

Radiotherapy department

# Deep Inspiration Breath Hold (DIBH) using Surface Guided Radiotherapy (SGRT)

## Introduction

This leaflet is for patients who have been offered radiotherapy using Deep Inspiration Breath hold technique (DIBH) and Surface guided Radiotherapy (SGRT). This technique is mainly used for patients receiving radiotherapy to the left breast or chest wall. Please read this leaflet alongside the information booklet 'Radiotherapy after breast surgery – a guide for patient and carers'.

## What is Deep Inspiration Breath Hold (DIBH)?

DIBH is a method of radiotherapy delivery, whereby you will be required to hold your breath during the radiotherapy planning scan and during each radiotherapy treatment.

## Why should I have DIBH?

The action of holding your breath inflates your lungs. This creates a gap between your heart and your breast/chest wall. This can allow us to treat your left breast/chest wall whilst minimising the dose to your heart. All left sided breast/chest wall patients will be considered for DIBH although not everyone's heart is close to the treatment area, so DIBH may not be necessary.

## Are there any alternatives?

The alternative to DIBH is to receive treatment while breathing normally. The heart will be shielded from the radiation field as much as possible using a different method if your heart is close to the treatment area.

## What will I need to do?

In order to receive radiotherapy using the DIBH technique you will need to be able to take a deep breath in and hold for about 20–30 seconds. You will be required to do this several times and each breath needs to be consistent. We will give you breaks between each breath hold to allow you to catch your breath.



## What can I do to prepare for DIBH?

The week before attending for your radiotherapy planning scan we ask that you practice holding your breath.

When practicing you should be lying down. Take a deep breath in through your nose and hold for 30 seconds. Try to remain as relaxed as possible and do not hunch or tense your shoulders and do not arch your back.

Practice this 3–4 times in a row, a few times a day. With practice you may find your ability to hold your breath increases.

Taking a breath in through your nose is preferred, however if there is a reason you are unable to breathe through your nose please let the radiographers know when you attend for your CT scan.

We ask that you to do these exercises the week before your radiotherapy planning scan and during the period between your scan and when your treatment starts.

## What can I expect at the radiotherapy planning scan appointment?

Treatment planning will be done on a CT planning scanner. When you attend this appointment the radiographers will explain exactly what will happen before starting the procedure. You will be asked to remove all your clothing from the top half of your body.

The radiographers will position you on the couch on a special inclined board. Your arm/arms will be raised above your head and supported on special arm rests. When in the correct position the radiographers will give you instructions regarding your breathing and breath-hold. They will coach you into a 30 second breath-hold and monitor. Further instructions will be given if changes to your breath-hold are required. This will be repeated at least 3 times to ensure your breath hold position is consistent.

Once the radiographers are happy that you are achieving consistent breaths they will proceed to acquire the radiotherapy planning scans.

The 1st scan is taken with you breathing normally. The 2nd scan will be taken whilst you are holding your breath. The radiographer instruct you when to breathe in.

You should not worry if it is decided not to proceed with DIBH at this appointment. There are other methods available to minimise the dose to the heart.

RESPIRE ([respire.org.uk](http://respire.org.uk)) is an online resource that contains relaxation videos and videos that provide further detail on practicing DIBH. If you want to learn more about DIBH, experience difficulty holding your breath or are anxious about your radiotherapy appointment, we recommend using these videos that can be accessed on any PC, tablet or phone.

## What happens during the treatment appointments?

When you attend for your first radiotherapy treatment appointment a radiographer will discuss what to expect during this appointment and the rest of your treatment appointments.

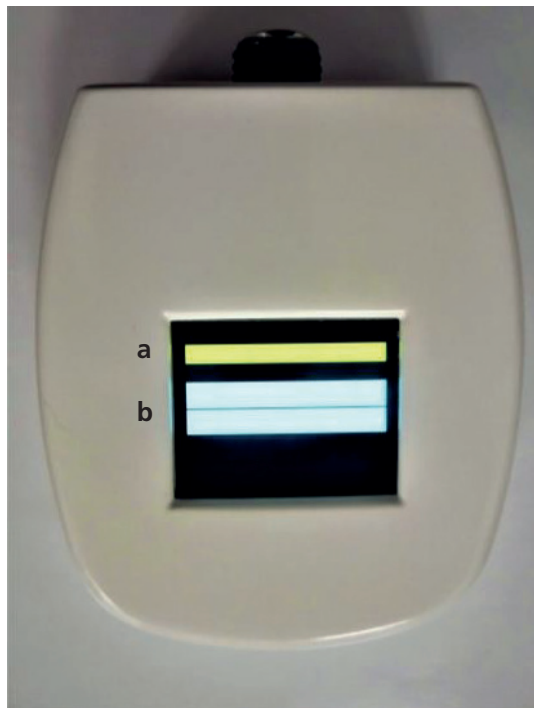
You will be asked to remove all the clothing from the top half of your body. You will then be positioned in the same way as you were for the radiotherapy planning scan.

The radiographers will then use the Surface Guided Radiotherapy (SGRT) cameras mounted to the ceiling to help them get you in the same position you were in for the CT planning scan. Red lights will be projected onto your skin. These monitor the surface of your breast/chest wall.

Initially the radiographers will position you while you are breathing normally. When they are happy with your position they will get you to take a breath in, the same way you did at the CT scan. The SGRT cameras will allow the radiographers to check you reach exactly the same breath-hold position. This camera only monitors your breast/chest wall surface position and does not record you.

There will be a small screen positioned in front of you to help you visualise your breathing. The radiographers will explain how to use this screen to help you achieve the breath hold position.

Picture 1



Picture 2



The coloured bar represents your breathing and will move as you breath in and out (a). When breathing normally the screen will appear as in picture 1 with a yellow bar.

When entering into breath-hold the bar will move into the white box (b) and turn green (c), indicating you have breathed in correctly. The radiographers will guide you through this.

The radiographers will position the machine and ask you to do a couple of breath holds while they are checking your position. When they are happy with your position the radiographers will leave the room but will be watching you on a CCTV monitor (the CCTV image feed is live and only viewable on a screen at the switch on terminal to help the radiographers to monitor your position, it is not a recording device). They will communicate over an intercom when to take a deep breath in and when to breathe normally.

When you are in the correct breath hold position the machine will start delivering the radiotherapy treatment. If you need to breathe away normally the machine will automatically stop.

To complete the radiotherapy session you will need to go in and out of breath-hold several times and the radiographers will guide you. Each session should take about 20–30 minutes.

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.

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



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