

Radiotherapy department

Radiotherapy to the whole brain and spine

What is radiotherapy?

Radiotherapy works by damaging dividing cells in our bodies. Because cancer cells are not able to repair themselves as efficiently as normal cells, more cancer cells will be destroyed. However, a small proportion of normal cells will also be damaged, leading to side-effects.

Why do I need treatment to the whole brain and spine?

For some types of brain tumour, for example germ cell tumours, medulloblastoma and occasionally in low grade gliomas, radiotherapy treatment, which may follow chemotherapy or surgery includes treatment to the whole brain and spine to reduce risk of disease recurrence in these areas.

What if I choose not to have the treatment?

Your consultant will discuss whether there are alternatives for your tumour type. For some tumours such as medulloblastoma and germ cell tumours, radiotherapy is essential to cure the tumour. For other tumours, such as low grade glioma, you may have drug treatment options.

What do I need to know about the treatment?

Treatment is given every day, usually on Mondays to Fridays. The whole course of radiotherapy treatment is usually for 5 to 7 weeks (total of 25–35 treatments). Treatment to the whole brain and spine is usually the first phase, which ranges between 13–22 treatments depending on your diagnosis. In the second phase of treatment, you will have additional treatments to where the tumour was or in some cases where the tumour is still present in the brain and/or spine.

As preparation for your radiotherapy treatment, you will have a CT planning scan (and in some cases MR scan as well). You will need to lie very still during treatment. In order to help ensure the accuracy of your position at every treatment, we use a personalised mask to keep your head still and sometimes a bag with polystyrene beads to keep your arms and legs in the same position. Hand grips may also be used to maintain your arm position. Small tattoo marks, which look like dots are placed under your skin surface to help the radiographers position you daily when having treatment. These are done using a small needle. Although these marks are permanent, they do fade over time.

When we are treating the brain, you may see a bright or blue light and might smell a strange odour. This is often very short-lived and only lasts for tens of seconds. If you are experiencing these symptoms and are struggling with the bright or blue light or strong smell, please let your treating radiographers know. We can use aromatherapy and other methods to potentially help you cope better with the symptoms.



Consent

We will ask you to sign a consent form if you agree to accept the treatment which is being offered. You are entitled to request a second opinion from another doctor who specialises in treating this cancer. You can ask your own consultant or your GP to refer you.

You will be asked to confirm that you are not pregnant and that you will not become pregnant during treatment, as this treatment will cause serious harm to an unborn child.

Short term side effects

Most side effects experienced generally settle within 4 to 6 weeks after completing radiotherapy.

Common side effects (more than 1 in 10):

- Tiredness
- Nausea (feeling sick) and/or vomiting (being sick) – we often recommend taking an anti-sickness (ondansetron) prior to treatment each day and if needed regularly throughout the course of radiotherapy.
- Headache
- Hair loss
- Loss of appetite and/or change in taste
- Sore throat – this may affect eating and drinking and you may need a softer diet temporarily. You can take pain relief (e.g. paracetamol liquid) if needed to relieve the pain.
- Anaemia, increased risk of infection, bruising or bleeding due to low blood counts – we monitor your blood levels by doing regular blood tests. Uncommonly, if your red blood count or platelets are quite low, you may need a transfusion. We also advise taking a preventative antibiotic (co-trimoxazole) on Mondays, Wednesdays and Fridays throughout the course of radiotherapy, which should be continued after radiotherapy until advised to stop by your medical team. If you become unwell or have a fever (38°C or more), please contact the Christie Hotline immediately.
- Skin dryness/redness – we recommend using moisturising cream (e.g. Zeroveen) on your scalp or back, which will be supplied to you.

Uncommon side effects (less than 1 in 10):

- Dry cough
- Diarrhoea or constipation (due to taking anti-sickness)
- Blocked ears – your ears may seem fuller or your hearing is less clear
- Tinnitus (ringing in the ears)
- Dryness or watering of the eyes
- Seizures
- Worsening of tumour-related symptoms

Long term side effects

These can develop months to years after treatment and may be permanent and irreversible.

Common side effects (more than 1 in 10):

- Cataracts
- Dryness of both eyes – you may require artificial lubricants.
- Short term memory problems and/or shorter attention span and/or slower information processing speeds.
- Skin changes – you may notice very slight darkening or lightening of skin in the treated area.
- Permanent hair loss/thinning – this depends on the radiation dose for your particular tumour.
- Underactive pituitary gland – radiotherapy can reduce the production of hormones by the pituitary gland, which is a small gland at the base of the skull. Medications may be required to replace the hormones.
- Fertility – this will be discussed with you individually as it depends on your personalised treatment plan.

Uncommon side effects (less than 1 in 20):

- Effect on hearing – you may notice slight reduction to your hearing and/or ringing in your ears. If this occurs, you may require hearing aids.
- Increased risk of stroke – due to radiation exposure to the vessels in the brain, there is an increased risk of having a stroke in the years or decades after treatment. We would advise that you do not smoke and to have your blood pressure and cholesterol levels monitored long term.
- Underactive thyroid gland needing hormone replacement.
- Tumour caused by radiation – there is a small chance you may develop another tumour due to your radiotherapy treatment over the next several decades.

Rare side effects (less than 1 in 100):

- Effect on kidneys – causing high blood pressure or reduced kidney function.
- Injury to the heart
- Spinal cord injury – this may cause weakness or loss of sensation in the arms and/or legs, or loss of control of bladder or bowel.
- Brainstem injury – this can affect a number of functions such as balance, co-ordination, speech, breathing, swallowing, movement and sleep patterns, and can rarely be life-threatening.
- Seizures

Medications

- During your radiotherapy treatment, you will be taking:
- Anti-sickness – usually ondansetron, which can be taken up to 3 times daily. If you are struggling with feeling sick or being sick, you may need additional medication.
- Laxatives – often needed whilst on ondansetron.
- Preventative antibiotic – Co-trimoxazole taken once daily on Mondays, Wednesdays and Fridays only.

Can I continue driving?

Following your diagnosis you must inform DVLA, who will advise whether you can continue driving. Whilst awaiting advice from DVLA, you should not drive.

Contact

If you have any further questions or concerns after reading this leaflet, please discuss them with your consultant or keyworker or specialist nurse.

After treatment

At the end of treatment, you will be provided with an end of treatment summary outlining the treatment you have received and follow-up plan.

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.



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