

Concurrent chemo-radiation with cisplatin and etoposide for non-small cell lung cancer

This leaflet is offered as a guide to you and your family to help understand the treatment that has been suggested for you.

You have recently been diagnosed with non-small cell lung cancer (NSCLC) and you have met with a medical oncology consultant (who specialises in chemotherapy) and a clinical oncologist (who specialises in radiotherapy). They have recommended chemotherapy and radiotherapy treatment.

A way of combining the 2 treatments is to give radiotherapy at the same time as chemotherapy – called 'concurrent' chemo-radiotherapy. The aim of the treatment is to shrink the tumour and occasionally cure the cancer. However, it is not possible to guarantee a cure. The success of the treatment differs from patient to patient. It is therefore not possible to give precise details in this leaflet, but please discuss this with your consultant. This is not a clinical trial but a routine treatment offered at The Christie.

Why are radiotherapy and chemotherapy used together?

Radiotherapy and chemotherapy are given together because they work in different ways to attack cancer cells. Chemotherapy uses drugs to kill cancer cells throughout the body, while radiotherapy uses high-energy radiation to destroy cancer cells in a specific area. By combining these 2 treatments, doctors can target cancer cells both locally and systemically, increasing the chances of killing all cancer cells and preventing the cancer from spreading.

In addition, chemotherapy can make cancer cells more sensitive to radiation, which means that radiotherapy can be more effective when given alongside chemotherapy. This is known as radio-sensitization, and it can help to increase the effectiveness of radiotherapy and reduce the risk of cancer recurrence.

Overall, the combination of radiotherapy and chemotherapy is a powerful treatment option for lung cancer that can improve outcomes and increase the chances of a successful recovery.



Your treatment

Treatment consists of 30-33 treatments of radiotherapy and 2 cycles of chemotherapy. Every Monday during your treatment, you will have a routine blood test.

The radiotherapy treatment will be delivered once a day, Monday to Friday, for 6 weeks. Radiotherapy takes approximately no longer than 30 minutes each time. It will start on day 1 of your treatment.

Chemotherapy will be given throughout week 1 and on the Monday of week 2 and week 5 and the Monday of week 6 of your radiotherapy.

Chemotherapy is given via a 'drip' in your arm at the hospital. It will involve the insertion of a cannula each day you receive your treatment. This will be removed after each dose.

For a full schedule of treatment please refer to the schedule later in this leaflet.

In some cases, patients may be eligible for a further treatment called immunotherapy* once the chemo-radiotherapy has completed. This will be started within 6 weeks of completing the initial treatment. It is given every 4 weeks and will last for 12 months. This will be discussed with you by your consultant.

This treatment can have serious or possibly life-threatening side effects. It is very important that you report side effects straight away. Don't delay, if you feel unwell, please ring The Christie Hotline on **0161 446 3658**. The lines are open 24 hours a day.

Key points

Choice of chemotherapy regime

For concurrent treatment, we have 2 chemotherapy options available. It is important that we choose the most appropriate treatment for you, that is safe and enables you to complete the full treatment.

The optimal treatment requires daily attendance for radiotherapy with no breaks (other than the weekends), therefore it is necessary for your chemotherapy consultant to take a full medical history to avoid causing complications which may cause an interruption to treatment. Occasionally, we may need to review the chemotherapy or even stop the chemotherapy if it is deemed unsafe, with a view to continue with the radiotherapy alone.

Some treatments are toxic to the kidneys so we need to ensure that your kidney function is at the correct level to be able to give this. It may be necessary to perform a more accurate test on your kidneys to establish this. This will be done at The Christie.

Throughout your treatment we will continue to monitor your kidneys but encourage you to continue to drink plenty of fluids (mainly water, juice or squash but tea and coffee is ok).

Risks

Chemotherapy and radiotherapy can cause serious side effects and it is important that you let us know if you develop anything new. There is a potentially serious risk of developing an infection (neutropenic sepsis) and therefore it is important that you have a thermometer and check your temperature daily or if you are feeling unwell.

* Immunotherapy is only given if your biopsy identifies a particular marker, called PDL1, which indicates that it is more likely to respond to this treatment.

If you have a response to your initial concurrent treatment and you have this marker (PDL1), treatment may be offered and would be given every 4 weeks for up to a year.

If you are unwell while having concurrent chemo-radiotherapy, **you must call The Christie Hotline for advice**. If you need to be admitted, we will bring you to The Christie, so that you are able to continue your radiotherapy treatments without interruption. Please ensure you advise The Hotline of this.

The side effects of radiotherapy tend to build throughout treatment and can continue to worsen for a couple of weeks after completing the treatment. You may therefore need more support towards the end of your treatment and for a few weeks afterwards.

Smoking

We strongly advise current smokers to stop smoking whilst having this treatment. If you would like help with stopping smoking, a free, confidential smoking cessation and alcohol advice service is available for patients and carers at The Christie, providing helpful advice and treatment.

Tel: **0161 956 1215** or **07392 278 408**.

Appointments

The Christie treats a large number of patients each day and co-ordination of appointments can be complex when you are having both chemotherapy and radiotherapy, however we try to streamline this as best as possible to help with your pathway. If you are having problems during your treatment, please speak to your lung cancer specialist nurse.

Medications

Some medications may be harmful to take when you are having chemotherapy. Please ask your doctor at The Christie for advice about any other medication you are taking, including nonprescribed medicines, complementary therapies and herbal medicines.

Helpful tips

Schedule

On the first day of your treatment, you will need to attend for a **blood test prior to your radiotherapy**. Your blood results will be needed to be checked prior to your chemotherapy treatment to ensure that they are all within a safe range.

You will also have your first radiotherapy treatment on the first day. The **radiotherapy department is in department 39**. The radiotherapy treatment generally takes approximately 20-30 minutes, however this may be a little longer on the first day.

Chemotherapy is given on the **Oak Road treatment centre on the first floor in department 1**.

Make your way to the waiting area on the ground floor of department 1 and let them know that you have arrived at reception. You will be called upstairs when they are ready for you. If you have any queries related to your chemotherapy appointments, please contact the scheduler on **0161 918 7606/2026**.

Please be aware that, on the days that you have both radiotherapy and chemotherapy, it can be a long day for you. Although we try and stick to times, these cannot be guaranteed so we suggest you bring a book with you and some food and water. Although there are places to purchase these in the hospital, you will not be able to leave the chemotherapy unit while you have chemotherapy being administered. Hot drinks are provided during the day on the chemotherapy unit. You do not need to do anything different from your normal routine prior to attending the hospital. Please therefore eat as usual and take your regular medications, unless you have been specifically told not to by your consultant.

In rare cases, treatment can be delayed due to factors outside our control, we always aim to treat you that day, but if you find you have been waiting for a long time, please speak to reception to get an update. If necessary, you can give your mobile number for the nurses to call you when they are ready. A peaceful and calming place to wait is the conservatory or Maggie's, which can be found on the other side of Wilmslow Road (15 Kinnaird Rd, Manchester M20 4QL).

Nutrition

It is important that you maintain your oral intake during treatment and therefore we will monitor your weight weekly. Some people can experience some side effects that impact on their eating and drinking. In some cases, it may be helpful to alter your foods to a softer diet and you may find supplement drinks helpful. These will be prescribed at the beginning of your treatment. Therefore, please contact your team if you need more. If you find that you are struggling with your diet, **please let us know immediately** so that we can support you with this.

Prehab4Cancer

You will have been referred to this service by your local hospital. This is a free exercise, nutrition and wellbeing scheme designed to help you cope with your treatment and feel better physically and mentally. We encourage you to engage with them, who will tailor their advice to your specific social and physical needs. It aims to optimize your health and wellbeing to be able to tolerate the treatment better.

Transport

Patients are able to drive to their treatments, however we encourage people to have someone to drive them on their first day of chemotherapy as it can be stressful and we cannot predict how you will feel on the day. As patients progress through treatment, fatigue is a common side effect and it can be an extra stress to have to drive. We appreciate that daily treatment can be time consuming and it is not always possible to rely on friends and family, therefore, if you would like to access hospital transport this can be arranged.

What happens after this treatment?

On completion of the concurrent chemo-radiotherapy, you will have a CT scan. This is to assess the effect of the treatment.

You will continue to be reassessed in clinic after completion of the combined treatment. We may see or speak to you as often as every couple of weeks until all side effects have gone.

If you have had a response to treatment on your end of treatment CT scan, we will discuss with you the option of a further treatment with immunotherapy if this is something that we feel you would benefit from.

On completion of all your treatment, you will continue to be followed up. This will broadly be every 3 months in clinic for the first year, 6 monthly until 2 years, and annually thereafter until 5 years. This will be discussed with you at the time. Furthermore, you may be offered the option of further treatment in the future if required.

Possible chemotherapy side effects

Chemotherapy can cause many different side effects. They may be greater with this treatment than if chemotherapy and radiotherapy are given separately. Everyone is different and not everyone gets all the side effects. Most side effects are usually temporary. It is important to tell your hospital doctor or nurse about any side effects so they can be monitored and, where possible, treated.

Kidney function

It is important to monitor how your kidneys are working while you are having treatment. Your kidney function will be closely monitored at each clinic visit. We will do this through routine blood tests or GFR test (most accurate test of kidney function). It is important to drink plenty of fluids (at least 8 cups) the day before and for a few days after chemotherapy.

You will have a routine blood test before the start of each cycle of treatment. Occasionally we may not be able to go ahead with your treatment until your blood counts are back to a safe level. If this happens, your chemotherapy may be delayed a week.

Extravasation

This is when chemotherapy leaks outside the vein. If you develop redness, soreness or pain at the injection site at any time please let us know straightaway.

Flu vaccinations

Is it alright for me to have a flu jab during the time I'm having chemotherapy? It's safe to have a flu jab, but depending on the sort of chemotherapy you have had, it may not give quite as much protection against infection as usual. Some patients may need 2 vaccinations. However, if you're thinking of having any other vaccinations, do check with your Christie doctor first, because some vaccines should be avoided.

COVID-19 vaccinations

It is advised that all patients receive a COVID-19 vaccination when this is offered. Your doctor will discuss with you the best time to have this.

Common side effects (more than 1 in 10)

Increased risk of serious infection

You are vulnerable to infection while you are having chemotherapy. Minor infections can become life-threatening in a matter of hours if left untreated. Symptoms of infection include fever, shivering, sweats, sore throat, diarrhoea, discomfort when you pass urine, cough or breathlessness. We recommend that you use a digital thermometer so you can check your temperature. You can buy one from your local chemist.

If you feel unwell, you have symptoms of an infection or your temperature is 37.5°C or above, or below 36°C contact The Christie Hotline straight away.

To reduce the risk of infection, you will be prescribed antibiotics and injections (Filgrastim), to boost your immune system, whilst you are on your treatment.

Anaemia

You may become anaemic and experience excessive tiredness, feel dizzy, breathless and/or look pale. You may need a blood transfusion.

Increased risk of bleeding

You may get nose bleeds, bruising or bleeding gums. You may need a transfusion of platelets.

Nausea and vomiting (sickness)

The severity of this varies from person to person. Anti-sickness medication will be given along with your chemotherapy to prevent this. You will also be given anti-sickness tablets to take at home. If you continue to feel or be sick, contact your GP or this hospital, because your anti-sickness medication may need to be changed or increased, and you may need extra fluid through a drip.

Hair loss

Hair loss is usually total. The hair falls out gradually 10 to 14 days following your first course of treatment. The time scale varies from person to person. Please remember that this is a temporary side effect and your hair will grow back when your treatment is completed. Very rarely, hair loss can be permanent.

The cancer information centre offers a coping with hair loss service to all patients where support, information and advice will be given. Drop in, contact **0161 446 8100** or email **the-christie.informationcentre@nhs.net**. Information about the wig service can also be found here and vouchers for wigs can also be obtained for eligible patients. The wig room provides a drop in service, please see The Christie leaflet 'The wig fitting service' for further information.

The Maggie's Centre can support you with hair loss by helping you consider the practicalities as well as the emotional impact. You can call into Maggie's Monday to Friday, 9:00am-5:00pm to speak with their professional team. Maggie's provide expert care and support to everyone with cancer and those who love them. Contact Maggie's on **0161 641 4848**, email **manchester@maggiescentres.org** or drop in, their address is The Robert Parfett Building, 15 Kinnaird Road, Manchester, M20 4QL

Strange taste

Occasionally during treatment you may experience a strange taste, sometimes described as metallic or bitter. A strongly flavoured sweet or mint will help to disguise this.

Sore mouth

Your mouth may become sore or dry, or you may notice small mouth ulcers during this treatment. Drinking plenty of fluids and cleaning your teeth regularly and gently with a soft toothbrush can help to reduce the risk of this happening. We can prescribe a mouthwash for you to use during treatment. You can dilute this with water if your mouth is sore. Ask your doctor or nurse for further advice. There is also general mouth care information in the chemotherapy booklet. If you continue to have a sore mouth, please contact The Christie Hotline on **0161 446 3658**.

Loss of appetite

If you experience a loss of appetite, please be sure to tell your doctor or nurse at your next hospital visit. Ask staff for a copy of The Christie booklet 'Eating – help yourself', which has useful ideas about diet when you are having treatment.

Lethargy

Some chemotherapy may make you feel tired and lacking in energy. It can be frustrating when you feel unable to cope with routine tasks. If you do feel tired, take rest and get help with household chores. If necessary, take time off work. Gentle exercise such as walking can be beneficial.

Tinnitus and high frequency hearing loss

You may develop tinnitus (ringing in the ears), this sensation should subside when your treatment finishes. High frequency hearing loss can also occur with this chemotherapy, this may be permanent.

Uncommon side effects (less than 1 in 10)

Upset bowels

You may get upset bowels with this chemotherapy:

Diarrhoea

If this becomes a problem while you are having treatment, anti-diarrhoea tablets can be prescribed by your GP for a temporary period until this is resolved. If the problem persists contact this hospital. Ask the staff for a copy of Eating: help yourself which has useful ideas about diet when you are having treatment.

Constipation

Try to drink plenty of fluids and eat foods high in fibre. Tell your doctor who may prescribe a suitable laxative.

Rare side effects (less than 1 in 100)

Blood clots

During chemotherapy you are more at risk of blood clots in the legs (DVT) or lungs (PE). Occasionally these clots can be life-threatening. To help prevent clots, keep mobile and drink plenty of non-alcoholic fluids.

Tingling and numbness in the fingers or toes

Usually only mild and temporary. Please report these symptoms to your doctor on your next hospital visit. On rare occasions, this may be permanent.

Possible late side effects

Some side effects may become evident only after a number of years. In reaching any decision with you about treatment, the potential benefit you receive from treatment will be weighed against the risks of serious long term side effects to the heart, lungs, kidneys and bone marrow. With some drugs there is also a small but definite risk of developing another cancer. If any of these problems specifically applies to you, the doctor will discuss these with you and note this on your consent form.

Serious and potentially life threatening side effects

In a small proportion of patients, chemotherapy can result in very severe side effects which may rarely result in death. The team caring for you will discuss the risk of these side effects with you.

Possible radiotherapy side effects

Acute side effects are temporary and affect everyone having radiotherapy. They will vary depending on which area is being treated, and your general fitness. They usually develop 10 to 14 days after the first day of your treatment and can last for up to 6 weeks after treatment is complete.

The early side effects of concurrent chemo-radiotherapy may include:

Difficulty in swallowing

Inflammation of the gullet (oesophagitis) can cause discomfort when swallowing (dysphagia). Your doctor can prescribe medicines to alleviate this symptom and the hospital dietician can advise about modifications to your diet and supplements. You should concentrate on maintaining a good fluid intake.

Tiredness

Tiredness related to radiotherapy varies a lot from person to person. You should stay moderately active but avoid making yourself too tired.

Pain

Some pain in the chest in the 24 hours after the first treatment. This is usually mild and settles down fairly quickly.

Cough

Increase in your cough and sputum (spit) which may contain a little blood. Don't worry, this is quite normal. If you are having difficulties with this during treatment, let your doctor know. Coughs can sometimes worsen when treatment finishes.

Shortness of breath

Inflammation of lung tissue (pneumonitis) can cause a cough and a degree of breathlessness during or shortly after radiotherapy. A variant of this side effect can cause troublesome breathlessness about 6 weeks after radiotherapy is completed. In rare circumstances, this may need urgent assessment and could become life-threatening without any treatment. You should ring The Christie Hotline on **0161 446 3658** if you are concerned.

Skin rash

Skin reaction can be caused by radiotherapy treatment, like sunburn. On rare occasions a cream may be needed.

These side effects tend to build up during treatment and are at their worst in the last week of treatment or in the first 2 weeks after treatment is completed. They then recover 3-6 weeks after treatment.

Late side effects of radiotherapy

Some side effects may become evident only after a number of years. However, your doctor can take action to avoid these for most patients, so the potential benefit you receive from treatment should outweigh the risks of serious long term side effects to the heart, lungs, kidneys and bone marrow. With some drugs there is also a small but definite risk of an increased chance of developing another cancer. If any of these problems specifically applies to you, the doctor will discuss these with you and note this on your consent form.

Shortness of breath

Damage to the normal lung tissue may occur from radiotherapy. This can result in shortness of breath and increased risk of infections. Radiotherapy may leave the lung with some scarring (fibrosis). This can mean that your lung does not work quite as well as it did before, and you may notice a slight increase in breathlessness. It may be possible to learn breathing exercises or use medicine to reduce your breathlessness but, in some rare cases, the breathing deterioration can be irreversible.

Persistent difficulty in swallowing

Narrowing of the gullet may need a minor procedure to stretch the gullet (dilatation) or in rare cases surgery. If you experience swallowing difficulties months after completion of the combined treatment, further investigations (gastroscopy – tube into the stomach) may be necessary.

Bone (ribs) weakness

Radiotherapy in rare cases can produce some thinning of the ribs. Following a severe cough, this can result in chest pain and/or minor rib fracture.

Spinal cord damage

Radiotherapy may in extremely rare cases lead to injury of the spinal cord which can cause permanent difficulties in walking and loss of sensation in the lower body. Every effort is made to carefully plan your treatment so as to avoid this problem.

The risk of these late side effects is generally small as the treatment is planned carefully to try to avoid them. If you do have late side effects, they will become noticeable 6-18 months after radiotherapy is completed and are generally permanent.

Sex, contraception and fertility

Protecting your partner and contraception: We recommend that you or your partner use a barrier method of contraception during sexual intercourse while you are having the course of chemotherapy. Chemotherapy is dangerous to unborn babies and this will also protect you and your partner from any chemotherapy drugs that may be present in semen and in the vagina. If you suspect that you may be pregnant please tell your doctor immediately.

Fertility

This chemotherapy may affect your ability to have children. Your doctor or nurse should have discussed this with you. If not, please ask them before you start treatment.

Loss of periods

Due to the effect of chemotherapy on the ovaries, you may find that your periods become irregular or stop. This is more likely in women over the age of 40 when most women will notice some change in their periods. It is less common in women under the age of 40 but does still happen and can result in significant menopausal symptoms (see section below). Even if your periods stop completely during chemotherapy your periods may come back several years later. This means that you may be able to become pregnant even many years after chemotherapy. It is very important to use contraception if you don't want to get pregnant.

Menopausal symptoms

When the ovaries stop working due to chemotherapy or during a natural menopause most women experience symptoms such as hot flushes, sweats (night and day) and vaginal dryness. These hormonal changes can make the vagina feel as though it has shrunk and become less easy to stretch. This is called vaginal atrophy and can result in discomfort, pain on sexual intercourse, itching and recurrent urine infections. If your ovaries don't start to work again the vaginal symptoms can be permanent, although the flushes and sweats tend to reduce and stop over a small number of years. Some women who have already gone through menopause may notice their symptoms worsening for a time after chemotherapy.

The vaginal symptoms can start early and the longer they are left the harder they can be to treat. Please contact your specialist nurse either in clinic or by phone when the symptoms first develop if you would like help. Symptoms can be managed in several ways including gels, essential oil pessaries and sometimes local oestrogen replacement. Macmillan have some helpful advice and guidance on this which you may like to access via their website or helpline. You can also speak to your specialist nurse, or the cancer information centre at The Christie.

Start date:

Chemotherapy regime 1: Concurrent chemo-radiotherapy with cisplatin and etoposide

Treatment is given on Mondays to Fridays. No treatments at weekends

Day/Date	Radiotherapy (approx. 30 mins)		Chemotherapy (approx. 2 hours but allow half a day)		Bloods	Weekly review
		Time		Time		Tel/face-to-face
	1		Cycle 1 Day 1		Pre-treatment	
	2		Cycle 1 Day 2			
	3		Cycle 1 Day 3			
	4		Cycle 1 Day 4			
	5		Cycle 1 Day 5			
	6		Cycle 1 Day 8		Pre-treatment	
	7					
	8					
	9					
	10					
	11				Prior to review	
	12					
	13					
	14					
	15					
	16				Prior to review	
	17					
	18					
	19					
	20				Prior to review	
	21		Cycle 1 Day 1		Pre-treatment	
	22		Cycle 1 Day 2			
	23		Cycle 1 Day 3			
	24		Cycle 1 Day 4			
	25		Cycle 1 Day 5			
	26		Cycle 1 Day 8			
	27				Pre-treatment	
	28					
	29					
	30					

In some instances, you may receive 33 radiotherapy treatments, which will continue into the 7th week of treatment.

Occasionally due to unforeseen circumstances your treatment may start on a different day to the chart, and the team will aim to keep to the schedule where possible and inform you of any planned changes.

Key Contacts

For urgent advice ring The Christie Hotline on **0161 446 3658** (24 hours)

If you have any general questions or concerns about your treatment, please ring the area where you are having treatment:

Administration enquiries (chemotherapy appointments):	0161 918 7606/7610
Chemotherapy nurse (Oak Road Treatment Centre):	0161 918 7171
Lung specialist nurse team:	0161 918 2595

Your doctor’s secretary:		0161
Your consultant is:		
Your hospital number is:		
Your key worker is:		

If you need information in a different format, such as easy read, large print, BSL, braille, email, SMS text or other communication support, please tell your ward or clinic nurse.

The Christie is committed to producing high quality, evidence based information for patients. Our patient information adheres to the principles and quality statements of the Information Standard. If you would like to have details about the sources used please contact **the-christie.patient.information@nhs.net**

For information and advice visit the cancer information centres at Withington, Oldham, Salford or Macclesfield. Opening times can vary, please check before making a special journey.

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Contact The Christie Hotline for
urgent support and specialist advice
The Christie Hotline: 0161 446 3658
Open 24 hours a day, 7 days a week