

Dr Russell Burcombe  

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Consultant Oncologist

## Breast Cancer Radiotherapy: Side Effects and Management

We hope this leaflet will help you understand the reasons for, process of and side effects that may occur when having external radiotherapy for breast cancer.

It also explains the best management of these side effects.

If you would like to speak to one of the radiotherapy team please feel free to contact them during or after your treatment.

The **Breast Cancer Kent Patient Journey App** (available for download on the App Store or Google Play) is a helpful resource. Search “Patient Journey App” to download and then select “Breast Cancer Kent”.

You may find it helpful to view a short film showing breast radiotherapy: search [www.youtube.com](http://www.youtube.com) for ‘Kent Oncology’.

## Radiotherapy for breast cancer

When recommending radiotherapy, your oncologist will have taken into account the risks and benefits of the treatment. Although there can be side effects, it is felt that the advantages for you will outweigh the disadvantages.

### Which areas will be treated?

Your treatment plan may include radiotherapy to the **breast** or **chest wall** and for some people may also include lymph nodes in the **supraclavicular fossa** (above the breast, behind the collar bone), the **upper axilla** (armpit) and the **internal mammary chain** (behind the breast bone).

### What is radiotherapy?

Radiotherapy uses radiation (high energy x-rays) to treat cancer. The radiation will only affect cells within the treatment area, killing the cancer cells but temporarily damaging normal healthy cells, which recover.

Side effects of radiotherapy are isolated to the area being treated. Radiotherapy does not make you radioactive; it is safe to be around other people throughout your treatment, including children.

Treatment is given in small daily doses (fractions) over a number of days/weeks. Treatment is given on weekdays only (Monday to Friday) with a break at the weekend.

Most patients now have 5 daily treatments, though sometimes longer courses (up to 20 visits) may be required. Your oncologist will prescribe the amount of radiation needed and tell you how many treatments you will need. The treatment won't necessarily start on a Monday.

### Before treatment

**If you have a pacemaker please tell your doctor as soon as possible**, as you will need to have a pacemaker check before your radiotherapy treatment.

**If you have a portacath in place** on the side radiotherapy is going to be administered, it will need to be removed before treatment starts.

Fluid sometimes builds up around the scar in the breast or under the armpit. This is called a seroma. Significant accumulations of fluid can disrupt the measurements required to ensure accurate delivery of the radiotherapy so **if there is a large seroma it may need to be drained, potentially delaying the start of the treatment.**

**It is important that you attend all treatment appointments.**

**You should not have radiotherapy if there is any chance you may be pregnant.**

## Overview of the treatment pathway

### Treatment consent

At your outpatient appointment, your doctor or specialist radiographer will discuss the risks and benefits of having a course of radiotherapy. If you wish to proceed, you will need to **sign a consent form** agreeing to have treatment. You may decide that you do not want to have radiotherapy; if so, you might want to talk again with your doctor or specialist radiographer.

## Radiotherapy planning CT scan (30 minutes)

The first visit will be for a CT scan, usually within 1 week of signing consent. You will need to remove all of your clothing above the waist. We will provide you with a gown. You will need to lie face up on the CT table with your hands supported above your head. The radiographers will make you as comfortable as possible.

A radiographer may place some temporary pen marks on your chest and tape some markers to your skin. These will be removed when the scan is complete. The scan only takes a few minutes and the radiographers are watching you at all times from outside of the room. **You will not require any permanent ink marks on the skin.**

No contrast or dye injection is required for the scan.

The reconstructed images from the CT scan provide a **3-dimensional image** of your chest which is then used to accurately plan your radiotherapy.

You are likely to be treated in 'breath hold' to minimise side effects. Please see the sections below on 'Avoiding radiation to the heart' and 'How can I prepare for DIBH'.

## Radiotherapy plan

Your radiotherapy plan is a **personalised design of your radiation treatment** based on the planning CT scan. A team of doctors, radiographers and physicists work together to decide where the treatment needs to be directed, avoiding as much healthy tissue as possible. You will usually start radiotherapy within **1 week** of having the CT planning scan.

## Radiotherapy visits (approximately 10-20 minutes per visit)

You will lie on the treatment table, which will be set up in the same way as when you had the CT scan. You should relax and stay still. The treatment is given by a machine called a **linear accelerator**, or '**linac**'.

The room lights will be dimmed so the radiographers can see the red laser lights that help them to position you correctly. This may take some time, please try to relax. You will hear the machine move around you; it will come close but will not touch you. You will not be surrounded or feel enclosed by the machine.

Once you are in the right position, the radiographers will leave the room. You will be alone during your treatment but the radiographers will be watching you at all times on closed circuit television (CCTV). If you need assistance at any point, just wave a hand and the radiographers can immediately return to the room.

A mini CT scan will be taken prior to each treatment to ensure that the treatment is delivered accurately. When the team are happy with the position you may feel the bed move slightly ready for your treatment. The machine will move around you while you lie still. **Beams of treatment** are delivered from different angles. Each beam lasts around 20-30 seconds.

**You will not see or feel anything when the radiotherapy is in progress but you will hear the machine making a 'buzzing' noise.** When the treatment has finished the radiographers will come back into the room. Please remain still, they will tell you when it is safe to sit up and get off the table.

## What are the side effects of radiotherapy for breast cancer?

You may experience some side effects, usually towards the end of the course of treatment and during the first few weeks after treatment has finished. Your doctor or specialist radiographer will discuss these when you consent to treatment.

Whilst we cannot prevent side effects, we can help you to manage them. Side effects may require you to make some adjustments to your normal life, but most are temporary and will gradually disappear after a few weeks.

Side effects that occur during your radiotherapy are called early (or acute) side effects. They usually begin to occur a week or two after your treatment starts. If you only require 5 treatments, side effects may not appear until after the treatment has finished. Side effects are usually at their worst **1-2 weeks** after your radiotherapy finishes. They then gradually improve. By **2 months** after completion of treatment most have resolved or at least improved considerably.

Early side effects affect all patients, but the severity can vary between individuals.

Late or long term side effects may occur months to years after the treatment has finished and are rare.

### Possible early side effects

Expected (more than 50 per 100 patients)

#### **Tiredness (fatigue)**

You may feel tired during or after your treatment. This can be worse if you have also had surgery or chemotherapy. The tiredness may affect what you feel able to do. The journey to hospital can be tiring. However, most people find they can manage their daily tasks as usual and some continue to work full time.

The sense of fatigue will slowly settle over a few weeks or months once treatment is completed.

Common (10-50 per 100 patients)

#### **Skin changes**

You may notice some **redness** (like sunburn), increased **darkening** (pigmentation) and **tenderness** or **itching** of the skin in the treated area. In a few people the skin under the breast or in the lower neck might blister and the area can become moist and weepy. If this happens, the skin will usually be fully healed within 4 weeks. Increased pigmentation may take some time to resolve. The skin returns to a normal colour in most patients.

Your skin reaction can depend on:

- **Your type of skin** and the **size and shape of your breast**
- If you received radiotherapy to areas where your **skin folds**, e.g. the curve under the breast and under the arm
- If you have **diabetes or heart disease**
- If you are a **smoker** (this can affect the oxygen levels in your skin).

**Less common** (fewer than 10 per 100 patients)

### **Swelling (oedema) of the breast**

During and after treatment you may notice that your breast or chest area appears swollen and feels uncomfortable. This usually settles within a few weeks.

### **Pain in the breast area**

Occasionally you may have aches, 'twinges' or sharp pains in the breast area, particularly in the area of the scar. Although these are usually mild, they can continue for some time after treatment is finished. In some cases they can last for months or even years, but they usually become milder and less frequent over time.

**Rare** (fewer than 1 per 100 patients)

### **Dry cough and shortness of breath**

Temporary inflammation of the lung behind the breast and ribs may cause a short term cough or mild breathlessness. This usually settles without the need for any treatment and does not cause long term lung damage.

### **Dry / sore throat**

Radiotherapy to the lymph nodes in the supraclavicular fossa (lower neck) can cause a dry or sore throat for a short time. Very rarely you may experience some discomfort when swallowing. Please inform the radiographers if this happens as it can be managed with pain medication.

## **Possible late side effects**

**Common** (10 to 50 per 100 patients)

### **Cosmetic changes in breast size, shape and colour**

After treatment the breast may change in size or shape becoming firmer, smaller and look slightly different to before. The skin in the treatment area may be lighter or darker and the skin may feel thicker.

### **Adverse cosmetic impact on reconstruction**

Radiotherapy may cause scar tissue and adversely affect the cosmetic result of a reconstruction, particularly if you have an implant in place. If required, surgery may be offered to improve the cosmetic appearance of the reconstruction.

**Less common** (fewer than 10 per 100 patients)

### **Chest wall or breast tenderness**

The breast or chest wall may feel tender long term after treatment.

### **Shoulder stiffness**

If your shoulder becomes stiff after radiotherapy you may be referred for physiotherapy.

### **Lymphoedema (swelling) of the arm**

A build-up of lymph fluid in the arm can occur after surgery or radiotherapy to the lymph nodes in the armpit and behind the collar bone. The arm, on the side where radiotherapy or surgery was performed, may swell and feel uncomfortable and heavy. This is a long-term condition; if it occurs it can be controlled with appropriate treatment but will never completely go away. More information is available from your specialist radiographer or breast care nurse.

### **Skin changes**

Tiny broken blood vessels (telangiectasia) may become visible under the skin; if they occur they can be permanent.

### **Hypothyroidism (under-active thyroid gland)**

This may occur if your radiotherapy has included the lower neck area. It can be easily corrected with medication.

**Rare** (fewer than 1 per 100 patients)

### **Fibrosis (scarring) of the underlying lung**

Sometimes a small section of lung behind the breast can become scarred after radiotherapy. This is extremely uncommon and rarely causes any symptoms but it may be seen on x-rays or scans you might have after treatment.

### **Nerve complications**

Very rarely, radiotherapy to the area behind the collar bone may cause damage to the nerves in the arm. This can result in tingling, numbness, pain, weakness and possibly some loss of movement.

### **A different cancer in the treatment area**

In exceptional cases a new cancer, unrelated to your breast cancer, may develop in the treatment area many years after radiotherapy.

### **Avoiding radiation to the heart**

In the past, heart problems sometimes arose many years after radiotherapy to the left breast or chest wall. Nowadays a technique called Deep Inspiration Breath Hold (DIBH) is used when needed to minimise the radiation dose to the heart.

Patients having radiotherapy to the internal mammary chain lymph nodes are always treated using DIBH. Other cases will be selected for DIBH if an excessive amount of heart would otherwise be in the treatment field. Not everyone needs this technique; your doctor or specialist radiographer will advise if DIBH is required.

If you require DIBH you will need to hold your breath for a short time when you have your CT scan and for each of your radiotherapy treatments, usually for around **20-30 seconds**. Holding your breath inflates the lungs and pushes the heart away from your chest wall and away from the area being treated. This helps minimise potential radiation dose to the heart and lungs.

### **How can I prepare for DIBH?**

You do not need to do any specific preparation but you might find it helpful to practise holding your breath in the treatment position, lying on your back with your arms raised above your head for 20-30 seconds at a time to get used to the sensation.

The '**Respire**' website ([www.respire.org.uk](http://www.respire.org.uk)) contains a series of useful resources to explain the process and help you practice breath hold.

If you are unable to achieve breath hold your radiotherapy will be given while breathing normally. Your radiotherapy plan will be carefully designed to shield your heart from the radiation beam as much as possible.

The risk of a heart related event following radiotherapy is very small and the benefit of treatment usually outweighs any small risk.

## Radiotherapy which includes the internal mammary chain (IMC) lymph nodes

If your radiotherapy needs to include internal mammary chain lymph nodes (which lie behind the breast bone) it will be impossible for your radiotherapy plan to avoid part of the opposite breast.

In the rare situation where a second breast cancer is found in this opposite breast some years later, it may be difficult or impossible to safely give radiotherapy to that area and a mastectomy would likely be recommended.

## How should I look after my skin during radiotherapy?

**Washing and bathing:** make sure the water is not too hot; wash the treated skin gently and with products you would normally use. Gently pat the skin dry.

**Deodorants/sprays:** you may use the deodorant you would normally use unless it irritates your skin; stop if your skin blisters or peels in the area you apply it. Unscented deodorants without aluminium are popular.

**Wear loose fitting natural fibre clothing** next to the skin, such as cotton or silk. If you usually wear a bra you may prefer not to.

**Use a moisturiser frequently:** gently smooth it onto your skin until it is absorbed. The aim is to keep your skin supple.

**We will supply you with Flamigel**, to be applied 2 - 3 times daily. If you prefer, you can use a moisturiser of your own choice but please check with the radiographers before using it.

You do not need to wipe your moisturiser off before receiving treatment.

**Do not apply anything to the skin immediately before treatment.**

Please **stop using moisturiser if it irritates your skin.**

**If your skin blisters or peels, stop using moisturiser in that area** and ask the radiographers for advice.

You may go swimming if your skin is NOT blistered or peeling: it is best to shower immediately afterwards to wash off the chlorine and then apply moisturiser. Please stop if swimming irritates your skin.

Your radiographers will advise how to manage your skin if it blisters and breaks down, using special dressings if appropriate. If you have already finished radiotherapy when this happens, please contact your specialist radiographer by telephone for advice.

**Keep notes of any changes to your skin** so that you can share these with your radiographers. Please tell them if your skin reaction is painful, so they can recommend pain relief. Talk to them about any worries you have.

After finishing treatment you may be aware of your skin reaction worsening for the next **10-14 days**. Continue with the recommended skin care advice. Most patients find that their skin has improved around **4 weeks** after treatment. **If skin has blistered or peeled it may take longer to heal.**

**Please avoid:**

- **Rubbing the area.**
- **Using sticky dressings** (non-adhesive silicone dressings are advised).
- **Shaving and hair removal products** under the arm.
- **Perfumes and hair dye** on or close to the treated area.
- **Heating and cooling pads** on the treated area.
- **Exposing the treated area to direct sunlight:** cover up with clothing. Continue to protect the treated area from the sun for at least **1 year** after you have finished treatment. As your skin will be more sensitive, use sunscreen with SPF 50.

**Stopping smoking, staying well hydrated, keeping active and following a balanced and nutritional diet** will also help to keep your skin healthy.

**Treatment review**

You will be seen by your radiographers during treatment. They will support you through radiotherapy and help you manage any side effects.



## Frequently Asked Questions

### **Will I be able to work during treatment?**

Tiredness (also referred to as fatigue) is common during radiotherapy. You may need to reduce the length of your working day but many patients are able to work throughout their treatment.

### **Why do I need to have a photograph taken?**

A photograph of your face will be taken to aid patient identification within the treatment centre. You may have a photograph of the treatment area taken to aid accurate delivery of the treatment.

You will always be asked for your permission before any photographs are taken.

### **Can I take my usual medicines?**

Yes, you can continue to take all prescription medicines safely during radiotherapy.

It's important to tell your oncologist about any vitamin and mineral supplements that are bought over the counter. There is some uncertainty about how safe it is to take vitamins, particularly high-dose antioxidants (including vitamins A, C and E, Co-enzyme Q10 and selenium) during radiotherapy, so these are best avoided.

### **Will I be radioactive during treatment?**

No. External beam linac radiotherapy does not make you radioactive. You can safely mix with other people, including children, at any time during a course of treatment.

### **When will I have a follow-up appointment?**

You will receive a follow-up telephone call from the radiographer staff a couple of weeks after the treatment is complete.

Patients are seen in clinic by the oncologist about 4-6 weeks after the last radiotherapy session. This provides an opportunity to make sure any side effects have settled, review any new symptoms and ask any questions you might have.

## If you might be pregnant

Radiotherapy is potentially harmful to a developing baby, particularly in the first three months of pregnancy. You should not fall pregnant shortly before or during radiotherapy.

### **Please let your radiographer or doctor know if you think you might be pregnant.**

All female patients up to the age of 56 will be asked to confirm their pregnancy status before the first planning session.

**Further information and advice can be obtained from:**

**Macmillan Cancer Support**

Provide practical, medical and financial information

☎ 0808 808 0000

Website: [www.macmillan.org.uk](http://www.macmillan.org.uk)

**Cancer Research UK**

General information about cancer, treatment and clinical trials.

☎ 0808 800 4040

Website: [www.cancerresearchuk.org](http://www.cancerresearchuk.org)

**Breast Cancer Now: The research & care charity**

The UK's largest breast cancer charity: involved in research, awareness and support for anyone affected by breast cancer.

☎ 0808 800 4040.

Website: [www.breastcancernow.org](http://www.breastcancernow.org)

**GenesisCare Maidstone**

01732 207000

Website: [www.genescare.co.uk](http://www.genescare.co.uk)

**Please use this space to write any notes or questions you may have.**

Your Breast Care Nurse is: .....