



East Suffolk and
North Essex
NHS Foundation Trust

Deep inspiration breath hold technique for radiotherapy

***Radiotherapy Department
Colchester Hospital
Tel: 01206 745055***



What is deep inspiration breath hold?

This is a technique used during radiotherapy where you hold your breath during your planning computerised tomography (CT) scan and during your radiotherapy treatment for approximately 20 seconds at a time.

Why would this be recommended for me?

The action of holding your breath inflates your lungs and can push your heart away from your chest wall and away from the area being treated. This may minimise potential radiation damage to your heart. We only use this technique for patients when their heart may be close to the treatment area.

How can I prepare for breath hold?

The RESPIRE Breath Hold Training website at www.respire.org.uk/ has short videos to help you prepare for your breath hold treatment. As well as step by step instructions for a good breath hold technique there are relaxation videos and information videos of what you can expect when coming for CT planning. Please take the time to visit this site as it will help during your Radiotherapy planning and treatment.

If you do not have access to the internet and a friend or relative cannot help you please do not worry. Below there are instructions to help you practice your breath hold at home.



Breath hold practice

The goal at the end of this technique will be to comfortably manage to hold a deep breath for 20 seconds

Stage 1

- Find a comfortable chair to sit in.
- Practise taking in slow, controlled, deep breaths, breathing in through your nose rather than your mouth will help to stay controlled/steady.
- Be mindful of your chest expanding as you do so with each breath.
- Once confident you can start to practise holding your breath.
- Through your nose, Breathe in then out. Breathe in again and out, then on the third breath inhale and hold.
- Initially hold your breath for just five seconds and return to normal breathing.
- Follow the steps again increasing your hold times to 10 seconds, then 15 seconds and building eventually to 20 seconds.

Always ensure you breathe in and out twice prior to each attempt to hold.

Once you are comfortable and confident holding your breath for 20 seconds you need to practise this lying down.

For your CT scan and treatment you will be lying down on a board with your arms supported above your head.



Stage 2

- Try lying on your bed or the floor with a pillow under your head.
- Carefully raise your arms so they are resting above your head (supported by the pillow).
- Practise taking in slow, controlled, deep breaths through your nose. Be mindful of your chest expanding as you do so with each breath. Be careful not to arch your back or lift your chest off the bed/floor when breathing in. You are focusing on filling your lungs with air and really expanding your chest.
- Once confident you can start to practise holding your breath. Breathe in then out. Breathe in again then out, then on the third breath inhale and hold. Initially hold for just five seconds and return to normal breathing.
- Follow the steps again increasing your hold times to 10 seconds, then 15 seconds and building eventually to 20 seconds.

Always ensure you breathe in and out twice prior to each attempt to hold. This will help relax your body and improve how deep a breath you can take.

What happens during my radiotherapy planning CT scan with breath hold?

The radiographers performing the scan will help you practise holding your breath before going ahead with the scan.

A special camera and equipment monitors your breathing with the help of a sensor (a small plastic box) which will be placed on your chest during the scan. The CT scan procedure takes about 15–20 minutes and we will ask you to hold your



breath a few times for approximately 20 seconds.

The radiographers will speak to you through an intercom and tell you when to hold your breath and when to release it. You will be holding your breath for up to 20 seconds at a time.

If you are not able to hold your breath, or your chest wall does not move enough when you hold your breath, the technique is not for you and we will give you your radiotherapy while breathing normally.

Are there any alternatives?

You can have radiotherapy while breathing normally which has been our conventional technique for many years. Your heart will be shielded from the radiation beam as much as possible.

What happens during my radiotherapy treatment with deep inspiration breath hold?

A sensor (a small plastic box) will be placed on your chest again. Once we have positioned you for your treatment we will ask you to hold your breath several times. When the radiographers are happy with your breathing pattern and have finished their checks they will inform you when they are ready to leave the room.

The radiographers will let you know via an intercom system when they are ready to begin the treatment, and will ask you to take a deep breath in and to hold it. The treatment machine will only give the treatment when you are holding your breath.

If you breathe out during the delivery of the radiotherapy, the machine will automatically turn off.



Usually, it is possible to give the radiotherapy in 4–8 'breath-holds'. The radiographers will instruct you when to breathe normally in between sections of the treatment, if required. If you haven't breathed in enough the treatment machine will not turn on, so please be reassured that you cannot be treated incorrectly.

The radiographers will also be monitoring you the whole time. They can see and hear you and will help guide you through the procedure, which lasts 15–30 minutes.



Your experience matters

We value your feedback. Please help us improve our services by answering a simple question, in our online survey – “Overall, how was your experience of our services?”

This survey is known as “The Friends and Family Test”.

You can either scan this QR code with a smart phone camera:



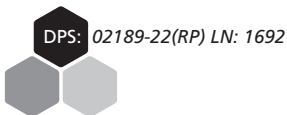
Or type the following web address into your browser:
www.esneft.nhs.uk/get-involved/your-views-matter/friends-and-family-test/

Thank you very much.



Please ask if you need this leaflet
in an alternative format.

Issued by:
East Suffolk and North Essex NHS Foundation Trust
Colchester Hospital, Turner Road, Colchester CO4 5JL
www.esneft.nhs.uk



Issue 4: May 2022 Review date: April 2025
© East Suffolk and North Essex NHS Foundation Trust, 2017-2022.
All rights reserved. Not to be reproduced in whole, or in part,
without the permission of the copyright owner.