Prophylactic Cranial Irradiation (PCI) - preventative radiotherapy to the brain
Prophylactic Cranial Irradiation (PCI) is given as part of the treatment of some cancers, most often for patients with a type of cancer known as ‘small cell’. It involves treating the whole of the brain with radiation as a preventative measure. It is recognised that following a good response to chemotherapy there is a risk of cancer developing at a later date in the brain. To try to prevent this PCI is considered for some patients following a full assessment. All the factors of an individual case will be considered when offering this treatment, including other health problems. It may be that radiotherapy is also advised to the origin of the tumour. In this case, both areas can be treated together on a daily basis.

PCI is usually given in 10 treatment sessions over a 2-3 week period.

At your first radiotherapy appointment we will make a device called “a cast or mould”. Each cast is individually made to ensure the cast fits well and is comfortable. Its purpose is to help you stay still and to place the treatment marks onto it rather than your skin. The same cast is used for both for planning and treatment.
To make the cast we use a sheet of plastic net that, when heated in warm water, becomes soft and stretchy. It is then placed onto your head, and takes your shape as it cools. This part of the process takes only a few minutes and is followed by planning (a simple x-ray procedure to define and measure the area to be treated). The total time is usually about 20 minutes. Please refer to our booklet ‘Radiotherapy’ for more information.

This picture shows the thermoplastic mask before and after the moulding of the material to the patient’s face.

Clinical Nurse Specialist (CNS) Service
This member of staff is available to give additional information, advice and support to patients (and carers) who receive radiotherapy for PCI.
General information about the side effects of radiotherapy treatment

The usual pattern for the development of the temporary (short term or acute) side effects is to gradually start 5-10 days after the first treatment. They usually persist and worsen, the effects being most troublesome about 10 days after the first radiotherapy treatment. After this, the healing process begins. The side effects usually settle over the following 2-3 weeks.

You will be reviewed during treatment and given medicines and advice to help you cope.

Possible side effects of (PCI) Prophylactic Cranial Irradiation

**Tiredness**
This is an expected side effect of any radiotherapy treatment and radiotherapy to the brain can be particularly tiring. Tiredness may persist for a number of weeks, but usually it slowly improves. To help you to cope, do only the things that are necessary and plan rest breaks into your routine. Discuss with your radiographers if you have concerns.

**Sickness and Headache**
The treatment can cause slight temporary swelling of the brain tissues which may cause side effects of sickness and headache. Your doctor may prescribe some medication (steroids) to reduce this. If you develop these symptoms during treatment please inform your radiographer as soon as possible. For out of hours help and advice, contact our triage helpline. This service is operational 24 hours a day 7 days a week. The number for this service is located on page 5 of this leaflet.
Drowsiness (somnolence)
This can occur during the period of radiotherapy treatment and also for a time after the treatment has ended. It is usually mild. This period of tiredness is at its worst about two weeks after treatment starts, but gradually begins to improve. It can sometimes get worse again around 4-6 weeks after treatment finishes and will then gradually improve.

Skin reaction and hair loss
The areas of skin within the treatment field may become inflamed (sore) as a result of treatment, with the area around the ears being most troublesome. The skin reaction is likely to start towards the end of your treatment, with the peak of any discomfort about 10 days after it is completed. You should wash your head (and hair if present) using a gentle action, lukewarm water and soap or baby shampoo if applicable. If recent chemotherapy has caused hair loss, and it has started to regrow, the hair will be lost again as a result of this treatment. It usually re-grows. You may want to consider using a wig, you can get information on this from our staff.

Memory loss
It is recognised that some people who have had PCI treatment for small cell cancer may notice their memory isn’t as good as it was. If it is troublesome referral to an occupational therapist can help you find ways to help cope e.g. by using memory aids.

Follow-up
Most people will be seen in the Oncology clinic a few weeks after finishing your radiotherapy. This appointment is likely to be at your local hospital.
Alternatively if you have contact with other teams for ongoing supportive care e.g. District Nurse/Macmillan team staff that visit you at home, consider contacting them and/or your G.P. if you have any concerns.

Macmillan booklets about ‘Coping and Living with Cancer’ and ‘Treatment Side Effects’ are available free of charge. These can be ordered by telephoning 0800 500 800 or by visiting a Macmillan Information Centre (sited in the main entrances of The Clatterbridge Cancer Centre and The Clatterbridge Cancer Centre Liverpool).

Contact details

The Clatterbridge Cancer Centre NHS Foundation Trust
0151 334 1155 or www.clatterbridgecc.nhs.uk

Macmillan Cancer Support
0808 808 0000 or 0151 201 4150 or www.macmillan.org.uk

Macmillan Cancer Information and Support at The Clatterbridge Cancer Centre
0151 482 7722 (Wirral)
0151 514 6411 (Liverpool)

If you have any general enquiries prior to starting your treatment, please contact the Information & Support Radiographer, The Clatterbridge Cancer Centre, Monday to Friday during office hours (9am-5pm) on 0151 482 7889. If you have any concerns during or after treatment contact the Triage help line (24 hours) on 0151 334 1155 bleep 5555.
How we produce our information

All of our leaflets are produced by staff at The Clatterbridge Cancer Centre and this information is not sponsored or influenced in any way. Every effort is made to ensure that the information included in this leaflet is accurate and complete and we hope that it will add to any professional advice you have had. All our leaflets are evidence based where appropriate and they are regularly reviewed and updated. If you are concerned about your health in any way, you should consult your healthcare team.

We rely on a number of sources to gather evidence for our information. All of our information is in line with accepted national or international guidelines where possible. Where no guidelines exist, we rely on other reliable sources such as systematic reviews, published clinical trials data or a consensus review of experts. We also use medical textbooks, journals and government publications.

References for this leaflet can be obtained by telephoning 0151 482 7722.

If you need this leaflet in large print, Braille, audio or different language, please call 0151 482 7722.

If you have a comment, concern, compliment or complaint, please call 0151 482 7927.