given
- Possible side-effects

What are the side-effects of targeted therapies?

The side-effects of targeted therapies depend on the drugs being used and vary from person to person. Your doctor and nurse will explain your treatment to you in more detail and tell you about any likely side-effects. Doctors have ways to reduce most side-effects. This will not affect how well your treatment will work. Always tell your doctor or nurse if you don't feel well or if you are having any symptoms that are troubling you.

For more information on common side-effects of targeted therapies, see our side-effects section on page 67. Ask your doctor or nurse to tick the side-effects listed on page 71 that may affect you.

New developments




New targeted therapies are being developed all the time and existing therapies are being used in new ways. You may also be given a targeted therapy as part of a clinical trial (see page 41). Ask your doctor if there are any targeted therapies available to treat your cancer or if there are any trials that are suitable for you.

Immunotherapy

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Immunotherapy

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- Immunotherapies change parts of the immune system to work better to fight cancer cells.
 - Different immunotherapy drugs work in different ways.
 - You can have immunotherapy into a vein through a drip, as a tablet, or an injection under the skin.
 - You might have immunotherapy on its own or with other cancer treatments.
 - The side-effects of immunotherapies depend on the drugs being used and vary from person to person.

What is immunotherapy?

Immunotherapy treatment helps your immune system to work better to fight cancer cells.

Our immune system is often not good at recognising or clearing cancer cells from our body. Sometimes cancer cells find a way of hiding from the immune system, allowing cancer to develop or spread.

Immunotherapy treatments can change special immune cells to help them attack the cancer directly. They can also change other parts of the immune system to make it more difficult for cancer cells to grow or spread.

Am I suitable for immunotherapy?

A relatively small but growing number of patients are benefitting from immunotherapy drugs. Immunotherapy is not right for everyone, so talk to your doctor to find out whether you may benefit

from this treatment. To work out if immunotherapy is suitable, your doctor will consider:

- Your overall health
- The type of cancer you have and how far it has spread (the stage)
- Your treatment history.

Testing

Before you have immunotherapy you might need to have tests to find out whether the treatment is likely to work. These tests look for changes in certain proteins, genes or chromosomes. Testing can be done on your blood, bone marrow or cancer tissue, depending on your cancer type. You don't always need these tests.

The immune system

The immune system protects you against disease and infection caused by bacteria, viruses, fungi or parasites. It is made up of organs such as your spleen, your lymph system and special cells, all working together. It is a collection of reactions and responses that the body makes to damaged cells or infection. It is sometimes called the immune response.

To understand how immunotherapy works, we need to know about special white blood cells called lymphocytes. There are 2 types of lymphocytes:

B cells: B cells make proteins called antibodies. The job of antibodies is to lock onto the invading bacteria or virus. The body then knows the invader is dangerous and needs to be destroyed. B cells also remember these invaders. The next time the same germ tries to invade, the B cells are ready for it and fight it off quickly.

T cells: There are 2 different kinds of T cells – helper T cells and killer T cells:

- **Helper T cells** encourage B cells to make antibodies and help killer cells develop.
- **Killer T cells** kill the body's own cells that have been invaded by viruses or bacteria. This stops the germ from infecting other cells.

Types of immunotherapy

There isn't a simple way of grouping immunotherapy drugs that is easy to follow. This is because some drugs work in more than one way and belong to more than one group. So you might hear the same drug or treatment called different things.

Checkpoint inhibitors

T cells have proteins on them that turn on an immune response and other proteins that turn it off. These are called checkpoints. Cancer cells sometimes find ways to use these checkpoints to hide from the immune system. They do this by making high levels of proteins to switch off T cells, when the T cells should really be attacking the cancer cells.

Checkpoint inhibitors work by blocking the proteins that stop the immune system from killing cancer cells. When checkpoint inhibitors block these proteins, this turns the immune system back on and the T cells are able to find and destroy the cancer cells.

There are many different types of checkpoint inhibitors. Whether you have this treatment depends on what treatment you've had to date and the stage of your cancer. You may also have this treatment as part of a clinical trial.

Monoclonal antibodies

The immune system makes large numbers of antibodies to fight off disease and infection. Antibodies are proteins that travel around the body to seek out other proteins called antigens. When both of these proteins join together, the body knows there is an invader that needs to be destroyed.

Scientists can design antibodies that specifically target a certain antigen, such as one found on cancer cells. They can then make many copies of that antibody in the lab. These are known as monoclonal antibodies.

Monoclonal antibodies work in different ways and some are classed as targeted therapies. For more information on monoclonal antibodies that work as targeted therapies, see page 21.

Cytokines

Cytokines are proteins or chemicals in our body that control the activity and growth of immune system cells. There are two main cytokines in the body:

- Interleukin works by stimulating anti-cancer T cells
- Interferon works by helping the immune system slow the growth of cancer

Scientists are now able to make these proteins in a lab.

Cancer vaccines

Most of us know about vaccines given to healthy people to help prevent infections, such as measles. They are made from weakened or harmless versions of the disease they are protecting us from.

When you have the vaccine, the immune system makes antibodies that can recognise and attack the harmless versions of the disease. Once the body has made these antibodies it can recognise the disease if you come into contact with it again. So you're protected from it.

Research in the area of cancer vaccines is at an early stage. Scientists are trying to find out if cancer vaccines can help the immune system to recognise cancer cells as abnormal and destroy them.

Adoptive cell transfer

This type of immunotherapy is still in the early stages of development. One type of adoptive cell transfer is CAR T-cell therapy. The aim of adoptive cell transfer is to improve your immune system by:

- Removing immune system cells from your body
- Genetically modifying those cells in a lab so they can better fight off cancer
- Reintroducing these cells back into the patient using a drip

How is immunotherapy given?

Most immunotherapies are given intravenously (through a vein). For more information, see page 50. They can also be given as a tablet or an injection. Sometimes two immunotherapies are given together. Immunotherapies can also be given with targeted therapies or chemotherapy.

Immunotherapy is usually given in a course of treatments. This course can last weeks, months or years. For more information, see page 38.

For more information on where you will have your immunotherapy, see page 57.

Find out more



If you know the name of the immunotherapy you are looking for, visit the Health Product Regulatory Authority's website at www.hpra.ie where you will find more information about:

- What the drug is
- How it is given
- Possible side-effects

New developments



New immunotherapies are being developed all the time and existing therapies are being used in new ways. You may also be given an immunotherapy as part of a clinical trial (see page 41). Ask your doctor if there are any immunotherapies available to treat your cancer or if there are any trials that are suitable for you.

What are the side-effects of immunotherapy drugs?

The side-effects of immunotherapies depend on the drugs being used and vary from person to person. Because immunotherapy acts on the immune system, it can cause inflammation in any part of your body. Your doctor and nurse will explain your treatment to you in more detail and tell you about any likely side-effects. It is very important to treat any side-effects from immunotherapy as soon as possible. Even vague symptoms like fatigue can be a warning sign for hormone problems. (See page 77 for more information.) Always tell your doctor or nurse straight away if you don't feel well or if you are having any symptoms that are troubling you.

It is also very important to talk to your cancer doctor before taking steroids or antibiotics. They can interfere with the way immunotherapy works.


For more information on common side-effects of immunotherapy, see our side-effects section on page 67. Ask your doctor or nurse to tick the side-effects listed on page 71 that may apply to you.



Before treatment – what you need to know

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Before treatment – what you need to know

- 
- It's important that you fully understand the drug or drugs you are being given, including the benefits and risks.
 - Don't be afraid to ask your doctor or specialist nurse for more information about any drugs you are taking.
 - Chemotherapy, targeted therapies and immunotherapies are usually given in a course of treatments. This course can last weeks, months or years.
 - You will have tests before and during treatment to make sure that you are fit for treatment and to see how the cancer is responding to the drugs.

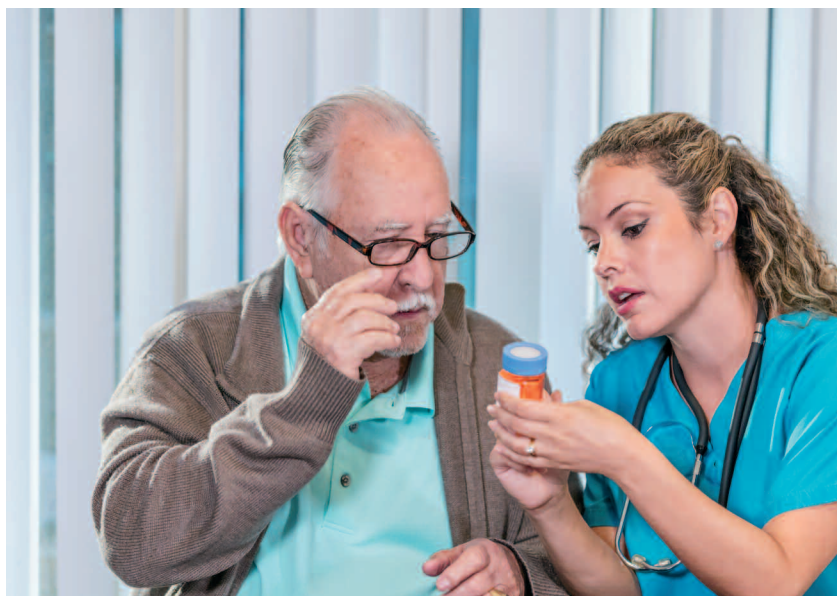
How does the doctor plan my treatment?

When planning your treatment, your doctor will take into account:

- The type of cancer you have
- Where it is in your body
- If it has spread or not
- Your age
- Your general health and fitness

Some drugs affect your body more than others. As a result, your doctor must judge if you are well enough to cope with any side-effects of the treatment before it starts. How often you have treatment, how long it lasts and the dose used can depend on:

- The cancer drugs used
- How the cancer cells respond to the drugs
- Any side-effects from the drugs
- Other cancer treatments you've had



'Have some questions ready about the treatment and how it may affect you physically, emotionally, socially.'

Deciding on treatment

Time to think

When faced with a serious illness, it can be hard to decide what the right treatment is for you. It may feel as if everything is happening too fast. You may feel under pressure to make a decision. You can always ask for more time to decide about the treatment, if you are unsure when it's first explained to you.

Second opinion

You might find it reassuring to have another medical opinion to help you decide about your treatment. Your doctor will refer you to another specialist for a second opinion if you feel this would be helpful. Getting a second opinion will not affect the care you will receive.

Accepting treatment

You have the right to find out what a treatment option means for you, and the right to accept or refuse it. If you want to refuse a particular treatment, let your doctor or nurse know your concerns first. It may help to talk to your GP as well. The important thing is that you are fully aware of the benefits and risks.

Ask your doctor if there are any vaccinations you should have.

Understanding your drug treatment



It's important that you understand your drug treatment. You will be given written information to take home with you, but don't be afraid to ask your doctor or specialist nurse for more information. For example, what the drugs are for, any possible side-effects and if you need to do anything to prepare for treatment. For example, getting dental work done or having any recommended vaccinations.

See page 123 for a list of questions people often want to ask. There is also space for you to write down your own questions. Don't be afraid to repeat a question if you don't understand the answer. You can also speak to our cancer nurses by calling our Cancer Nurseline on 1800 200 700.

Giving consent for treatment

Before you start any treatment, you should be asked to sign a consent form saying that you understand what the treatment is for and that you give permission for treatment to be given. Before treatment, you should have been given full information about:

- What the treatment is for
- The type and amount of treatment you will have
- The benefits and risks of the treatment
- Possible side-effects
- Any other treatments that may be available
- Any suitable clinical trial. For more information on clinical trials, see page 41

If you are confused about the information given to you, let your doctor or nurse know straight away. They can explain it to you again. Some treatments can be hard to understand and may need to be explained more than once. You can still change your mind after you have started treatment. Talk to your doctor or nurse if you have any worries about your treatment plan.

Cycles and courses of treatment

Your course of drug treatment can last weeks, months or years.

A course is made up of cycles. A cycle is the day or days of your treatment, and may be followed by a rest period, when you have no treatment and your body is recovering. Some treatments are continuous. Your cancer doctor will explain the number of cycles you need to treat the cancer. It will depend on your type of cancer and the drug or drugs you are receiving.

What tests will I need before and during treatment?

Some of the following tests may be done before or during treatment:

Weight and height

Your weight and height may be checked before you start your treatment. This is so your doctor can work out the right dose for you. However, many targeted therapies and immunotherapies are given as a set dose for everyone.

Blood or urine tests

Before treatment, you may have tests on your blood or cancer to check if your cancer has a specific protein or gene. Before each cycle of treatment, you will have blood tests to check your red blood cell, white blood cell and platelet count, your kidney and liver function and possibly your hormone function. These blood tests can show if you are fit for treatment and see how your body is responding to the drugs. You may have to wait for the results of the blood tests before treatment can begin. Sometimes urine tests will be done to see the effect of a cancer drug on your body. Your urine may be collected for 24 hours.

Physical exam

This will be done before each cycle of treatment.

Top tip

To help pass the time in hospital, either waiting for tests or treatment, it can help to bring a book, newspaper, magazine, crosswords, music or an iPad.

X-rays and scans

Sometimes you may need X-rays and scans. These are to check that you are fit for treatment and to see how the tumour is responding to treatment.

Heart monitoring

Some drugs can affect your heart so you may need a recording of your heartbeat (ECG) or heart ultrasound (echo). Sometimes a multigated acquisition (MUGA) scan might be done to check if your heart is pumping blood properly.

Lung function tests

Some drugs can affect your lungs, so they will be checked regularly.

Other tests

Some drugs may affect other parts of your body so you may need other tests. Your cancer doctor or specialist nurse will talk to you about any tests, scans or check-ups you need before your treatment begins.

What are biological and biosimilar medicines?

Targeted therapies and immunotherapies are sometimes called biological medicines. This means that they have an active substance that is produced from a biological source, such as living cells.

A **biosimilar medicine** is a biological medicine that is very similar to an original biological medicine. If you are getting a biosimilar medicine, be assured that it is just as safe and effective as the original biological medicine. For more information, visit the website of the Health Products Regulatory Authority at www.hpra.ie and enter 'Biosimilar medicines' into the search box.

Clinical trials

Clinical trials are research studies that try to find new or better ways of treating or diagnosing cancer or reducing side-effects.

Patients with cancer are sometimes asked to take part in a clinical trial. This means that instead of the standard treatment you get a new trial drug. Or you may be given existing treatments used in different ways. For example, giving a different dose of a drug or using two treatments together.

Drugs that are used in a clinical trial have been through years of testing before they are given to patients. However, because the drugs are still in trial, patients taking part will be monitored even more closely than normal and may have extra tests and appointments.

More information

For more information, read our factsheet *Cancer and Clinical Trials*. It's available to read or download on our website, www.cancer.ie. You can also get a free copy by calling our Cancer Nurseline on 1800 200 700 or by dropping into a Daffodil Centre.

You can see a list of current cancer trials at www.cancertrials.ie. It's best to talk to your doctor if you're interested in taking part in a clinical trial.

'There are huge advances in treatment ... A new drug or a clinical trial may totally change things for you. I am alive because of one such drug.'

Waiting for treatment to start

Planning cancer treatment takes time. Most people want to start treatment right away. You may worry that the cancer will spread during this time. Cancer treatment should start soon after diagnosis. But for most cancers, waiting for scans or treatment for a few weeks does not usually affect how well the treatment works. It's really important that your doctors know as much about your cancer as possible before you start treatment.

If you are worried, talk to your doctor. You can also call our Cancer Nurseline on 1800 200 700 or visit a Daffodil Centre to speak to a cancer nurse.

You might also like to make some lifestyle changes while you're waiting for treatment. This can help you prepare for treatment and feel more in control. For more information see page 44.

How will I know if my drug treatment is working?

After a few cycles of treatment, your doctor may arrange some tests and exams. These tests will show if the cancer has shrunk or disappeared. They may include blood tests, X-rays and scans. If you are getting a cancer drug as a palliative treatment, the relief of your cancer symptoms may tell you if the treatment has worked.

Ask your doctor about your test results and what they show about your progress. Your doctor will also ask how well you feel. Tests and exams can tell a lot about how cancer drugs are working, but side-effects tell very little. You cannot tell if a cancer drug is working based on its side-effects. Sometimes people think that if they have no side-effects, the drugs are not working. Or if they do have side-effects, the drugs are working well. But side-effects can vary so much between people and between drugs that they are not a reliable sign of the treatment working or not.

Changes in your treatment plan

Sometimes, depending on the results of the tests, your doctor may need to change the drugs or the dose you are receiving. It may be because the drugs are not shrinking the cancer enough. In other cases, it can be because the drugs are starting to cause damage to particular parts of your body, such as your bone marrow, kidneys, liver or the nerves in your hands and feet. Your doctor will discuss with you any changes in your treatment plan.



'Always talk — if you are ever worried about anything just ask. Everyone is there to help you.'

How can I help myself?

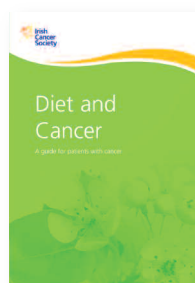
- Making healthy lifestyle changes may help you to cope better with treatment.
- Getting support, talking about your diagnosis and learning how to manage your feelings can make things easier for you.

It can be very difficult to cope with a cancer diagnosis and all the changes that this can bring. Your healthcare team can offer you different types of support, but there are also things you can do yourself to prepare for treatment and feel better.

Lifestyle changes

Eat well

Eating well when you have cancer can help you cope better with the side-effects of treatment and reduce the risk of infection. It can also help your recovery. Ask to talk to the dietitian at the hospital for advice on the best diet for you. You can also read our booklet *Diet and Cancer*. To get a copy, call our Cancer Nurseline on 1800 200 700, visit a Daffodil Centre or download it on our website www.cancer.ie



Be active

Being active has many benefits. It can help to reduce tiredness and some treatment side-effects, and it can also improve your mood and quality of life. Ask your doctor or nurse for advice before starting or increasing the amount of exercise you take. They can advise you on the type and amount of exercise that is safe for you.

Quit smoking

If you are coping with a cancer diagnosis, you may find it stressful to quit smoking. However, research tells us that non-smokers have

fewer side-effects during cancer treatment. Smoking can also reduce how well chemotherapy or radiotherapy works. If you would like advice or support on quitting, call the HSE Quit Team on CallSave 1800 201 203 or Freetext QUIT to 50100.

Alcohol

Cut down on the amount of alcohol you drink. Alcohol can interfere with the way some drugs work so you may need to stop completely. Your doctors and nurses will give you specific advice.

Other ways to help yourself

Gather information about your cancer and treatment

Understanding cancer and its treatment and knowing what to expect can help to relieve anxiety and stress for some people. Make sure you get your information from credible, reliable sources.

Involve your family and close friends

Don't keep your worries or any physical problems secret from the people closest to you. Ask someone close to you to come with you when you are visiting the doctor

Use your support network

Don't be shy about asking for help. Family and friends may not know the best way to help you, so tell them what you need.

Try relaxation and stress management techniques

Therapies like meditation or yoga can help you to cope with stress. Some cancer support centres provide groups to help you learn these techniques.

Accept change in your life

Accept that you may not be able to carry on exactly as before. Give yourself time to adjust to your new routine.

Try to cope day by day

Don't think about the future too much. Concentrate on the present and getting through each day of tests or treatment. That way, you may find it easier to cope with your illness.




How are the drugs given?

Ways of injecting drugs 51

Where do I go for my drug treatment? 57

How are the drugs given?

- 
- Chemotherapy, targeted therapies and immunotherapies can be given in different ways.
 - The 2 most common ways are directly into a vein or by mouth.
 - Drugs can also be injected into a muscle or under your skin, injected into an artery or the fluid around your spine, injected into a cavity such as your bladder, or put as a cream on your skin.
 - Most people have their treatment in a day hospital or clinic. Some people can have their treatment at home. Some may have to stay in hospital for their treatment.

There are many ways to give cancer drugs. The two most common ways are:

Intravenously: Injected into a vein or by drip infusion. See page 50.

By mouth (orally): As capsules or tablets. See page 61.

Less common ways are:

Intramuscularly: Injected into a muscle in your thigh or buttock.

Subcutaneously: Injected under your skin.

Intra-arterially: Injected into an artery.

Intrathecally: Injected into the fluid around your spinal cord. In some conditions, such as leukaemia or lymphoma, cancer cells can pass into the fluid that surrounds your brain and spinal cord.

Intracavity: Injected into a body cavity, for example, your bladder. The drug is flushed in through a tube and may be drained out again some time later.

Intralesional: Injected directly into a tumour.

Topically: As creams put on your skin. These creams are mainly used for some types of skin cancer and applied regularly for a few weeks. They are usually covered with a dressing.

Combination therapies

Sometimes two or more ways may be used together. For example, your treatment may involve three different drugs – two of them could be given by injection and the third one as a tablet. Do ask your doctor or nurse if you would like more information about the ways of giving drugs.

Intravenous therapy (IV)

Cancer drugs are usually given by injection into a vein using a syringe or through an infusion:

- **By injection** – the drugs are injected into a drip. It can last from a few minutes to 20 minutes.
- **By infusion (drip)** – drugs are diluted in a large bag of liquid and go in slowly. This can take minutes or several hours.
- **Continuous infusion by drip or pump** – at home you may receive a very slow release of a drug over 1–7 days. The amount of drug given is controlled by a pump which is small enough to sit in a pouch attached to your body.



Ways of injecting drugs

Cancer drugs can be given directly into a vein using the following devices:

Cannula – a short, thin tube is put into a vein in your arm or the back of your hand.

Central line – a thin, flexible tube is put in through the skin of your chest or neck and into a vein in your chest.

PICC line (peripherally inserted central catheter) – a thin, flexible tube is put into a vein in your arm and then put in (threaded through) to a vein in your chest.

Implantable port (sometimes called a portacath) – a thin, soft, plastic tube is put into a vein. It has an opening (port) under the skin on your chest.

Cannula

The cannula is put into a vein in the back of your hand or arm and secured with a clear dressing. It is normally removed after your treatment. But if you need to stay in hospital, it may be left in place for a few days.

The drugs can be given through the cannula as an injection or injected into a bag to dilute them.

Your treatment is often given through a pump so that your nurse can control how much of the drug you get over a set period of time.

While the drug is being given, sometimes people may experience some discomfort, pain, swelling, burning or a change in sensation around the cannula area. This may be due to a small leakage of the drug into your tissues. This does not happen often. If it does, let your nurse or doctor know straight away.

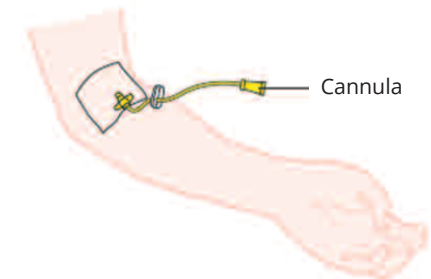
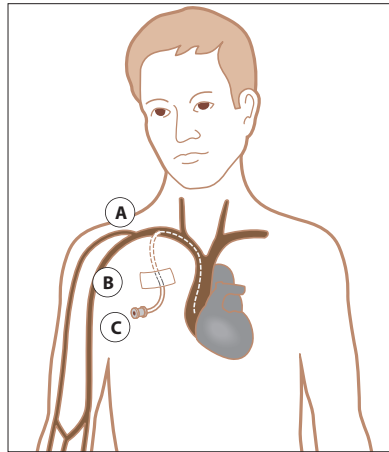


Image courtesy of
Cancer Research UK / Wikimedia Commons

Central line

A central line is a long, thin, hollow tube that is inserted into a vein in your chest. It is sometimes called a skin-tunnelled central venous catheter. A central line may also be called by its brand name. For example, Hickman® or Groshong®.

Your central line will be put in at the hospital by a doctor. You will usually be given a local anaesthetic, but sometimes a general anaesthetic is used. Before the procedure, your neck will be checked for a suitable vein using a small ultrasound machine.



A The central line is placed in a large vein here
B The line is threaded under your skin
C The line reaches the surface of your skin here

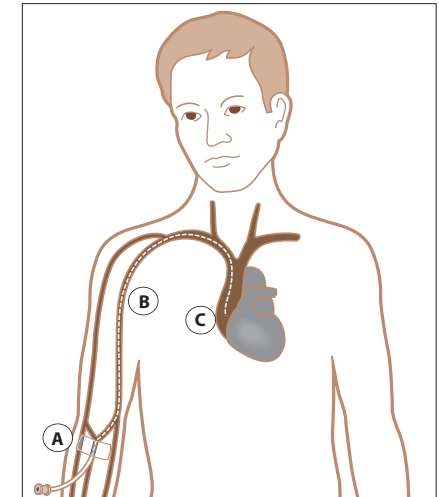
Your doctor will then make a small cut in the skin near your collarbone and gently put (thread) the tip of the line into a large vein just above your heart. The other end of the line is put in (tunnelled) under your skin to reach the exit site. This is where it comes out of your body. You will have a chest X-ray afterwards to make sure the line is in the right place.

Around the central line, you will feel a small 'cuff' just under the skin. The tissue under your skin will grow around this cuff in about three weeks and hold the line safely in place. Until this happens, you will have a stitch holding the line in place.

PICC line

A PICC (peripherally inserted central venous catheter) line is a long, thin, hollow tube that your doctor puts into a vein near the bend in your elbow. You will be given a local anaesthetic to numb the area before the line is put in.

The doctor or specialist nurse gently threads the line along the vein until the tip sits in a large vein in your chest. The end of the line comes out just below the crook of your elbow. Once it is in place, the PICC line is taped firmly to your arm to prevent it being pulled out of the vein.



A The PICC line is inserted in a vein here
B The line is threaded under your skin
C The tip of the line sits in a large vein in your chest here

Implantable ports (portacaths)

An implantable port is a thin, soft plastic tube with a rubber disc (port) at the end. It can be put in under a general or local anaesthetic. The tube is inserted into a vein until its tip sits just above your heart and the port lies under the skin on your upper chest. You cannot see the port as it is underneath your skin, but you will be able to feel it like a small bump.

A special needle called a Huber needle is put into the port in the hospital to allow the drugs to be given through the port. Blood can also be taken from the vein through the port. The implantable port can be used for as long as is needed.

Caring for your line or implantable port

Generally the nurses in the hospital will arrange for a nurse in the community or your local hospital to dress and flush your line. Sometimes a patient or relative may be shown how to care for the line.

Possible problems with your line or implantable port

Most people won't have any serious problems with their line or port, but possible problems can include blockage and infection. Your nurse will tell you what to look out for. Contact the hospital for advice straight away if you have:

- Soreness, redness or darkening of the skin around the line or port
- Fluid leaking from the skin around the line or port
- Swelling of your arm, chest, neck or shoulder
- Pain in your chest, arm or neck
- A high temperature. Most hospitals say that a temperature above 38°C (100.4°F) is high, but some use a lower or higher temperature. The cancer doctors and nurses at your hospital will advise you.

You should also contact the hospital if you are feeling shivery or unwell after your line or port has been flushed.

Talk to your doctor or nurse about the different ways of getting intravenous treatment. They will explain the different options to you. Remember the type of line you are given can depend on the drugs that are used, their doses and the length of time you are expected to be on treatment. A line might also be put in if your medical team feels that your veins will not tolerate the drug.

Hints and tips: Caring for your line or implantable port



- Keep the site clean and dry.
- Be careful when removing your clothes, so the line does not get caught.
- When showering or bathing, place a shower sleeve or clingfilm over the site. Your nurse will discuss this with you.
- Avoid swimming, as it may cause infection.
- Do not lift heavy objects with the arm containing your PICC line.
- Wear loose-fitting tops or shirts for easy access.
- Avoid sports like tennis, badminton or hurling, as they might dislodge the line.
- Do not pull or tug on the tubing.
- If you are worried that your site is showing signs of infection or clotting, contact the day unit immediately.
- If your line falls out, place a clean dressing over the site.
- If the wound bleeds, apply pressure with a clean dressing.
- If the line falls out at home, do not throw it away but bring it to the hospital.

Continuous infusion

Continuous infusion is when you receive a controlled amount of a drug through a special pump. Pumps are often attached to catheters or ports. They can control how much and how quickly the drug goes into a catheter or port. An external pump remains outside your body and you can carry it around with you. Usually it is small enough to fit in a pocket.

Over a period of time the pump slowly releases the drug into your bloodstream. The length of time you wear the pump will vary and your doctor or nurse will explain this to you. The pump can be attached to either a central line or a PICC line.

The hospital's pharmacy staff usually prepare the drugs, and you, or a family member or friend, will be taught how to use and look after the pump. Pumps work in different ways. Your nurse will give you full instructions on how to care for your pump. If you need advice when at home, contact the day unit at the hospital.

If you notice any leakage of the drug from the pump or the tube, let the nurse at the hospital know immediately.

Leakage of drugs (extravasation)

Extravasation occurs when drugs leak into the tissues around the vein when they are being given. It is uncommon but can occur if your cannula dislodges from the vein. It rarely ever occurs with a central line. Do tell your nurse if you notice any pain, swelling or redness at the cannula site during your treatment. Leakage can be successfully treated if noticed early.

Tablets or capsules

Taking tablets or capsules at home may also be part of your treatment. They may be all the treatment you need or you may have intravenous drugs as well. For more information on taking tablets at home, see page 61.

Where do I go for my drug treatment?

Where you go for treatment depends on the drugs you are prescribed and the way they are given. Some intravenous drugs are given during visits to a day hospital or clinic, without needing to stay overnight. Usually it can take anything from half an hour to a few hours. Sometimes you may need to stay overnight or for a few days. Some people may be able to have their treatment at home.

Before your treatment starts, your doctor or nurse will explain exactly what it will involve. Do ask as many questions about your treatment as possible. Write down new questions as you think of them. Use the fill-in pages at the back of this booklet to help you. You can also call our Cancer Nurseline on Freephone 1800 200 700 or visit a Daffodil Centre for information and advice.





Treatment by mouth (oral therapies)

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Before you start oral therapies at home	62
When you are at home	63

Treatment by mouth (oral therapies)

- Some chemotherapy drugs, targeted therapies and immunotherapies are taken by mouth as a tablet or capsule. These are known as oral therapies.
- Oral therapies are just as effective as intravenous drugs.
- It is very important to take your tablets exactly as prescribed. Taking less or more of the prescribed dose could be dangerous and will affect how well your treatment works.

What are oral therapies?

Some chemotherapy drugs, targeted therapies and immunotherapies are taken by mouth as a tablet or capsule. These are known as oral therapies.

After you take the drug by mouth, it is absorbed into your blood stream and carried around your body just like intravenous drugs. Oral therapies are just as effective as intravenous drugs.

In general, you will get your drugs from your local pharmacy. Sometimes they are prepared in the hospital pharmacy.

The following healthcare professionals can help you when you are taking your oral therapies:

- Clinical nurse manager
- Oncology / haematology liaison nurse
- Pharmacist
- Oncologist / haematologist
- Our cancer nurses. Call our Cancer Nurseline 1800 200 700 or visit a Daffodil Centre

Before you start oral therapies at home

Your oncologist / haematologist or a member of your medical team will prescribe the medication. You and a family member or carer will attend an oral therapy information session. You will also be provided with written information.

Your doctor or nurse will explain:

- When to take the tablets or capsules
- How often to take them
- Whether to take them with food or not
- How to handle the tablets
- How to store them, for example, in a fridge or cool place
- What to do if you forget to take your tablets

You may find a patient diary useful to help you keep track of your medication. It is also important to keep track of any side-effects. See page 69 for an example of how you can do this. This will also help you to remember what to tell the doctor or nurse when you are in the hospital.



When you are at home

When taking chemotherapy and other oral therapies, they should never be touched with bare hands as they may cause skin irritation. Place them in a spoon or small cup instead. Wash your hands afterwards. If someone is helping you, make sure they wear gloves. Store the tablets in a safe place and keep them away from children.

If you cannot take your tablets for any reason or if you are sick soon afterwards, contact your doctor or nurse immediately for advice. If you forget to take your tablets, don't take a double dose the next day.

The drug prescription given to you by your doctor will be for a full course of treatment. For this reason, you must take them **exactly** as prescribed. If you need more supplies, talk to your hospital doctor, who can contact your local pharmacy.

Hints and tips: Taking cancer drugs at home


- Avoid direct contact with the drugs.
- Wear gloves when handling clothing or bedsheets soiled with vomit or diarrhoea.
- Check with your pharmacist or nurse on how the tablets or capsules should be stored.
- Store all drugs out of reach of children to prevent serious harm if taken by accident.
- If another person or child takes your tablets by mistake, contact a doctor straight away.
- If you feel sick or unwell at any time, phone the nurse or doctor at the hospital for advice.
- Return any unused drugs in their original containers to the pharmacy where you got them. Do not flush them down the toilet or put them in the general waste bin.



Side-effects

Serious and life-threatening side-effects	68
Keeping a note of your side-effects	69
Side-effects (listed in alphabetical order)	71

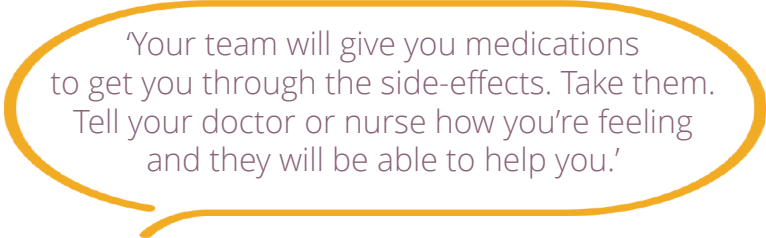
Side-effects

- 
- Many side-effects are inconvenient or upsetting but are not harmful to your health.
 - Discuss your side-effects with your doctor or nurse – often they can be reduced.
 - Some side-effects are serious medical conditions that need to be treated.
 - Phone the hospital and speak to your doctor or nurse urgently if you are worried about a side-effect.
 - If you don't get side-effects, it doesn't mean that your treatment isn't working.

This section describes some common side-effects of drugs to treat cancer, and some ways you may be able to manage them.

No one will have all these effects, but some people may have more than one. There may be some side-effects not mentioned here. This section is best read with information about the type of cancer you have.

Everyone's experience of cancer and its treatment is different. Your doctor and specialist nurse will discuss with you in detail your treatment and its possible side-effects. Always tell your doctor or nurse about any side-effects you have. Your doctor can give you medicine to help control some side-effects. After your treatment is over, most side-effects start to improve.



'Your team will give you medications to get you through the side-effects. Take them. Tell your doctor or nurse how you're feeling and they will be able to help you.'

Serious and life-threatening side-effects

Some cancer treatments can cause severe side-effects. Rarely, these may be life-threatening. Your cancer doctor or nurse can explain the risk of these side-effects to you. They will also give you telephone numbers for the hospital. If you feel unwell or need advice, you can call them at any time of the day or night. Save these numbers in your phone or keep them somewhere safe.

Top tip

The side-effects we describe in this section are listed on page 71 in alphabetical order. Ask your doctor or nurse to tick the side-effects that may apply to you.



Keeping a note of your side-effects

You may find it helpful to keep a record of some side effects. This can help you talk to your doctors and nurses, and find the best way to manage them. Ask your doctor or nurse about ways to keep track of your symptoms, like a diary or phone app.

Here is an example of how you might describe a side-effect:

1 Where is the side-effect? What does it feel like?

It is in my fingers and toes. They feel tingly and numb, like pins and needles. Sometimes I have a burning feeling.

2 How long have you had it? How often do you notice it?

It started 4 days ago. It comes and goes but it is getting worse.

3 How bad is it? (0 is very mild, 10 is severe)

3 most of time. 7 when it gets bad.

4 How is it making you feel?

Uncomfortable, irritated and frustrated.

5. Is there anything that helps?

Keeping my hands and feet warm. Doing some gentle exercises.



Side-effects

Ask your nurse or doctor to tick the side-effects that may affect you

Anaemia	<input type="checkbox"/>	72
Anxiety and depression	<input type="checkbox"/>	72
Appetite loss	<input type="checkbox"/>	73
Bleeding and bruising (thrombocytopenia)	<input type="checkbox"/>	74
Blood clots	<input type="checkbox"/>	75
Constipation	<input type="checkbox"/>	75
Diarrhoea	<input type="checkbox"/>	76
Endocrine (hormone) problems	<input type="checkbox"/>	77
Fatigue	<input type="checkbox"/>	77
Fertility issues	<input type="checkbox"/>	79
Hair loss (alopecia)	<input type="checkbox"/>	84
High blood pressure	<input type="checkbox"/>	87
Infection	<input type="checkbox"/>	87
Joint or muscle pains	<input type="checkbox"/>	88
Kidney and bladder problems	<input type="checkbox"/>	89
Memory problems and confusion	<input type="checkbox"/>	89
Mouth, throat and taste problems	<input type="checkbox"/>	90
Nausea and vomiting	<input type="checkbox"/>	92
Nerve changes (peripheral neuropathy)	<input type="checkbox"/>	92
Sex life	<input type="checkbox"/>	93
Skin and nail changes	<input type="checkbox"/>	96

Anaemia

Some cancer drugs can cause the bone marrow to make fewer red blood cells (less haemoglobin). Fewer red blood cells is called anaemia. Red blood cells are needed to carry oxygen around your body. With anaemia, your heart must work harder to get enough oxygen. Anaemia can make you feel:

- Tired and weak
- Short of breath
- Dizzy, faint or lightheaded
- Sore in your muscles and joints

Tell your doctor if you feel like this. Regular blood tests to measure your red cell count will be done during treatment. If you are very anaemic, you may need a drip to give you extra red blood cells. This is called a blood transfusion.

Your doctor might give you a drug called erythropoietin to help your bone marrow make more red blood cells quickly. It is given as an injection in your thigh or abdomen. Sometimes your doctor and dietitian may give you advice about taking iron or vitamins.

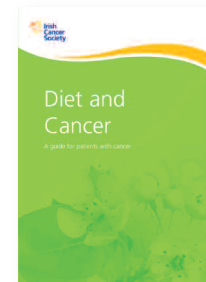
Once your treatment is over, the tiredness (fatigue) will ease off gradually. However, some people still feel tired for a year or more after treatment. For more information on fatigue, see page 101.

Anxiety and depression

Some people can feel restless, anxious or develop insomnia and depression due to cancer drugs. Your doctor may prescribe medication to help or advise counselling and relaxation. For more information, see page 111.

Appetite loss

Cancer drugs can affect your appetite and cause changes to your taste. This may happen for a short time while on treatment. It is best to get advice from a dietitian or nurse if this happens. Call our Cancer Nurseline on 1800 200 700 for a free copy of the booklet, *Diet and Cancer: A Guide for Patients with Cancer*.

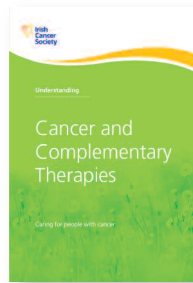


Hints and tips: Loss of appetite

- Tell your doctor if the anti-sickness tablets are not working.
- Eat bland, easy-to-digest foods and drinks, like cream crackers, toast or plain biscuits.
- Eat about 5 or 6 small meals or snacks each day.
- Do not fill your stomach with fluids before eating.
- Take fluids slowly, with small sips. Ice cubes can help too.
- Try ginger and fizzy drinks, as some people find them helpful.
- Do not eat or prepare food if you feel sick.
- Avoid food and drinks with a strong smell, like garlic, onions, fried foods, etc.
- Eat warm or cool foods if you cannot tolerate the smell of hot food.
- Find out when is best for you to eat and drink before treatment. Some people need a light snack, while others need an empty stomach.

Should I eat a special diet?

It is best not to experiment with special diets while on treatment. Many of these diets are restrictive, which means that certain food items must be avoided. Restrictive diets can lead to poor appetite and weight loss, fatigue, and other nutritional deficiencies and may be harmful. If you take large doses of vitamins or minerals, it may affect how the treatment works. Do get advice from your dietitian or nurse or call our Cancer Nurseline on 1800 200 700 for a copy of *Understanding Cancer and Complementary Therapies*.



Bleeding and bruising

Cancer drugs can affect the number of platelets made in your bone marrow. Platelets are needed to help make your blood clot and stop any bleeding if you hurt yourself. With fewer platelets, you may bleed or bruise very easily, get nosebleeds or bleed more heavily than usual from small cuts or grazes or during your periods. A low platelet count is called thrombocytopenia.

Let your doctor or nurse know straight away if you are bruising easily, have unexplained bleeding or notice tiny red spots under your skin, which can look like a rash. During treatment, you will have regular blood tests to count the number of platelets in your blood.

You may need a drip to give you extra platelets. This is called a platelet transfusion.

While on treatment, avoid any injury. For example, use an electric razor when shaving, or when gardening wear thick rubber gloves to protect yourself from cuts and grazes. Check with your doctor or nurse before taking any vitamins, herbs, minerals, dietary supplements, aspirin, or other over-the-counter medicines.

Blood clots

You have a higher risk of developing blood clots if you have cancer. Some cancer drugs can further increase this risk. Blood clots can occur in different parts of your body but mainly in your legs or chest. You may need to take medicine to help prevent a blood clot.

Symptoms include redness, swelling or pain in your leg or breathlessness, or chest pain if it happens in your chest. Let your doctor or nurse know if you have any of these symptoms, as blood clots can be very serious. Usually they are treated with medication to thin your blood.

Constipation

Some cancer drugs may slow down the movement of your bowels. As a result, your regular bowel habit may change. You may find it painful or hard to pass a bowel motion. Or you may feel bloated or have nausea. This is known as constipation.

If this happens, let your doctor or nurse know as soon as possible. You may need to drink more clear fluids or take a laxative. In some cases, your doctor may have to adjust your treatment. Getting some exercise can help to move your bowels too. Enemas and suppositories are not recommended if you are having chemotherapy.

Hints and tips: Constipation



- Keep a record of when your bowel opens.
- Eat more fibre, raw fruit, cereals and vegetables.
- Drink plenty of fluids. Prune juice and warm drinks can often help.
- Be as active as you can. Take gentle exercise, like walking or yoga, if possible.

Diarrhoea

Some drugs can harm the cells that line your bowels and cause diarrhoea. Diarrhoea is passing bowel motions that are soft, loose or watery more than three times a day. You may also get some cramping or abdominal pain. Diarrhoea can also be caused by infections, long-term constipation or drugs used to treat constipation.

If you have diarrhoea, drink lots of clear fluids to replace the fluid you are losing. Do tell your doctor or nurse if you have diarrhoea for more than 24 hours. There are medicines called anti-diarrhoeals that can stop this side-effect of treatment. Talk to your nurse or doctor before taking anti-diarrhoeals.

Hints and tips: Diarrhoea



- Eat small snacks or meals instead of three large meals a day.
- Have a low-fibre diet. Eat less raw fruit, cereals and vegetables.
- Avoid milk, alcohol or very hot or cold drinks.
- Avoid spicy or fried foods.
- Drink plenty of clear fluids (1½ to 2 litres a day).
- If you have severe diarrhoea, you may become dehydrated and need to be admitted to hospital for intravenous fluids.

If you are having immunotherapy, diarrhoea could be a sign that your bowel (colon) is inflamed. Tell your doctor or nurse if you are passing bowel motions more often or if they are soft, loose or watery.

Endocrine (hormone) problems

Immunotherapy drugs can make some hormone glands inflamed and affect the amount of hormones they produce. Glands that may be affected include the thyroid gland, pituitary gland and adrenal gland. Usually a blood test will find changes in your hormone levels before you start to have symptoms.

Tell your doctor if you have any of the following:

- Headaches that do not go away
- Extreme tiredness or sleepiness
- Feeling cold
- Weight gain
- Feeling dizzy or faint
- Changes in behaviour or mood.

These side-effects may continue after you have finished treatment.

Fatigue

Fatigue is a very common problem with cancer treatment. This is where you feel tired and weak and rest does not seem to help. It is quite normal and may be caused by the drugs themselves or by your body fighting the disease. Sometimes the tiredness can be mild or extreme. Try to get plenty of rest and accept help when offered. The tiredness will ease off gradually once the treatment is over. However, some people can still feel tired for a year or more afterwards.

If you are receiving immunotherapy, fatigue may be a sign that there is a problem with your hormone levels. It's important to tell your doctor or nurse if you feel tired all the time.

Remember that fatigue can be caused not only by your treatment but also anaemia, lack of sleep, having to make regular visits to the doctor or stress, anxiety and depression. If you normally have plenty of energy, you may find it hard and frustrating if you feel tired all the time.

Do talk to your doctor if fatigue is a problem for you or if you have difficulty sleeping. A useful booklet called *Coping with Fatigue* is available from the Irish Cancer Society. Call our Cancer Nurseline on 1800 200 700 for a free copy.

Hints and tips: Fatigue



- Plan time to rest each day. Make sure to build short naps into your day. However, try not to sleep for a long time during the day. This can make fatigue worse.
- Try not to get overtired.
- Have a bedtime routine: quiet time or listening to relaxing music, taking a milky drink, going to bed at the same time each night.
- Ask for and accept help from others with housework, shopping, cooking, childcare or at work.
- Take light exercise, such as walking or yoga, to help you get a good night's sleep.
- Some relaxation therapies can help: visualisation, yoga, meditation.
- Keep your energy for the things you like to do most. Have a nap or short rest before you go out somewhere special.

'You have to listen to your body. Nap if you need to and take things at your own pace. I find exercise great.'

Fertility issues for women

Some cancer drugs can affect your fertility. This effect may last a short while or for the rest of your life. Your chances of infertility depend on:

- Your age – how near you are to the menopause
- The type of cancer you have
- The type of cancer drug given
- Any other treatments used – radiotherapy, hormone therapy
- If you have any other health problems

Before treatment starts, talk to your cancer specialist about your chances of becoming infertile and your options. Bring your partner, so they can ask questions too. These days, many cancer treatments are less likely to affect fertility. Many couples have had healthy babies after treatment for cancer.



Will I be able to get pregnant?

Some drugs used to treat cancer can damage your ovaries. As a result, the number of healthy eggs and hormones can be affected. If this happens, you may have difficulty getting pregnant after treatment and in some cases it may be impossible. If there is any chance you could be pregnant before starting treatment, let your doctor know.

- **Short-term infertility:** Your periods may become irregular or stop during treatment or for a few months afterwards. This does not mean you are permanently infertile. You may get hot flushes, a dry vagina or other symptoms of the menopause. But after a few months your periods may return to normal. This happens in about a third of women. The younger you are, the more likely your periods will return to normal and you can get pregnant naturally.
- **Menopause:** The nearer you are to the menopause, the more likely your periods will stop permanently. This means that your chances of having a child in the future are significantly reduced. Usually it is not possible to stop this happening. But your doctor may prescribe hormone replacement therapy (HRT) to reduce the effects of the menopause, like hot flushes and a dry vagina. HRT replaces the hormones normally made in your ovaries.
- **Avoiding pregnancy:** You may not know if you are fertile or not, as your periods may stop during treatment. But it is still possible for you to become pregnant during treatment. Side-effects of treatment like vomiting and diarrhoea can make the contraceptive pill work less well. For this reason, you must use a reliable method of contraception throughout your treatment and for some time afterwards. You should not get pregnant, as the drugs can harm your baby, especially in the first 3 months of pregnancy. There can also be a risk of miscarriage.

- **Checking fertility after treatment:** Once treatment is over, there are tests that can check if you are fertile or not. For women, a blood test can tell how well your ovaries are working and for men, your sperm can be tested. Talk to your doctor or nurse who can organise these tests for you. They may also refer you to a fertility specialist.
- **Getting pregnant after treatment:** Generally, doctors believe it is better not to get pregnant for at least 2 years after your treatment ends. This gives you a chance to recover from the effects of treatment. And by this time the likelihood of the disease coming back is much less. But do talk to your cancer specialist about your individual circumstances and what they recommend.
- **Support:** It may help to talk to a family member or close friend about your fertility concerns. Ask your doctor or nurse for advice on what to do.

For most women, it is better not to get pregnant for at least 2 years after your treatment ends.

Freezing your eggs

If there is a risk that your treatment will cause permanent infertility, ask your doctor or nurse about the option of freezing your eggs (oocytes) before treatment begins. You can also call our Cancer Nurseline on 1800 200 700. Your GP can give you advice as well.

Fertility issues for men

Many men father healthy babies after treatment for cancer. But some types of cancer and cancer treatment may affect your fertility by lowering your sperm count. Sometimes these effects are short-term and sperm production can recover. In other cases, the effects may be permanent.

In general, doctors recommend that you have a sperm test at least 6 months after treatment to check your fertility. But your cancer doctor will give you advice for your individual circumstances. It is important to talk to your doctor about sperm banking.

Avoiding pregnancy

Your cancer treatment can damage the sperm that you are currently producing and cause birth defects. It is important to use a barrier method of contraception, like condoms, throughout your treatment and for some time afterwards. Ask your doctor or nurse how long you should continue using condoms.

Support

It may help to talk to a family member or close friend about your fertility concerns. Ask your doctor or nurse for advice on what to do.

You and your partner must avoid pregnancy during treatment and for some time afterwards. This is because the drugs may damage your sperm and cause birth defects.

Sperm banking

If you are producing sperm, even in low numbers, it may be possible for you to have a sample frozen and stored. If you would like to find out more about sperm banking, talk to your doctor or nurse. You can also call the Cancer Nurseline on 1800 200 700 for advice in confidence.

Coping with infertility



It is not easy to hear that your fertility may be affected as a result of cancer. The sense of loss can be painful, no matter what age you are. Your reaction can vary from acceptance to shock, sadness and silence to anger and depression. There is also no set time to have these reactions.

Support

It can take a while to talk about your feelings and emotions. When you are ready, you may find it helpful to talk openly to your partner, your family or a friend about these feelings. If they understand how you feel, it is often easier for them to offer help and support. It is important too to talk to your doctor or nurse. They may arrange for you to speak to a trained counsellor or a specialist to help you deal with any strong emotions that you may have.

Cancer Nurseline Freephone 1800 200 700

Hair loss

Chemotherapy and other cancer drugs can cause hair thinning or hair loss (alopecia). This is when all or some of your hair falls out. It can happen anywhere on your body: your head, face, eyelashes and eyebrows, arms, underarm, legs, and pubic area. How much hair falls out depends on the drug given, the amount and your own reaction to it. Before treatment your doctor and nurse will tell you if you are likely to have any hair loss due to treatment.

- **When?** If you lose your hair, it usually starts within 2 or 3 weeks of treatment. Before your hair starts to fall out, you may get tingling or your scalp may feel very sensitive. This is normal and may last a day or so.
- **Will it come back?** Your hair will start to grow again once treatment stops. It may take a few months. When it regrows, it may not feel the same as before. It might have changed colour, texture or style. It might be darker or lighter in colour, thinner or become straight or curly.
- **Any treatments?** In general you cannot prevent hair loss entirely. Depending on your cancer drug, it may be possible to reduce or delay hair loss by using a 'cold cap'. This is also known as scalp cooling. The treatment reduces blood flowing to your scalp for a short period so less of the drug reaches the scalp. While it can reduce the risk of hair loss, it does not always prevent it. The cold cap only blocks the action of certain drugs as well. It is also not suitable for all patients and not all hospitals offer this kind of treatment. Ask your doctor or nurse if it would be useful for you.
- **Ways to cope?** It is natural to feel upset at the thought of losing your hair. Don't be afraid to talk to your nurse or medical social worker about your feelings. They will help you find ways to cope with your hair loss. Also, talk to your family and friends as they can give you support too. If you have children, it is best that you prepare your children for your hair loss before it happens. Your medical social worker can give you advice on what to say.

- **Wigs?** If you like, you can get a wig or hairpiece when you lose your hair. If you decide to get a wig, it is better to organise it before your hair falls out. That way you will get a better match to your own hair colour and style. Your medical social worker or nurse can advise you about getting a wig. If your hospital does not have a medical social worker, ask if they have the name of a wig fitter that you could visit. In some cases it is possible to get financial assistance towards the cost of a wig or hairpiece. If you have a medical card, you will be entitled to an allowance towards the cost of your wig or hairpiece. The amount you can claim will depend on the Health Service Executive (HSE) area in which you live. If you have private health insurance, you may be covered for the cost of a wig too.
- **Other headwear?** You may like to wear a hat, bandana or scarf instead when you go out. There are also turbans which can be worn in the house. For more information and advice, call the Cancer Nurseline on 1800 200 700 or visit www.cancer.ie for more information on hair loss and cancer.



Hints and tips: Your hair



- Get your hair cut short before it falls out or shave your head. The weight of long hair can pull it out faster.
- Brush or comb your hair gently with a soft or baby brush.
- Use gentle hair products.
- Dry your hair by patting it with a soft towel.
- Avoid hairsprays, hair dryers, curling tongs and curlers.
- Use a gentle moisturiser on your scalp if it becomes dry or itchy.
- Avoid hair dyes but, if you must, use a very mild vegetable-based colour. Ask your nurse or hairdresser for more advice.
- Do not perm your hair during treatment or for 3 months afterwards.
- Keep your head warm by wearing a hat, turban, scarf or wig.
- Protect your scalp by covering up or by putting suncream on your head when outdoors.
- If you lose your eyelashes, wear glasses or sunglasses to protect your eyes from sun and dust when you are outside.

If you are likely to lose your hair, ask your doctor or nurse about wigs early on, so that the wig will be as close a match to your normal hair as possible.

High blood pressure

Some drug treatments can cause high blood pressure. You will have your blood pressure checked regularly. If you have headaches, nosebleeds or feel dizzy, let your doctor know. They can prescribe tablets to control high blood pressure if necessary.

If you have high blood pressure before you start treatment, your doctor will monitor you closely during treatment.

Infection

Chemotherapy and other drugs make you more likely to get infections. This happens because the drugs can affect the bone marrow where white blood cells are made. These cells help the body fight infection.

If you do not have enough white cells (neutropenia), even a small infection like a cold or a sore throat could make you ill. During each treatment cycle you will have blood tests to make sure you have enough white blood cells. Seven to 14 days after your chemotherapy treatment, your white blood cells are usually at their lowest. But this can vary with the type of drug given.

If you have a high temperature, contact the hospital straight away. Most hospitals say that a temperature above 38°C (100.4°F) is high, but some use a lower or higher temperature. Check with your hospital team about when you should contact them.

You will be asked to watch out for signs of infection at all times, especially if your white cell count is low. These signs include feeling shivery and unwell or running a high temperature, having a cough, pain passing urine, or redness at the drip site. If this happens, contact the hospital straight away, even at night. Some hospitals prefer you to ring the ward directly. Check this with your nurse or doctor before you start treatment. If you have a high temperature or feel unwell, you will need to have a blood test to see if your white cells are low. You may also need antibiotics or other medication in hospital to treat the infection. You may be asked not to take paracetamol or other medicine that will mask an infection while you are on treatment.

You will be more at risk of picking up infections. Try to avoid crowds or close contact (such as hugging or kissing) with people who have colds or flu and other infections, such as chickenpox, shingles or measles. Let your doctor know if you are in contact with these or any other infections and ask about any vaccinations available to protect you.

Wash your hands often during the day, especially before you eat and after going to the toilet. Infection is a serious complication of treatment. It needs to be treated as soon as possible. Talk to your doctor or nurse, who will give you more advice.

Your doctor might also give you drugs called growth factors, sometimes called G-CSF. These are given by injection under the skin (subcutaneously). They will help your bone marrow to make more white blood cells quickly. As a result, they reduce the risk of infection.

Joint or muscle pains

Some drug treatments can cause pain in your muscles, joints or bones. This can include back pain. You may also get weakness or spasms in your muscles.

If this happens, tell your doctor so they can give you give you painkillers. Having warm baths and taking regular rests may help. Tell them if the pain does not get better.

Kidney and bladder problems

Some cancer drugs can damage the cells in your kidneys and bladder. As a result, you may have burning or pain when you empty your bladder, have urgency or frequency, be unable to pass urine, incontinence, or blood in your urine. Some drugs can change the colour of urine as well.

Blood and urine tests will be done regularly to check your kidneys. Fluids can help to flush out the cancer drugs from your kidneys and bladder. Before each treatment, fluids may be given by drip into your vein for several hours. Drink as much as you can – about 1½ litres per day. Avoid, where possible, drinks that contain caffeine. For example, tea, coffee, cola.

Memory problems and confusion

After a few treatment cycles, some patients may have some mental confusion and short-term memory loss. This is sometimes known as 'chemo brain' and can depend on the type of drug(s) given. It can also include a lack of focus and concentration and being unable to organise daily activities.

Let your doctor know if you experience any of these problems. Sometimes they can be helped by relaxation, exercise, steroids or learning techniques to 'retrain' your brain. These activities focus on improving any memory loss and problems with attention, perception, learning and planning (cognitive rehabilitation). Research into new treatments is ongoing.

Mouth, throat and taste problems

Mouth and throat problems due to chemotherapy and other cancer drugs can include a dry mouth, mouth sores and ulcers, or infections of gums, teeth or tongue. Your mouth may be more sensitive to hot or cold food as well. There are many mouthwashes and medications to help, which your doctor can prescribe for you. It helps to clean your teeth often and gently with a soft toothbrush and gentle flossing, especially after meals. You can also use a bland mouthwash of 1 level teaspoon of salt or baking soda (sodium bicarbonate) dissolved in half a litre of warm water. Keep your mouth moist by sipping cool water during the day. If your mouth becomes very sore, there are gels, creams or pastes available to ease the soreness. Talk to your nurse or doctor.

Changes in taste and smell can also happen. Food may not taste like it used to or taste more salty, bitter, or like chalk or metal. Normal taste will come back after your treatment has ended. Make sure to visit your dentist before your treatment starts or ask your doctor or nurse when it is safe to get dental work. Our booklet, *Diet and Cancer: A Guide for Patients with Cancer*, has some helpful advice on how to manage taste changes. Call 1800 200 700 for a copy or visit www.cancer.ie



Hints and tips: Mouth and throat changes

- Clean your teeth and gums or dentures after each meal and at bedtime.
- Brush your teeth with a soft-bristled or child's toothbrush.
- Use a mouthwash regularly if prescribed for you.
- Avoid mouthwashes that have alcohol or toothpaste that stings. Make your own mouthwash with one level teaspoon of baking soda (sodium bicarbonate) or salt dissolved in half a litre of warm water.
- Avoid toothpicks.
- Take crushed ice or pineapple to keep your mouth fresh and moist. With some drugs, you may be advised to avoid ice and cold drinks for a while.
- Use a lip balm to keep your lips moist.
- Drink about 1½ litres (3 pints) of fluid a day. This can be water, weak tea, weak coffee, or soft drinks such as apple juice.
- Avoid citrus drinks like lemon, orange or grapefruit.
- Choose foods that are moist, soft and easy to chew or swallow.
- Add gravies and sauces to your food to make it moist and easy to swallow.
- Eat foods that you enjoy and find easy to eat.
- Avoid foods that can irritate your mouth: alcohol, spices, garlic, onion, vinegar, salty or very sugary foods.
- Use herbs and seasonings to add flavour to your food.
- Marinate your food if you have problems tasting food.
- Do not smoke, as tobacco can irritate your mouth and throat.
- Ask your dietitian for more advice about suitable food and drinks.

Nausea and vomiting

This is a side-effect that can usually be very well controlled. Many people have no sickness at all. Your hospital doctors will usually prescribe anti-sickness (anti-emetic) drugs if sickness is a possible side-effect of your treatment. It's important to take these drugs as they are prescribed. Anti-sickness drugs work better when you take them regularly, or before you start to feel sick. Tell your doctor or nurse if the symptoms do not improve. If one kind of anti-sickness drug does not work for you, your doctor can always prescribe another. Also, you may need more than one type of drug to help with nausea. Talk with your doctor or nurse for more advice about this side-effect. It is especially important for you to talk to your doctor or nurse if your nausea is preventing you from eating or drinking enough.

Low doses of steroids can help to reduce nausea and vomiting too. Given in this way, the steroids will not do any lasting harm. They can make you feel better overall and help with any loss of appetite too.

Nerve changes (peripheral neuropathy)

Some drugs can affect your nerve endings. They may cause numbness or a tingling or burning sensation in your hands and feet. You may have a feeling similar to pins and needles. This is known as peripheral neuropathy. You may have trouble picking up objects or buttoning your clothes.

This side-effect is usually temporary. But it may take several months for the numbness to go away. Tell your doctor or nurse if you have this side-effect, as you may need medication or some changes to your treatment. For more information on peripheral neuropathy, call our Cancer Nurseline on 1800 200 700 or visit www.cancer.ie

Hints and tips: Caring for hands & feet



- Keep your hands and feet as warm as possible.
- Take gentle exercise if possible. Stress balls may help.
- Wear well-fitting shoes with rubber soles to prevent you falling.
- Be careful when handling knives, scissors and other sharp or dangerous objects.
- Be careful when cutting your nails.
- Be careful when using hot water.
- Check the temperature of the bath before stepping in.
- Wear gloves when cooking, cleaning or gardening.
- Keep your skin moisturised and soft.
- Prevent falls. Use a walking stick, walk slowly, use handrails when going upstairs, use non-slip bathmats.

Sex life

Chemotherapy and other cancer drugs may or may not bring changes to your sex life. A lot depends on:

- Your age
- If you have had these problems before
- The type of cancer drug you are getting
- If you have any other illnesses

If you are worried that your treatment will affect your sex life, discuss your concerns with your doctor before treatment. They can tell you about any likely side-effects. While it is usually safe to have sex during treatment, do check with your doctor. If your platelet count is low and there is a risk of bleeding, your doctor may advise you not to have sex until your count is higher.

Do not worry that cancer can be passed on to your partner during sex. This will not happen. But most hospitals advise that males wear condoms to prevent any traces of the drugs passing into semen or vaginal fluids. While the chances of this happening are low, it is better to be safe.

Physical effects

Short-term effects: Tiredness, lack of energy or nausea can sometimes prevent you from having sex. Your desire for sex (libido) may be low too. If you are a man, you might not be able to climax or have an erection. For women, sex may be more uncomfortable due to bladder or vaginal infections, a vaginal discharge or itching.

Long-term effects: For women, some cancer drugs may damage the ovaries. This can bring on early menopause. As a result, you may have dryness of the vagina and less interest in sex. Depending on your type of cancer, your doctor may prescribe hormone replacement therapy (HRT) to help. If sex is painful, a cream or ointment can be prescribed. You can also get creams and vaginal lubricants from your local pharmacy to moisten your vagina.

For some men, cancer drugs can cause changes in hormone levels, reduce blood supply to the penis, or affect the nerves that control the penis. All of these can result in impotence.

Emotional effects

You may also lose your desire for sex if you are feeling stressed, anxious or depressed. You may be worried about surviving cancer, or about your family or your finances. Your emotions may be turned upside down and you may find it hard to relax. It is normal to feel like this. If you have had surgery which has changed your body image, you may feel self-conscious or vulnerable being with your partner.

You may be afraid that your partner – or a new one – will be put off by the changes to your body. You may not want anyone to see or touch your body. It can take some time to get used to your new image.



How long will it last?

Once you get back to your old routine and your energy level improves, your interest in sex should return. But there is no set time for you to be ready to have sex again. It varies from person to person. It may take a while and often depends on how long it takes you to adjust to your illness. Your doctor will give you advice about any long-term effects.

Contraception

Do not presume that you are infertile while on treatment. You must take good contraceptive precautions at this time. If you become pregnant, the drugs can harm your baby. To prevent this or any possible problems for your partner, your doctor may tell you to use a reliable method of contraception throughout your treatment. Barrier methods like condoms or the cap are usually best. You should continue this for a few months afterwards. Talk to your nurse or doctor about how long you need to continue.

Talking about your worries

Talking about your feelings to your partner may help ease your anxieties. Even if you do not feel like having sex, you can still enjoy a close and loving relationship with your partner. Don't feel guilty or embarrassed to talk to your doctor or nurse about this matter either. Knowing how sensitive this issue can be, they will be glad to help you. You can also be referred for specialist counselling, if you think that would be helpful. You can also call our Cancer Nurseline on 1800 200 700 for advice in confidence.

Skin and nail changes

Chemotherapy, targeted therapies and immunotherapies can all cause skin and nail problems. Your doctor or nurse will explain this before you start treatment and give you some advice.

Depending on your treatment and how you react to it, you may experience some of the following side-effects:

Dry or discoloured skin

Skin can become very dry with some drug treatments. Moisturise your skin if it's dry. Always ask your nurse or doctor about the best creams to use, as some may irritate your skin.

Rashes or itching

Rashes and itching can be mild or more severe. You may get bumps, pimples or an acne-like rash. Your skin may also feel sore. Ask your nurse or doctor for advice if you develop a rash or itchy skin – there are medicines and creams that can help.

In rare cases, a rash or itching may mean you're having a reaction to the drug, so it's important to always tell your medical team about any skin changes.

Increased sensitivity to sunlight

Some drugs make your skin very sensitive to sunlight, so it's more likely to burn. Ask your nurse or doctor about what precautions you should take and always protect your skin – cover up, wear a hat and use a suncream with a sun protection factor (SPF) of at least 30.

Sore skin on the palms of your hands and the soles of your feet

Tell your doctor straight away if you get this side-effect. They may need to adjust your treatment.

Nail changes

Nails may become dark, yellow or brittle and cracked. White lines can also appear across them. Sometimes the nails can loosen and fall off. Don't worry about this, as new nails will grow back over time.

Hints and tips: Skin and nail changes

- Pat your skin dry with a soft towel after bathing.
- Avoid wet shaving. Use an electric razor.
- Moisturise your skin if it becomes dry or itchy. Only use creams and soaps recommended by your doctor and nurse.
- Avoid direct sunlight. Wear a wide-brimmed hat, long-sleeved clothing and use a high factor suncream (SPF 30 or higher) to protect your skin.
- Don't use sunbeds.
- Wear loose clothes made of cotton or other natural fibres.
- Wear nail varnish to disguise discoloured nails
- Wear gloves when doing the washing-up, cleaning or gardening.
- Report any skin changes to your doctor and nurse. Don't try to treat them yourself – get advice from your medical team.



Life during and after treatment

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Adjusting to life during and after treatment

It is possible to have a fairly normal life during treatment. You may have symptoms and side effects, but there are often medications that can help. You will get to know which parts of the cycle tend to be good days and when you may need to rest. This can help you feel in control and do the things you normally like doing. Listen to your body, rest when you need to and do things you enjoy when you feel well.

Once treatment finishes, it may take a while to recover fully and get back to your old routine, so try not to feel upset if it doesn't happen straight away. Depending on the effects of treatment, you may have to make some lasting changes to your life. Living a healthy lifestyle can help to reduce your chances of getting health problems in the future. See page 108 for healthy lifestyle tips.

Fatigue

Fatigue or tiredness can be the biggest thing that affects your everyday life. In fact, it may be at least a year before your body gets over the effects of treatment and you regain your strength. See page 77 for more about fatigue. A useful booklet called *Coping with Fatigue* is also available from the Irish Cancer Society. Call our Cancer Nurseline on 1800 200 700 for a free copy.

'So many kind and generous people asked me what I needed. Specific questions helped, like: "I'm at the supermarket, can I bring you dinner?" or "I'm off tomorrow, can I call in at 3?"'

School or work

School or college

Some students are able to continue with school or college during their treatment. But this can depend on where you are in your studies. If you are still in full-time education, you may need to consider putting your education on hold until your treatment is over. If you are preparing for important exams, it may be too much for you. You may find it hard to concentrate and focus. Instead, spend your time doing something that you enjoy until you are well enough for your studies.

Teenagers and school

If your child is a teenager, usually they can manage to go to school. Sometimes they may not want to go back because they are embarrassed about hair loss or other side-effects of treatment. But mixing with school friends can help to make things normal for your child. Gentle reassurance and counselling can help if it is a problem. Also, discuss your child's illness with the teachers. You will need to know when there are any infections like chickenpox or measles in your child's class. It is best if your child avoids games and PE while on treatment, as they may get overtired.

Work

Depending on how you feel and the type of work you do, you may be able to work during treatment. Discuss the issue with your doctor and employer before treatment. But don't be in a rush to get back to your normal routine with work. Just do as much as you feel comfortable with. If you do work, you may need to take rests during the day or shorten your working day. When you decide to return to work, begin with reduced hours, for example, mornings or afternoons only. Gradually build up your hours until you feel comfortable working a full day.

Finances

If you are worried about your finances and costs of treatment, see page 114 for more about benefits and allowances that you may be entitled to.

Social activities

Just because you are having treatment for cancer doesn't mean your social life has to stop. But, you may have to cut back on activities and nights out. You may also need to rest before you do go out. Tell your doctor or nurse if you have a special occasion coming up, like a wedding or holiday. It may be possible to change the time of your treatment to suit you, so you feel as well as possible and enjoy the occasion.



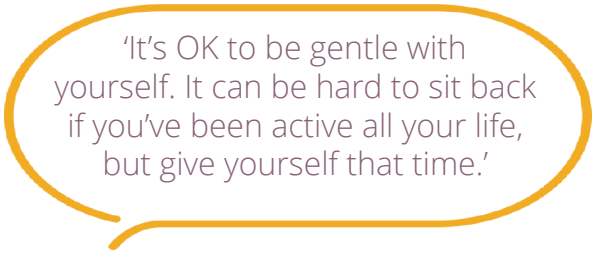
Travelling abroad

Tell your cancer specialist if you plan to go on holidays abroad. Also, you should get a letter from them giving details of any medicines you need to carry and your illness and treatment, in case you get sick abroad. For some holiday destinations you may need vaccines but some can be harmful if you are receiving treatment. These include live vaccines for polio, chickenpox, rubella (German measles), MMR (measles, mumps and rubella), BCG (tuberculosis), yellow fever and typhoid. There are, however, vaccines which you can have, if needed. Ask your doctor which vaccines are safe for you.

Insurance

Travel insurance: It is common for people who have or had cancer to have problems getting travel insurance. Sometimes it is hard to get travel insurance while you are having treatment, but once it is over, it is usually less of a problem. Discuss this with your doctor, who can advise you. The Irish Cancer Society also has information on travel companies that can help you. Call the Cancer Nurseline on 1800 200 700 or visit www.cancer.ie for more information on travel insurance and cancer.

Life insurance: You may want to provide some finances for your family in the future or wish to have a loan or mortgage paid off. Getting life insurance can be hard, if you have or had cancer. But it is not impossible. Call the Cancer Nurseline or visit www.cancer.ie for more information on life insurance and cancer.



'It's OK to be gentle with yourself. It can be hard to sit back if you've been active all your life, but give yourself that time.'

Relaxation

It's important that you make time for activities that relax you. Stress uses up energy and might make you feel tired. The following suggestions may help:

- Talk to others about anything that is worrying you. If you find it difficult to talk to family and friends, ask your doctor to refer you to a counsellor. You can also make an appointment with an Irish Cancer Society-funded counsellor based in your local cancer support centre. See page 122 for more about support centres.
- Try to take your mind off your worries by reading, seeing friends and listening to music.
- Take light exercise such as walking.
- See if there are relaxation classes or groups in your local cancer support centre. For example, meditation or mindfulness. See page 122 for more.
- If you can, try to avoid situations that make you anxious.

Cancer and complementary therapies

Complementary therapies are treatments and activities that you can have along with your standard medical treatment to try and feel better. For example, massage, counselling and acupuncture.

Complementary therapies can't treat or cure cancer, but some people say that complementary therapies help them to feel more relaxed and better able to cope with their cancer and the side-effects of treatment.

It's very important to talk to your doctor if you're thinking of using complementary therapies. Some can interfere with your treatment or be harmful to you, even if you have used them safely before your cancer diagnosis.

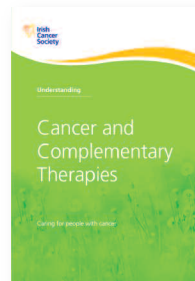
What's the difference between complementary and alternative therapies?

Complementary therapies are used together with standard medical treatment. Alternative therapies are used instead of standard medical care.

Modern medical treatments are very effective at curing cancer and keeping it under control. An unproven alternative could harm your health, or you might miss out on a treatment that could really help you.

More information

To find out more about complementary therapies, you can talk to one of our cancer nurses - call our Cancer Nurseline on 1800 200 700 or visit a Daffodil Centre. You can also ask for a free copy of our booklet *Understanding cancer and complementary therapies*, or download it from our website www.cancer.ie



Life after cancer

Being told your treatment has been successful is wonderful news. But it can take some time to adjust to life after cancer treatment. It isn't unusual to feel quite low and lost after your treatment has ended, especially during the first few months.

Feelings you may have include:

- Fear of cancer coming back and worrying about every small symptom.
- Loneliness without the company and support of your medical team and fellow patients.
- Stress at having to deal with things that may have been on hold during your treatment, such as your finances, going back to work and family issues.

- Isolation or guilt if your family and friends expect you to get back to normal before you are ready.
- Anxiety and self-doubt about sexual and romantic relationships.
- Anger at what has happened and the effect on you and your loved ones.
- Depression or sadness.

There is more about how to cope with these feelings and adjusting to life after cancer on our website www.cancer.ie/coping/life-aftercancer-treatment

You can also call our Cancer Nurseline or visit a Daffodil Centre to talk to a cancer nurse in confidence. See page 111 for more about coping with your emotions.

What follow up will I need?

After your cancer treatment has ended you will still need to go back to the hospital for regular check-ups. This is called follow-up. The follow-up may involve having a physical exam, blood tests and scans.

Tell your doctor or nurse how you have been since your last appointment. Remember to tell them about any new symptoms, aches or pains you have, or if you are finding it hard to cope.

It's important to attend your follow-up appointments, as they will allow your doctor to check for signs of recurrence and to help with any side-effects that you may have. They can also check for signs of new side-effects that may develop after you have finished treatment. It is better to be aware of these as early as possible so that suitable treatment can be given.

If you are between check-ups and have a symptom or problem that is worrying you, call your specialist nurse for advice or to arrange an earlier outpatient appointment if necessary.

If you become unwell and can't contact your specialist nurse or hospital team, go to your GP or the accident and emergency department at the hospital.

Looking after yourself



Many people want to make positive changes to their lives after their treatment has ended. Having a healthy lifestyle can help you to:

- Feel better
- Heal and recover faster
- Keep up your energy and strength

A healthy lifestyle includes:

- Exercising
- Eating well
- Not smoking
- Avoiding alcohol
- Protecting yourself from the sun

It's also important to have any vaccines recommended for you. For example, flu and pneumonia. Some vaccinations may not be suitable if you've had cancer treatment, so check with your doctor which you should have and make sure you get them.

If you want more information or advice, call our Cancer Nurseline on 1800 200 700 or visit a Daffodil Centre. You can also go to our website www.cancer.ie for tips and publications on healthy living.

Coping and support

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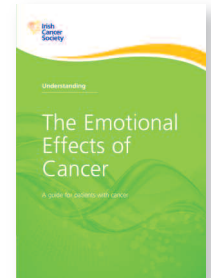
How can I cope with my feelings?

Some people say that trying to cope with their thoughts and feelings is the hardest part of having cancer.

You may find it hard to come to terms with your diagnosis, you may blame yourself, resent other people who are healthy or feel very anxious or depressed.

Emotions like sadness, fear, grief, hopelessness and anger can happen at different times, sometimes months or years after treatment.

A helpful booklet that discusses in detail how you may be feeling is called *Understanding the Emotional Effects of Cancer*. Call our Cancer Nurseline on 1800 200 700 or visit a Daffodil Centre for a free copy.



A cancer diagnosis can be hard on you - mentally and emotionally. Give yourself time and space to deal with your emotions, and get help if you need it.

Anxiety and depression

If you feel that anxiety or low moods are getting the better of you or you're finding it hard to cope, it's important to get help. Try to talk with someone you know who is a good listener, join a support group or tell your GP. Medical social workers can also offer support to you and your family.

Your doctor may also suggest medication to help with anxiety or depression. Often a short course of antidepressants or anti-anxiety medication can work well. Professional counselling can also be very helpful.

Counselling

If you're feeling very distressed or finding it hard to cope, a trained counsellor who is not involved in your situation can help you to express your feelings, worries and fears and make sense of them. Counselling can also give you emotional support, help you to make decisions and learn ways to cope better.

Free one-to-one counselling is available at some local cancer support centres. To find out more about counselling call our Cancer Nurseline on Freephone 1800 200 700 or visit a Daffodil Centre. Or email the nurses at cancernurseline@irishcancer.ie

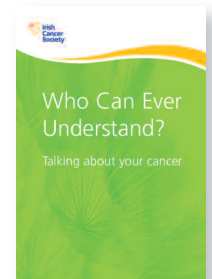
A list of counsellors funded by the Irish Cancer Society is available at www.cancer.ie



'Talking about cancer made it less awful and helped ease my fears. I learned to cope and understand myself better.'

You and your family

Every family deals with cancer in its own way. You may feel that you don't want your illness to upset family life, feel guilty that you can't join in as much as before, or that you're letting down your partner or children. You may also worry about the emotional impact your illness will have on your loved ones. Our booklet *Who Can Ever Understand?* can help to you find ways to talk about your cancer and to ask for the help and support you need.



If you or your family members need more support or advice, speak to the medical social worker at the hospital or get in touch with one of our cancer nurses. Call us on 1800 200 700 or visit a Daffodil Centre. The nurses can also support you if you have children and aren't sure what to say to them. You could also read our booklet *Talking to Children about Cancer*, which has practical advice about how to talk to children of different ages.



Coping with the financial impact of cancer

A diagnosis of cancer often means that you will have extra expenses, like car parking during hospital visits, medication, travel, heating and childcare costs. If you can't work or you are unemployed, this may cause even more stress. It may be harder for you to deal with cancer if you are worried about money.

Medical expenses

Medical expenses that you might have to pay include:

- Visits to your family doctor (GP)
- Visits to hospital
- Overnight stays in hospital
- Medicines
- Appliances, like wigs

How much you pay towards your medical expenses depends on whether or not you qualify for a medical card and what type of health insurance you have, if any.

If you have a medical card, you will probably have very little to pay for hospital and GP (family doctor) care or your medication. If you are over 70, you can get a free GP visit card.

Medical cards are usually for people on low incomes, but sometimes a card can be given even if your income is above the limit. For example, if you have a large amount of medical expenses. This is known as a discretionary medical card.

An emergency medical card may be issued if you are terminally ill and in palliative care, irrespective of your income.

If you don't have a medical card you will have to pay some of the cost of your care and medication.

If you have health insurance the insurance company will pay some of the costs, but the amount will depend on your insurance plan. It's important to contact your insurance company before starting treatment to check you're covered.

Benefits and allowances

There are benefits that can help people who are ill and their family. For example, Illness Benefit, Disability Allowance, Invalidity Pension, Carer's Allowance, Carer's Benefit, Carer's Leave.

If you want more information on benefits and allowances, contact:

- The medical social worker in the hospital you are attending
- Citizens Information – Tel: 0761 074 000
- Department of Employment Affairs and Social Protection – Tel: 1890 662 244 or ask to speak to a DSP representative at your local health centre or DSP office.

Always have your PPS number to hand when you are asking about entitlements and benefits. It's also a good idea to photocopy completed forms before posting them.



If you have money problems

If you are getting into debt or you are in debt, the Money Advice and Budgeting Service (MABS) can help you. MABS can look at your situation, work out your budget, help you to deal with your debts and manage your payments. The service is free and confidential. Call the MABS Helpline 0761 07 2000 for information.

If you are finding it hard to cope financially, contact your medical social worker in the hospital or your local health centre for advice. The Irish Cancer Society can also give some help towards travel costs in certain cases. See page 119 for more details of our Volunteer Driver Service and the Travel2Care fund.

You can also call our Cancer Nurseline 1800 200 700 or visit a Daffodil Centre and the nurse will suggest ways to help you manage.

More information

Go to www.cancer.ie/publications and check out our booklet, *Managing the Financial Impact of Cancer*. This explains:

- Medical costs and help available
- Benefits and allowances that you or your family may qualify for
- Travel services
- Ways to cope with the cost of cancer



The booklet also has lots of other information to help you manage the cost of cancer. For example, disability and mobility supports, help for people in financial difficulty, help for carers and living at home and nursing home supports.

Irish Cancer Society services

Our Cancer Support Department provides a range of cancer support services for people with cancer, at home and in hospital, including:

- **Cancer Nurseline**
- **Daffodil Centres**
- **Survivor Support**
- **Support in your area**
- **Patient travel and financial support services**
- **Night nursing**
- **Publications and website information**

Cancer Nurseline Freephone 1800 200 700

Call our Cancer Nurseline and speak to one of our cancer nurses for confidential advice, support and information. The Nurseline is open Monday–Friday from 9am to 5pm. You can also email us on cancernurseline@irishcancer.ie or visit our Online Community at www.cancer.ie

For the deaf community, our Cancer Nurseline is using the Sign Language Interpreting Service (SLIS) using IRIS. Contact IRIS by text 087 980 6996 or email: remote@slis.ie



Daffodil Centres

Visit our Daffodil Centres, located in 13 hospitals nationwide. The centres are staffed by cancer nurses and trained volunteers who provide confidential advice, support and information to anyone concerned about or affected by cancer.

Who can use the Daffodil Centres?

Daffodil Centres are open to everyone – you don't need an appointment. Just call in if you want to talk or need information on any aspect of cancer including:

- Cancer treatments and side-effects
- Chemotherapy group education sessions
- Emotional support
- Practical entitlements and services
- Living with and beyond cancer
- End-of-life services
- Lifestyle and cancer prevention
- Local cancer support groups and centres

You can email daffodilcentreinfo@irishcancer.ie or visit www.cancer.ie to find your local Daffodil Centre.

Survivor Support

Speak to someone who has been through a cancer diagnosis. Our trained volunteers are available to provide emotional and practical support to anyone going through or finished with their treatment.

Support in your area

We work with cancer support groups and centres across the country to ensure cancer patients have access to confidential support, including counselling. See page 122 for more information.

Patient travel and financial support services

We provide practical and financial support for patients in need, travelling to and from their cancer appointments. There are two services available through the Society:

- Travel2Care is a limited fund, made available by the National Cancer Control Programme, for patients who are having difficulty getting to and from their treatments while attending one of the national centres of excellence or their approved satellite centres.
- Irish Cancer Society Volunteer Driver Service is for patients undergoing chemotherapy treatments who are having difficulty getting to and from their local appointments in our partner hospitals.



To access either of these services please contact your hospital healthcare professional.

Irish Cancer Society Night Nursing



We provide end-of-life care for cancer patients in their own home. We offer up to 10 nights of care for each patient. Our service allows patients to remain at home for the last days of their lives surrounded by their families and loved ones. This is the only service of its kind in the Republic, providing palliative nursing care at night to cancer patients.

Publications and website information

We provide information on a range of topics including cancer types, treatments and side-effects, coping with cancer, children and cancer, and financial concerns. Visit our website www.cancer.ie, call into a Daffodil Centre or call our Cancer Nurseline for free copies of our publications.



If you would like more information on any of our services, call our Cancer Nurseline on 1800 200 700 or visit a Daffodil Centre.

Local cancer support services

The Irish Cancer Society works with cancer support services all over Ireland. They have a range of services for cancer patients and their families, during and after treatment, many of which are free. For example:

- **Professional counselling** (the Irish Cancer Society funds up to 8 sessions of free one-to-one counselling in many affiliated support services)
- **Support groups**, often led by professionals like social workers, counsellors, psychologists, or cancer nurses
- **Special exercise programmes**, like the Irish Cancer Society's Strides for Life walking group programme
- **Stress management and relaxation techniques**, such as mindfulness and meditation
- **Complementary therapies** like massage, reflexology and acupuncture
- **Specialist services** such as prosthesis or wig fitting and manual lymph drainage
- **Mind and body sessions**, for example, yoga and tai chi
- **Expressive therapies** such as creative writing and art
- **Free Irish Cancer Society publications** and other high-quality, trustworthy information on a range of topics

Cancer support services usually have a drop-in service where you can call in for a cup of tea and find out what's available.

You can call our Cancer Nurseline on Freephone 1800 200 700 to find your nearest cancer support centre. Or see our online directory at <http://www.cancer.ie/support/support-in-your-area/directory>

Questions to ask your doctor

Never be shy about asking questions. It's better to ask than to worry.

What type of treatment will I get?

Will the treatment cure the cancer?

Are there other treatment options? Why is this one best for me?

Would I be suitable for a clinical trial?

How long will my treatment take?

Do I have to stay in hospital for my treatment?

What side-effects will I get?

Is there anything I can do to help myself during treatment?

Are there any vaccines I should have?

Will treatment affect my fertility?

How often will I need check-ups?

What if the cancer comes back?

Your own questions / notes

What does that word mean?

Alopecia	Hair loss. No hair where you normally have hair.
Anaemia	Fewer red blood cells (haemoglobin) in your blood. This can make you feel tired, weak and breathless.
Anti-emetic	A tablet, injection or suppository given to stop you feeling sick or vomiting.
Cannula	A small tube put into a vein in your arm or on the back of your hand to give drugs. Some people also call this a 'drip'.
Central line	A long, thin flexible tube passed through your skin and into a large vein in your chest, neck or groin.
Chemotherapy	Treatment with anti-cancer drugs. Also known as chemo.
Cycle	The day or days of your treatment, followed by a possible rest period, when you have no treatment and your body is recovering.
Cytogenetics	The study of chromosomes in cells.
Cytotoxic	A drug that can kill cancer cells and healthy cells.
Endocrine	To do with hormones.
Fatigue	Ongoing tiredness, often not eased by rest.
Haematology	The study of blood and blood disorders.
Implantable port	A small round metal or plastic disc that sits under the skin on your upper chest or arm. It is connected to a tube which leads to a large vein just above your heart. Also called a portacath.
Immunotherapy	Drugs that help your immune system to work better to fight cancer cells.

Intravenous	Into a vein. Also called IV.
Malignant	Cancer.
Medical oncologist	A doctor who specialises in treating cancer patients with chemotherapy or other drugs.
Metastases	Tumours that have spread from the first (primary) tumour into another part of the body. Also known as secondary tumours.
Nausea	Feeling sick or wanting to be sick.
Neutropenia	When there are fewer neutrophils, a type of white blood cell. This can lead to infection.
Oncology	The study and treatment of cancer.
Oral	To do with the mouth.
Palliative	Treatment given to improve symptoms of cancer, such as pain, pressure or bleeding, and improve quality of life.
PICC line	A peripherally inserted central catheter. This is a thin, flexible tube passed into a vein in your arm and tunnelled through until the end of the tube lies in a large vein near your heart.
Portacath	See implantable port.
Progression	The cancer has grown. There is more disease now than before treatment.
Remission	There is no evidence of cancer.
Stable disease	The cancer has not grown or shrunk since starting treatment. The amount of disease has not changed.
Targeted therapy	Drugs that target certain parts of cancer cells that make them different from normal cells.

Acknowledgments

This booklet has been produced by the Irish Cancer Society to meet the need for improved communication, information and support for cancer patients and their families throughout diagnosis and treatment. We would like to thank all those patients, families and professionals whose support and advice made this publication possible. We would particularly like to acknowledge the contribution of the many consultants, nurses and other healthcare professionals who so kindly gave up their time and expertise to contribute to previous editions of this booklet.

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The following sources were used in the publication of this booklet:

- *National Cancer Strategy 2017-2026*, National Cancer Control Programme
- *Cancer in Ireland 1994-2016 with estimates for 2016-2018: Annual report of the National Cancer Registry* (2018)
- *Cancer Nursing: Principles and Practice*, CH Yarbro, MH Frogge, M Goodman & SL Groenwald, Jones and Bartlett, 7th Ed (2011).
- *The Chemotherapy Source Book*, M Perry, Lippincott Williams and Wilkins, 5th Ed (2012).

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Join the Irish Cancer Society team

If you want to make a difference to people affected by cancer, join our team!

Support people affected by cancer

Reaching out directly to people with cancer is one of the most rewarding ways to help:

- Help people needing lifts to hospital by becoming a volunteer driver
- Give one-on-one support to someone newly diagnosed with cancer as part of our Survivor Support programme
- Give information and support to people concerned about or affected by cancer at one of our hospital-based Daffodil Centres

Share your experiences

Use your voice to bring reassurance to cancer patients and their families, help people to connect with our services or inspire them to get involved as a volunteer:

- Share your cancer story
- Tell people about our services
- Describe what it's like to organise or take part in a fundraising event

Raise money

All our services are funded by the public's generosity:

- Donate direct
- Take part in one of our fundraising events or challenges
- Organise your own event

Contact our Cancer Nurseline on Freephone 1800 200 700 if you want to get involved!

Did you like this booklet?

We would love to hear your comments or suggestions.
Please email reviewers@irishcancer.ie

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