

Chemotherapy for children

Chemotherapy is one way your child may be treated for a brain tumour.

Chemotherapy uses 'cytotoxic' (anti-cancer) drugs to destroy cancer cells by interrupting or stopping their growth over a period of time or 'cycles'.

Chemotherapy can be used on its own, in association with radiotherapy, or it may be used before surgery to shrink your child's tumour, or afterwards to help prevent it from returning.

In this fact sheet:

- How does chemotherapy work?
- Why is chemotherapy given?
- How is chemotherapy given?
- Preventing infection of your child's central line
- After treatment
- Answers to some common questions you may have about chemotherapy

The Brain Tumour Charity has a range of animations for children that explore and explain a variety of subjects relating to brain tumours and includes one on chemotherapy. Find it at thebraintumourcharity.org/jake

How does chemotherapy work?

Our bodies are made up of cells that divide as part of their natural cycle to reproduce and repair themselves. If this process is disrupted, the cells can begin to grow in an uncontrolled way, creating a lump of cells called a tumour.

Chemotherapy drugs disturb the dividing process of both tumour cells and healthy cells. However, healthy cells are more able to repair themselves however, whilst tumour cells are more likely to die.

The fact that chemotherapy acts on dividing cells explains some of its side-effects. Cells in the body that divide frequently (i.e. skin and hair cells, cells lining the digestive system and bone marrow cells which make blood cells) are therefore vulnerable to chemotherapy. This is why these parts of the body are often affected by chemotherapy. For more information about side effects, see the side-effects section of this fact sheet.

Why is chemotherapy given?

Your child's health team will carefully consider the best course of treatment for your child. This will depend on several factors, including your child's exact tumour type, their age and size and their general health. You should feel free to ask as many questions as you wish.

Chemotherapy may be given:

- Before surgery to shrink a tumour to make it easier to operate on
- After surgery to prevent a tumour from returning
- To treat a tumour that has returned
- To shrink a tumour that cannot be operated on
- To prevent further growth of a tumour
- Before, during or after radiotherapy.

How is treatment given?

Your child may be given chemotherapy in one of a number of ways - intravenous (IV) chemotherapy by injection or drip, or oral chemotherapy by tablet or liquid.

Very occasionally chemotherapy may be injected into the fluid surrounding the brain and spine (cerebrospinal fluid). This is called intraventricular (brain) or intrathecal (spine) chemotherapy.

Chemotherapy can also be put into the brain as a wafer or gel at the time of surgery, but this is only licensed for use in adults, so is very rarely used in children.

Chemotherapy by injection into a vein (known as intravenous or IV chemotherapy)

For children, chemotherapy is usually injected into the vein via a 'central line'.

A central line is a thin, hollow, flexible tube, made from silicone rubber, which is inserted into a vein and fed through the vein into a large **central** blood vessel in the chest, close to the heart. (This is why it is called a central line.)

Your child will be under anaesthetic when the tube is inserted, so it will not be painful.

The central line will stay in place for several months whilst your child receives chemotherapy treatment.

The central line (tube) carries chemotherapy into the body. It can be used for injections of a single dose of a drug. Or it can be attached to a drip, which is used for the slow delivery of a larger volume of fluid containing the drug.

There are different types of line and the type of line your child has depends on factors, such as their tumour type and also their age.

Different IV chemotherapy tubes have different names and your child may have one of the following:

- Central line (central venous catheter) is inserted near the collarbone and runs to a large vein near the heart. The other end of the line will then be tunnelled under the skin to reach the exit site, which is usually in the chest area. (The exit site is the place where the tube comes out of the body).
- Portacath (an implantable port) may be inserted into the upper chest or under the arm and runs to a large vein in the lower neck.
- PICC line (Peripherally Inserted Central venous Catheter) is inserted into a large vein on the arm near to where the elbow bends. It runs to a large vein near the heart.

There are advantages and disadvantages of different types of lines. For more information about these lines, see *What is the difference between the different tubes used in intravenous (IV) chemotherapy?* further on in this fact sheet.

Oral chemotherapy (liquid or tablet)

Your child may have chemotherapy in the form of tablets or liquids, although this is less common, as some types of chemotherapy drugs cannot be absorbed by the stomach, so cannot be taken orally.

Chemotherapy given orally is absorbed in the stomach and carried around their body in the blood stream to reach the cancer cells.

If your child is given a tablet or liquid form of chemotherapy, it is important that they take it exactly as prescribed in order to maximise effectiveness.

You should not crush the tablets unless you are advised to.

Care should be taken to touch the medication as little as possible and you and your child should wash your hands as soon as possible after doing so. Whoever is giving the drugs should wear disposable medical gloves.

Pregnant mothers should be extremely careful when handling chemotherapy medication or bodily fluids that may contain chemotherapy drugs.

Your child's health team can give you more information.

Some children may have difficulty swallowing the chemotherapy tablets, as they can be quite large, or they may be fearful of taking tablets in general. This is not uncommon and they should know that they are not alone in their difficulties.

Care should be taken not to make medication a battle, as this can increase the anxiety levels of your child further.

There can be an after-taste to these drugs - chewing flavoured gum afterwards can help to disguise this taste.

If you are having difficulty getting your child to take their chemotherapy drugs, talk to your child's health team about ways of supporting your child and reducing their anxiety.

A pharmacist can also advise on other ways the tablets can be given. Or, depending on your child's age, they could practice with small sweets, such as tic tacs or similar.

Your child's medical team may be able to refer your child to a psychologist or psychiatrist, who can help your child with coping strategies and help them prepare for treatment. Alternatively, they may recommend a therapist who can help with relaxation and visualisation techniques.

What is the difference between the different tubes used in intravenous (IV) chemotherapy?

All lines and ports are usually put in under a general anaesthetic, but occasionally a PICC line may be put in under local anaesthetic in an older child.

Your child will not feel pain as the line is inserted, but they may feel some pulling as it is moved around. They may also be uncomfortable or feel some mild pain for a few days afterwards once the anaesthetic wears off.

Once any line is inserted, your child will then have an x-ray to make sure that the line is in the right place.

Central lines

Central lines are often referred to by the name of their inventor or manufacturer. For example, your child may be given a Hickman line®, which is a common type of central line used in children.

Other trade names or manufacturers of central lines include Groshong® and Broviac®.

A central line will usually be inserted near the neck around the collar bone area. One end is fed into one of the main veins going towards your child's heart. The other end of the line is then tunnelled under the skin to reach the exit site (the place where the tube comes out of the body). This is usually in the chest area.

A length of line is left outside the body, which is kept closed with special caps or bungs that can be attached to a syringe, to inject the chemotherapy drugs, or to a drip. Sometimes there is also a clamp to keep the line closed when it isn't being used.

Other lines don't have clamps. They have a special valve inside the line instead that stops air getting into the line.

The line outside the body will be held in a 'wiggly bag' or taped to the skin to reduce the chance of it being pulled out accidentally. You will be able to feel a small ring around the exit site of the central line, just under the skin - this is the cuff of the line and helps to stop it from falling out.

A line is often referred to as a 'Wiggly' on children's wards to help make them feel more friendly.

PICC lines

A PICC line is similar to a central line, except that the line is fed in through a vein in the arm until the end reaches the main vein going to the heart. This means the exit site is in the arm rather than the chest.

Portacaths

A portacath is a bit different in that the tube does not exit the body. While one end is in the vein close to the heart, the other end is in a small chamber (port) that is implanted under the skin in the chest.

The chemotherapy drugs are then injected into the port using a special needle. The skin over the portacath can be numbed using local anaesthetic cream before the injection.

Advantages/disadvantages

Central and PICC lines can be helpful if your child feels anxious about needles as it means they won't need to have a needle inserted each time they have chemotherapy.

However, the exit sites and lines outside the body need to be kept dry so they require extra care when bathing. Swimming is also not generally possible.

There are various products on the market which provide watertight cover for these lines making bathing easier and/or allowing swimming. These include dry suits for children with central lines.

See the Resources section of this fact sheet for more information.

Before using swimming products please discuss any risks, or reasons why your child should not use these resources, with your child's medical team.

For example, swimming is not recommended with a Hickman line if your child's immunity is lowered.

The advantage of portacaths is that you can't see the portacath and your child will not have tubes coming out of their body.

This makes it easier when bathing and swimming can more easily continue while the line is in place.

Swimming is not allowed for two weeks after insertion or until the insertion site heals.

A portacath also requires less flushing than a central or PICC line to clean it out when not in use. Flushing for a portacath is required about once a month.

The disadvantage of portacaths is that your child will need to have a needle put in each time they have treatment, so they are not so good for children who are needle phobic.

The special needle used (called a gripper needle) can be left in the port for up to a week at a time - **but your child should not swim if the gripper needle is left in place.**

For more information and to see what the various lines look like, please see the following video: Living with Central Lines, vimeo.com/64312084

Caring for your child's central or PICC line

Preventing infection

Central and PICC lines can usually stay in place for several months, or longer if needed, but they must be looked after and kept clean.

Staff should take good care with your child's line and should follow correct procedures. This includes disinfecting their hands and your child's skin at the point of line entry before insertion.

After insertion, the skin should be left clean, dry and a sterile, transparent dressing placed over the point where the line comes out. (This point is often referred to as the exit site).

You may wish to find out about best practice guidelines at your child's hospital, so that you can be aware of whether these are being followed. You can ask a member of your child's health team, such as the Clinical Nurse Specialist or key worker, for more information about this.

You will be given information about how to care for your child's line once it has been inserted. You may be given a booklet to take away, but you may find it helpful to write instructions down in your own words to help you remember what to do.

To help prevent infection, the exit site needs to be cleaned and the transparent sterile dressing changed, once a week.

Infections can occur in central and PICC lines at the exit site or in the lumen (the space in the middle of the line).

They can often be identified through:

- Reddening at the exit site (chest or arm)
- Discoloured fluid weeping from the exit site
- Pain when moving the arm at the site of the central line
- Your child developing a fever (a temperature of more than 38oC).

If you notice any of these symptoms or your child is unwell, you should contact your child's doctor or treatment centre immediately.

If an infection has occurred, it would usually be treated by antibiotics. If these do not clear the infection, or if the intravenous infection is serious, the line may need to be removed.

When a central/PICC line is not in use, there is a small risk that it can become blocked or infected. To prevent this from happening, the line will need to be 'flushed', typically once a week.

'Flushing' is where a small amount of fluid (usually a salt/saline solution) is flushed into the central line using a syringe. Either a nurse will do this (in hospital or they may come out to your home) or you may be taught how to do it.

A drug called heparin is often also added to the flushing solution to help reduce the chance of unwanted clots developing in the line or veins.

If you have any concerns about your child's line, you can call the ward for support and guidance.

Keeping air out of the line

No air can be allowed to get into your central/PICC line as this can cause complications. The clamps, when they are present, should always be CLOSED when the line is not in use.

The line must also not be left unclamped when the caps/bungs aren't in place.

If the clamp comes undone, the line should be flushed and the line reclamped. A nurse or other health professional will ensure that the line is clamped appropriately.

Accidentally dislodged

If this does happen, do not worry unduly. Apply pressure to the exit site over the exit scar for a few minutes. Usually the blood will clot quite quickly to seal

up the wall of the vein. The hospital staff will tell you what to do if this happens.

Caring for your child's portacath

Immediately, and for a few days after the port has been put in, check for the following:

- Redness
- Swelling
- Bleeding
- Bruising
- Pain or heat around the wounds.

Let your hospital doctor know straight away if your child has any of these signs, as they could mean an infection.

After each treatment with chemotherapy drugs, a small amount of fluid needs to be 'flushed' into the catheter so it doesn't become blocked. If it isn't being used regularly, it will only need to be flushed every four weeks.

How long will chemotherapy last?

Treatment plans vary enormously and your child's chemotherapy will be carefully planned and tailored to them individually.

These variations in treatment depend on many factors including the type of tumour your child has, your child's age, the amount of surgical removal achieved (where relevant), and your child's general health.

As a result, it could vary from daily chemotherapy for a while, as a day case in hospital, to being admitted to the ward for several days every two to three weeks.

The overall length of chemotherapy treatment also varies widely, and can be from between approximately three months to 12 months, or even longer. The duration and frequency will be explained by your child's medical team.

Is there a maximum number of times my child can have chemotherapy?

This very much depends on the type of chemotherapy drug.

Some have to be limited because of 'cumulative toxicity'. This means that with each dose, the side-effects that affect the body and its functions increase, so the total dose has to be limited.

Other chemotherapy drugs will be stopped if they are not working, if an unacceptable toxicity (side-effect) occurs, or if your child can no longer tolerate the drug.

Will my child need to stay in hospital?

Chemotherapy is often given as an outpatient treatment, which means that your child wouldn't usually have to stay in hospital overnight, but in certain circumstances they may need to. Your child's doctor will talk to you about this before treatment begins.

Generally speaking, if your child is given chemotherapy in tablet or liquid form, they will be able to take this at home.

If they are having chemotherapy by injection, they would usually have this in a chemotherapy clinic as an outpatient.

Why does my child have to have rest periods?

Rest periods between treatment sessions give your child's body a chance to recover from any side-effects and give healthy cells an opportunity to repair themselves.

Having chemotherapy in a series of cycles (treatments and rest periods) also enhances its effectiveness.

This is because chemotherapy only destroys cells that are in the process of dividing. Cancer cells are not dividing all the time, there will be times when they are resting.

So the first time your child is given chemotherapy it won't work on the cells that are resting. The second time they are given it, the cells that were resting the first time may now be dividing and the chemotherapy will destroy them and so on.

What side-effects might my child have?

Side-effects vary from child to child and according to the drugs they have been given.

As chemotherapy temporarily acts on healthy cells as well as cancer cells, it may cause some unpleasant, short-term side effects, commonly including:

Lowered immunity

There are three types of cells in the blood - called red blood cells, white blood cells and platelets. Each have different functions. Chemotherapy can temporarily lower the number of all these blood cells.

If their number is very low, red blood cells and platelets can be replaced by giving more red blood cells or platelets. This is known as a transfusion.

However, it is not possible to give transfusions of white blood cells.

'Neutropenia' the medical term you may hear, which is used to describe an abnormally low number of neutrophils, the most common type of white blood cell.

So, as white blood cells play a vital role in fighting infection, your child may become more susceptible to infections.

It is therefore important that your child has good personal hygiene whilst undergoing chemotherapy. This includes keeping clean and washing their hands after using the toilet.

Doctors will monitor your child's health and will give them antibiotics to help fight infection if necessary.

It is important that you inform your child's doctor if your child has a high temperature or suddenly feels unwell. Your medical team will tell you what temperature counts as 'high'.

Childhood illnesses, such as chickenpox or measles, can be particularly dangerous when your child has a lowered immunity.

Your child should not have contact with anyone who has these conditions and, if they have been in recent contact with someone who has developed either chickenpox or measles, you should inform their medical team.

If your child is immune to these illnesses through previous contact/having had the illness, they are unlikely to develop infection with conventional dosages of chemotherapy. However, you should still tell your child's medical team so they can assess the risk.

The inoculations/vaccines your child can have

All children in the UK are offered immunisation against key illnesses as part of the national childhood immunisation schedule.

In the UK, immunisation can be given in the form of live or 'attenuated/ weakened' vaccines by injection. (Attenuated or weakened viruses contain a small amount of living bacteria or living virus that has been weakened in the laboratory).

All types of vaccine activate the body's natural defence (immune) system to help fight particular infections, but if your child is having or has had chemotherapy, their immune system will be lowered, and they will not be able to fight the bacteria or viruses in the vaccines.

For this reason, your child should not have the following vaccines if they are having chemotherapy or have finished chemotherapy in the last six months:

- Measles
- Mumps
- Rubella (German measles)
- MMR (measles, mumps and rubella) vaccination
- BCG vaccination (protecting against tuberculosis)
- Yellow fever
- Oral typhoid

It is generally safe for your child to have 'inactivated' vaccines, which do not contain living bacteria or viral microbes.

However, children on chemotherapy are often not given these as they are likely to be less effective while their immune system is lowered.

The exception to this is the injectable flu vaccine - it is important for children on chemotherapy to be given a flu vaccine. Everyone else in their household should also have the vaccine, as your child is at extra risk from flu.

You may have heard about a nasal spray flu vaccine available for children aged 2 or 3 years old, and, in some parts of the country, also for children aged between 4 and 10. (It is due to be rolled out to all children). However, this vaccine uses weakened flu viruses rather than inactivated ones, so is not suitable for children with weakened immune systems.

You should always check with your child's consultant before they have a vaccination.

Tiredness

Many children who have chemotherapy experience tiredness and low energy (fatigue). This can be frustrating, particularly for children who enjoy sports or playing outside.

As chemotherapy can temporarily lower red blood cell count, your child may become anaemic and look 'washed out' or pale.

The tiredness will wear off once treatment has finished, but it may take a few months for their energy levels to return to normal. Speak to your child's doctor if you are concerned.

Anaemia

Anaemia is a relatively common side-effect for children who are having chemotherapy. Symptoms of anaemia include extreme tiredness and shortness of breath.

This is because chemotherapy can temporarily lower the number of red blood cells, which carry oxygen around the body (in a substance called haemoglobin).

Your child's haemoglobin (Hb) levels will be monitored by blood tests, so that action can be taken if they fall too low.

Iron levels may also be monitored by blood tests, as iron is needed to produce the haemoglobin, which carries the oxygen around the body.

Children are not generally iron deficient when on chemotherapy. However, giving your child foods that are rich in iron (red meat, leafy vegetables, such as broccoli and watercress, nuts, dried fruit and beans) may help to ensure that your child's haemoglobin levels do not drop too low by maintaining their iron levels.

Of those children who experience anaemia, some will have Hb levels that fall too low. These may need to have a blood transfusion to increase their number of red blood cells.

Your child's doctor will advise you as to the best way to help your child if they become anaemic.

Nausea

Your child may feel sick (nausea) or be sick (vomit) after treatment. Not all chemotherapy drugs have this effect, however, and some children experience no sickness at all.

Anti-sickness tablets or liquid medicine can be given if your child experiences nausea or vomiting, or if the particular chemotherapy drugs they are having are known to be likely to cause it.

You may hear this type of medicine called 'anti-emetic'. It can be given as tablets, liquid medicine or via the intravenous route through your child's central line.

Hair loss

Not all chemotherapy causes hair loss, it depends on which drug or combination of drugs your child has.

Some drugs result in no hair loss at all, or only a very small amount. Some cause only hair thinning, rather than loss, but other drugs can cause more substantial hair loss.

Generally, any hair loss will start within a few weeks of treatment beginning.

Once treatment has finished, hair should begin to grow back over the next few months. It may be different to how it was previously (for example, it may be curly when it was straight before).

Your child may be receiving radiotherapy as well as chemotherapy. If this is the case, they may have more permanent hair loss, as this can be caused by the radiotherapy.

See the *Radiotherapy for children* webpage and fact sheet for more information about radiotherapy.

Any hair loss will lead to an increased risk of sunburns and even heat strokes. Make sure your child's head is covered during sun exposure.

As hair loss can be very visible, it can be upsetting for both the child and their friends and family. You may find it helpful to arrange a wig before your child loses any hair.

If your child is under 16 years old, or is under 19 years and in full-time education, they are entitled to a free synthetic wig on the NHS. Speak to your child's health team for more information.

Sore mouth (oral mucositis)

Oral mucositis (inflammation of the inside of the mouth) is a possible side effect of chemotherapy that is more likely with high doses.

Some people describe oral mucositis as feeling similar to when you burn your mouth from eating or drinking something that is too hot.

Usually, oral mucositis clears up on its own within a few weeks after treatment has ended, but it can be very unpleasant.

Sucking on ice cubes or ice lollies can help to relieve discomfort, as can taking medicines, such as paracetamol. Ask your child's doctor to suggest or prescribe something.

Doctors often **don't** recommend using paracetamol or ibuprofen for pain, as these can mask a temperature. Always consult your child's doctor before giving your child medication.

If your child experiences oral mucositis, they may also suffer from ulcers in their mouth or on their tongue and lips.

It is possible for ulcers to bleed and to become infected, particularly as your child's immunity will be lowered from the chemotherapy.

It is therefore important that your child keeps good oral hygiene - brushing their teeth using a toothbrush that has soft bristles (e.g. a baby toothbrush) and flossing after each meal and before bed.

If you are concerned about oral mucositis, it is important to seek medical advice from your child's doctor.

Effects on skin

It is possible that your child's skin may become more sensitive with chemotherapy drugs - for example, to the sun and to chlorine. Or they may develop rashes or changes in skin colour.

With any skin effects, it is important to ensure that your child is protected from the sun and to follow any advice given by your child's health team.

Visual problems

The eyes can be affected by some chemotherapy drugs. Symptoms can include blurred vision, dry eyes and sensitivity to light. Often these symptoms will disappear by themselves a few months after treatment is stopped. They can be temporarily helped by using drops for dry eyes and wearing sunglasses.

If your child continues to complain of blurred vision 2-3 months after the chemotherapy has finished, you should take them to the opticians for an eye test.

As they are experiencing symptoms, the eye test will be funded by the NHS if your child is a UK resident under the age of 16, or they are 16-19 years old and in full time education or training.

If your child experiences a sudden loss of vision or severe eye pain, it is important to contact their doctor straight away and report the symptoms.

Taste, appetite and digestion

Sometimes, chemotherapy causes changes to taste and appetite. It can also cause diarrhoea or constipation. If your child has a sore mouth (oral mucositis), they may not feel like eating.

(For more information about these issues and for some practical suggestions about how to deal with them, see our Helping your child to eat fact sheet.)

Future fertility

Some chemotherapy drugs may cause temporary or permanent infertility (an inability to have children), so it is very important to discuss any effects on your child's fertility with a member of your child's health team before they start treatment.

Possible options, such as sperm banking (boys) or egg freezing (girls), will depend on whether your child has reached puberty and, for girls, how urgently they need to start treatment for their brain tumour.

Other treatments you may have heard of, such as freezing their ovarian tissue (girls) or testicular tissue (boys), may be available for children who have not reached puberty, but may not be available in all NHS trusts.

Speak to your health team for more information.

Other side-effects

These can include:

- Bruising more easily than usual
Due to platelet counts being affected (Platelets are cells that help stop bleeding). Your child may be offered a platelet transfusion
- Aches and pains in the legs or jaw
A common side effect of vincristine (a type of chemotherapy drug)
- Kidney problems
Your child's kidney functioning will be monitored throughout treatment
- Hearing loss of high-pitched sounds
This can be a permanent effect, so your child's hearing will be monitored and the chemotherapy changed if they develop significant hearing loss.

How will we know if chemotherapy has worked?

During and after treatment, your child will be carefully monitored by their health team for any side-effects, but also to check how well the treatment is working, e.g. for any changes to their tumour.

This can be through the use of scans to see whether the tumour is shrinking. Usually Magnetic Resonance Imaging, or 'MRI', is used though sometimes it can be by Computerised Tomography, or 'CT'.

For more information, see Scans in children webpage and fact sheet.

Another way of detecting whether the tumour is responding to treatment is via 'tumour markers' in the blood. A tumour marker is a product that is secreted by tumour cells.

Decreasing levels of tumour markers suggest that the tumour is shrinking. However, only a few types of brain tumour produce measurable markers. Please speak to your child's health team for more information.

Names of common chemotherapy drugs for children

There are around 50 different types of chemotherapy drugs. Names of common chemotherapy drugs used to treat primary brain tumours in children include:

- Cyclophosphamide
- Vincristine
- Cisplatin
- Etoposide
- Carboplatin
- High doses of Methotrexate.

Your child may have a combination of different chemotherapy drugs. There are numerous different combinations, but they often include vincristine.

Combinations of chemotherapy drugs are often referred to as an acronym, using their initials. Your child's health team will be able to explain to you why they have chosen particular chemotherapy drugs for your child.

What are chemotherapy drugs made from?

There are many different types of chemotherapy, which are made from different sources and work in slightly different ways to destroy tumour cells. Drugs are made in a laboratory, but many of them are derived from natural plant extracts.

Resources

Whilst The Brain Tumour Charity cannot recommend any specific resources, you may find the following helpful. Inclusion in this factsheet does not constitute a recommendation or endorsement.

Children's headscarves and hats

The online store 'Not on the high street' sells a range of children's hats and headscarves: bit.ly/10JCInr

Bohemia Fashions headwear

This company sells a range of hats and headscarves in a children' and petite range:

bohemiaheadwear.co.uk or call 01582 750083

Little Princess Trust/ Hero by LPT

These linked charities provide real-hair wigs free of charge to boys and girls who have lost their own hair through cancer treatment.

littleprincesses.org.uk or call 01432 760060

herobylpt.org.uk or call 01432 760060

The ID band company

This company sells children's medical alert bracelets. If your child needs medical assistance at a time when they are unable to tell the doctors about their condition, the bracelet will provide some vital information about this and their treatment:

theidbandco.com/Childrens-ID or call 0800 999 3669

Hammond Drysuits

This company sells 'Hickman line shortie drysuits' to allow your child to go swimming. Please check with your child's medical team before your child goes swimming.

hammond-drysuits.co.uk/hickman-line-shortie-drysuits.html or call 01474 704123

You may also find resources listed in our Helping your child to eat and Radiotherapy in children fact sheets useful.

Disclaimer:

The Brain Tumour Charity provides the details of other organisations for information only. Inclusion in this factsheet does not constitute a recommendation or endorsement.

What if I have further questions or need other support?

You can contact our Information and Support Team in the following ways:

- Call 0808 800 0004 (free from landlines and most mobiles including 3, O2, EE, Virgin and Vodafone)
- Email: support@thebraintumourcharity.org
- Live Chat: Get in touch with us online via thebraintumourcharity.org/live-chat
- Join one or more of our closed Facebook groups: bit.ly/FBSupportGroups
- Website: thebraintumourcharity.org/getsupport

Disclaimer

This resource contains information and general advice. It should not be used as a substitute for personalised advice from a qualified specialist professional. We strive to make sure that the content is accurate and up-to-date, but information can change over time.

Patients must seek advice from their medical teams before beginning or refraining from taking any medication or treatment.

The Brain Tumour Charity does not accept any liability to any person arising from the use of this resource.

About this information resource

The Brain Tumour Charity is proud to have been certified as a provider of high quality health and social care information by The Information Standard – an NHS standard that allows the public to identify reliable and trustworthy sources of information.

Written and edited by our Information and Support Team, the accuracy of medical information in this resource has been verified by leading health professionals specialising in neuro-oncology.

Our information resources have been produced with the assistance of patient and carer representatives and up-to-date, reliable sources of evidence.

We hope that this information will complement the medical advice you have already been given. Please do continue to talk to your medical team if you are worried about any medical issues.

If you would like a list of references for any of our information resources, or would like more information about how we produce them, please contact us.

We welcome your comments on this information resource, so we can improve. Please give us your feedback via our Information and Support Team on **0808 800 0004** or support@thebraintumourcharity.org

About us

The Brain Tumour Charity is at the forefront of the fight to defeat brain tumours and is the only national charity making a difference every day to the lives of people with a brain tumour and their families. We fund pioneering research worldwide, raise awareness of the symptoms and effects of brain tumours and provide support for everyone affected to improve quality of life.

We wouldn't be able to make the progress we have without the incredible input we receive from you, our community.

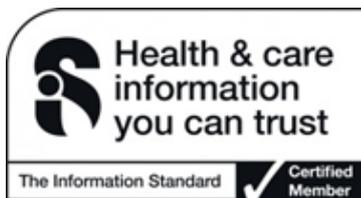
Whether it's reviewing our information resources, campaigning for change, reviewing research proposals or attending cheque presentations, everything you do helps to make the difference.

To find out more about the different ways you can get involved, please visit thebraintumourcharity.org/volunteering

We rely 100% on charitable donations to fund our vital work. If you would like to make a donation, or want to find out about other ways to support us including leaving a gift in your will or fundraising through an event, please get in touch: Visit thebraintumourcharity.org/get-involved, call us on 01252 749043 or email fundraising@thebraintumourcharity.org

Chemotherapy for children

Your notes



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