



University Hospitals Birmingham
NHS Foundation Trust



Radiotherapy to the Head and Neck

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This booklet is for patients who are having a course of radiotherapy to the head and neck. It describes the planning and treatment procedure and briefly explains the side effects that you may experience. It is intended to be a guide, as details and side effects of treatment will vary from one person to another.

If you have any questions please get in touch with the specialist radiographers or clinical nurse specialists (contact details can be found at the end of this leaflet.)

What is radiotherapy?

Radiotherapy is a treatment which involves precisely targeting high energy X-rays (ionising radiation) at a specific area with the aim of destroying any cancer cells there. In the same way that having a normal X-ray does not hurt, you will not see or feel anything whilst you are having radiotherapy.

Some patients may benefit from having a form of radiotherapy known as Intensity Modulated Radiotherapy (IMRT). This technique permits the better shaping of dose around the tumour and helps to reduce the dose to healthy tissue. For example, this tends to be appropriate when we need to treat both sides of the head and neck yet want to try to reduce the dose to certain tissues within that area in order to minimise long-term side effects, such as a dry mouth.

IMRT treatment can be given on a Tomotherapy machine or linear accelerator and is given daily. Both of these machines are able to take CT images to check that you are in the correct position before delivering treatment each day. CT scans taken during treatment involve a very small additional dose of radiation. However these scans are important to ensure accurate treatment and overall serve to reduce the risk of side effects. These scans can not be used to confirm how well the treatment is working.

It is extremely important that you are not pregnant or become pregnant during your course of radiotherapy. Even a small amount of radiation may damage an unborn foetus.

Why do I need to have radiotherapy?

The team of doctors involved in treating cancers of the head and neck have recommended that you receive a course of radiotherapy. Sometimes people who have radiotherapy will also have chemotherapy and your doctor will have discussed whether this is appropriate in your case.

Are there any alternative treatments to radiotherapy?

In some cases, cancer can also be treated with surgery and you can discuss with your consultants whether any of these options are appropriate for you. Sometimes a combination of these treatments may be recommended.

What are the benefits of radiotherapy?

For most patients, the benefits of radiotherapy are to cure the cancer or improve the symptoms of your cancer if the cancer itself is incurable. Your consultant will discuss this in more detail when you first see them.

If you do decide to have radiotherapy, you will be asked to sign a consent form, stating that you have been informed of the risks and benefits. This does not mean that you cannot change your mind about your treatment choices.

When is radiotherapy given?

Radiotherapy is given every day, Monday to Friday at the radiotherapy department in the Heritage Building, for three to seven weeks. Some days you will have additional appointments as from your second week of treatment you will also be seen weekly in your consultant's review clinic and by a dietitian. You may also need to have some blood tests once a week.

What needs to happen before I start radiotherapy?

Radiotherapy requires appropriate preparation and has to be carefully planned. Prior to commencing the planning process for treatment, a dental assessment will be arranged as dental extractions may be advised before you start radiotherapy treatment.

What needs to happen for my radiotherapy to be planned?

Whilst you are having your radiotherapy, you will need to lie on a couch and wear a plastic mask (sometimes also known as a shell). Your first visit will be to the Mould Room where the mask is made. It will fit over your head and shoulders and attach onto the bed. The mask is needed to ensure that you are in exactly the same position every day so that the treatment can be given very precisely to the correct area.

Making the mask involves warming a sheet of a thermoplastic material so that it softens and can be gently draped over your head and shoulders and moulded to you. The mask then needs to stay in position for about ten minutes whilst it hardens and sets. The plastic is warm and feels a little like having a warm flannel over your face. The plastic has small holes in it so that you can still breathe easily.

After the mask is made, usually on the same day, you will have a CT scan, which is done with the mask on. The radiographers will put some marks on the mask so that when you return for your radiotherapy treatment it will be possible to have you lying in exactly the same position. The CT scan is normally done with contrast (dye) which will involve an injection into a vein. Before this injection is done, the radiographers will ask you some questions and if you have ever had a reaction to contrast before then please let them know. The contrast is used as it shows some

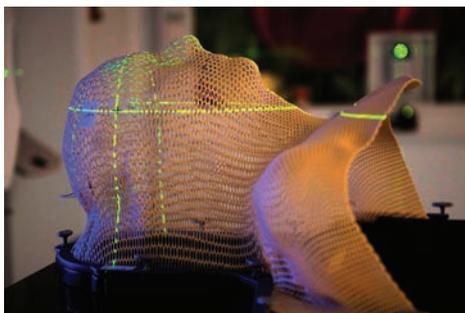
blood vessels and organs very clearly which makes it easier for the doctor to plan your radiotherapy.

After the scan the radiographers may ask permission to make one or two tiny permanent tattoos (small dots) which are the size of a small freckle. The tattoos are used to ensure you lie in the correct position each day and allow you to wash. Not all patients need a tattoo as it depends on the area to be treated and the type of mask you have made. Any pen marks on your skin can be washed off when you get home.

You will be given an appointment for your first radiotherapy treatment before you go home. Treatment will start usually three weeks after your CT appointment to allow time for planning. The 3D images from your scan will be used to create an individualised treatment plan for you.



Linear accelerator



What happens when I come for radiotherapy?

Before you start treatment, a radiographer will counsel you and explain the treatment procedure. Please feel free to ask any questions you may have about your treatment, side effects and appointment times. You may be asked to change into a gown to ensure your mask fits well and there is no clothing in the area to be treated. If you are uncomfortable changing into a gown, please let the team know.

When you go into the treatment room the radiographers will explain what is going to happen and then ask you to lie on the treatment couch where they will fit your mask in the same position as you were in for your planning CT scan. The mask does need to be a close fit to ensure accuracy but it should not be painful. The radiographers will then move the treatment couch closer to the treatment machine.

Once the radiographers have got you and the machine in the correct position for treatment they will leave the room to switch the machine on. They can hear you on the intercom and see you at all times on the television cameras. You will be asked to stay as still as possible so that the treatment is given in the correct position but if you need assistance just call out.

The treatment rooms are monitored during your preparation for treatment, positioning and treatment delivery by television cameras. This is part of ensuring the accuracy of your treatment and your safety and wellbeing in the rooms at all times. We assure you that the camera feed is live and it is not possible to make a recording. The images are viewable on screens situated in the machine control areas. The control areas are only accessed by authorised radiotherapy staff, some of whom may not be directly involved in your care at that time. If you have any concerns about your privacy and dignity then please do not hesitate to highlight your concerns during the information discussion with the radiographers at your first treatment appointment.

X-ray images will be taken to verify your position before treatment is started and the radiographers may come in and out of the room to adjust your position. The treatment machine will move around you as treatment can be delivered from lots of different angles. It does not touch you at any point during your treatment. The machine will only be on for a few minutes at a time as additional images will be taken to ensure treatment is delivered accurately. You do not feel anything but may hear the machine buzzing on and off and see the machine moving. Your first treatment will be slightly longer due to additional checks and measurements and the total time that you are lying on the bed will be between 10 to 30 minutes approximately.

What happens if I am having chemotherapy and radiotherapy?

Not every patient who is receiving radiotherapy will also be having chemotherapy. If you are having chemotherapy, this is not given every day. There are several different types of chemotherapy or drug treatments and these vary in when they are given. Your doctor will have discussed which one is the best one for you.

Common scenarios are:

| Your schedule | Radiotherapy Schedule | Chemotherapy? | Chemotherapy in the week prior to radiotherapy? |
|---------------|-------------------------|----------------------------------|---|
| | Three weeks and one day | No | No |
| | Four weeks | No | No |
| | Six weeks | No | No |
| | Four weeks | Yes, once every week (Cetuximab) | Yes (Cetuximab) |

| Your schedule | Radiotherapy Schedule | Chemotherapy? | Chemotherapy in the week prior to radiotherapy? |
|---------------|-----------------------|--|---|
| | Four weeks | Yes (Carboplatin), once during the first week and once during the fourth week | No |
| | Six weeks | Yes (Cisplatin), once a week for the first five weeks | No |
| | Six weeks | Yes (Cisplatin), as an inpatient, once during the first week and once during the fourth or fifth week | No |
| | Seven weeks | Yes (Cisplatin), once a week for the first five weeks | |
| | Seven weeks | Yes (Cisplatin), as an inpatient, once during the first week, once during the fourth week and once during the seventh week | |
| | Seven weeks | Yes, once every week (Cetuximab) | Yes (Cetuximab) |
| | Other | | |

Unless specified, all chemotherapy is given as an outpatient on the chemotherapy day unit.

There are also several head and neck trials running which involve slightly different treatment durations and chemotherapy regimes. If any of these are applicable to you, then your doctor and a research radiographer or research nurse will discuss them with you and ask if you are interested in participating.

What short-term side effects may occur during my radiotherapy treatment?

Whilst you are having your radiotherapy, you will experience some side effects. These will not start immediately but will happen gradually and build up. These side effects can include:

- Tiredness
- A sore mouth which can cause pain and difficulty swallowing
- An altered sense of taste
- Skin reddening and soreness
- Thickened mucous and saliva secretions
- Hair loss to the area near to where the radiotherapy is delivered

The side effects may also include hearing loss, severe pain that requires the use of strong analgesia and infections that could be life-threatening. The symptoms are typically worst at the end of treatment and the period immediately afterwards. Although these side effects are common with all forms of radiotherapy, they start to gradually improve a few weeks after treatment has finished.

You will be seen daily by the radiographers when you come for your treatment and on a regular basis by your doctors and other members of the team, such as dietitians. As with any side effects, it is important that you mention them to the radiographers and doctors so that they can provide advice, and if necessary, prescriptions to help you manage these side effects.

What are the long-term side effects of radiotherapy?

Long-term side effects are classed as those that are present more than three months after radiotherapy. Severe effects are relatively infrequent but can include:

- Bone damage
- Hair loss
- Skin and cosmetic changes to the area where the radiotherapy was given
- Dental decay
- Difficulty in swallowing
- Dry mouth
- Hoarse voice

A number of people will experience long-term difficulties with eating and drinking due to a dry mouth, poor appetite or poor swallowing. Some may only be able to eat a pureed or soft diet, or take a long time to eat a meal; a small number of patients will require a permanent feeding tube.

Uncommon side effects (less than one in 100) include nerve damage and associated disability. Ionising radiation carries a small risk of causing another cancer many years after treatment however this risk is extremely small compared to other factors, such as tobacco.

Tips for caring for your mouth and teeth during radiotherapy

Here are some tips for looking after your mouth and teeth:

- Brush your teeth (and dentures) with a small, soft toothbrush after each meal
- Use fluoride toothpaste and fluoride gel
- Use regular mouthwashes which will be prescribed by your oncology team
- Take sips of water and rinse your mouth regularly during the day to keep your mouth moist
- Avoid sugary foods or sugar in drinks in between meals
- Avoid acidic drinks, such as fizzy drinks and fruit juices
- Do jaw exercises as advised by your specialist to prevent jaw stiffness

General washing and skin care during your radiotherapy

You may bath and shower as normal during treatment but do not have the water too hot and avoid soaking the area for long periods. You can continue to use your normal shower/bath, moisturiser products and deodorant but if your skin does become irritated it is advisable to stop using that product and ask the radiographers for advice.

Moisturising

Moisturising your skin can help if your skin becomes dry and itchy. You may use E45 or your normal moisturiser. Apply any cream sparingly, gently smooth it on and avoid rubbing the skin.

Hair removal

Please avoid shaving or using any hair removal products. Radiotherapy does cause hair loss in the area treated so if you have a beard you may wish to consider shaving it off prior to starting radiotherapy.

Sun exposure

Avoid exposing the treatment area to the sun during treatment and until all (if any) skin reactions have gone.

Skin that has been treated with radiotherapy will be more sensitive to direct sunlight exposure. Once your treatment has finished, you should always protect the area by using at least SPF 50 sun block cream/lotion.

Attending Radiotherapy department

Train: University station is the closest train station to the hospital and is only a five to 10 minute walk away. There is also a shuttle bus running from the train station to the Cancer Centre.

Driving: Car parking at QEHB is free for patients attending for daily radiotherapy treatment. Radiotherapy patients are advised to use **Car Park D** which is located directly opposite the doors to the Cancer Centre, Heritage Building. Post code for your Sat Nav is **B15 2TH**.

Please take a ticket to enter the car park and this will be exchanged for a prepaid one so you may exit the car park without charge.

This has only been negotiated for patients who are attending for radiotherapy planning or treatment appointments so unfortunately the radiographers will not be able to give you a ticket if you are attending for a follow-up appointment.

Contact numbers

| | |
|----------------------------------|-----------------------------|
| Radiotherapy Appointments Office | 0121 371 3565 / 3564 |
| Radiotherapy Reception | 0121 371 5081 |

Contact details

Head and Neck radiographer:

Radiotherapy dietitian:

Clinical nurse specialists:

Radiotherapy Department
Cancer Centre
Heritage Building (Queen Elizabeth Hospital)
Mindelsohn Way, Edgbaston
Birmingham B15 2TH
Telephone: 0121 627 2000