

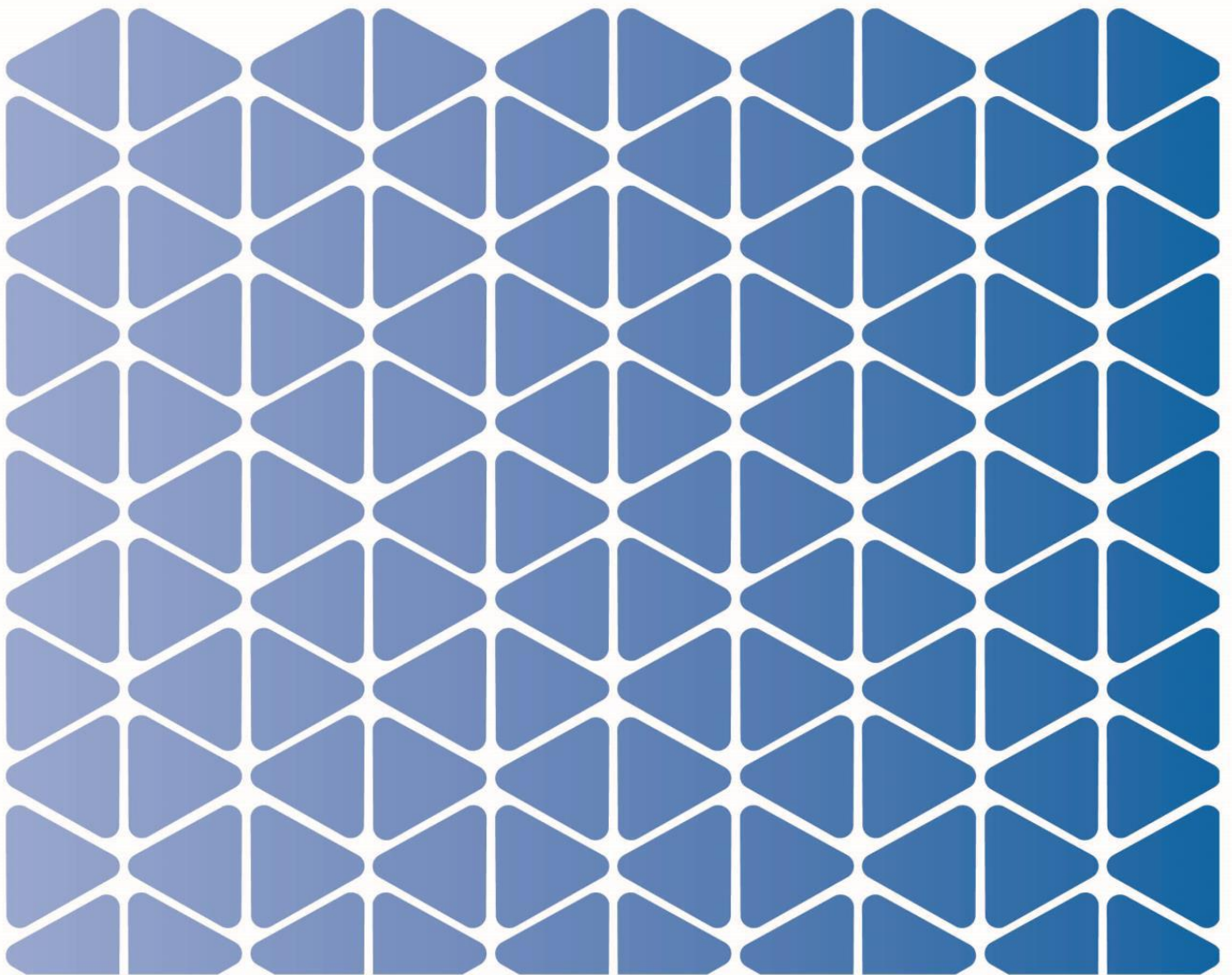


**NHS**

**Worcestershire  
Acute Hospitals**  
NHS Trust

PATIENT INFORMATION

## EXPIRATORY MUSCLE STRENGTH TRAINING



 [www.worcsacute.nhs.uk](http://www.worcsacute.nhs.uk)

 @WorcsAcuteNHS

 @WorcsAcuteNHS

## **What is Expiratory Muscle Strength Training?**

This leaflet has been shared with thanks from Addenbrooke's Speech and Language Therapy Department, Cambridge University Hospitals Foundation Trust.

EMST is a rehabilitation approach which uses a device to exercise and increase the maximal pressure of the expiratory muscles. These muscles are important for breathing out forcefully, coughing, and swallowing. The muscles are exercised by blowing into the device until you generate enough pressure to open the spring-loaded valve (described below).

## **Why have I been advised to perform EMST?**

A speech and language therapist (SLT) has assessed your swallowing and identified that you may benefit from EMST. This aims to make your swallowing safer or more efficient by improving your airway protection, and tolerance of food or fluid going the wrong way.

When you swallow, the voice box (larynx) needs to move upwards to protect your airway and reduce the risk of food or drink 'going down the wrong way'. If your airway is not fully protected when you swallow, it could put you at risk of 'aspiration' (food or drink entering the airway and possibly entering your lungs).

The movement of the larynx is important in helping to open the entrance to your oesophagus (food pipe). This allows food and drink to enter your stomach and reduce the risk of food and drink remaining in your throat (pharynx) after swallowing.

A high pressure needs to be generated when swallowing to ensure all the food and drink is cleared through your throat and does not fall into your airway.

Cough strength is also important in protecting your airway. If any food or drink does enter the airway a strong cough will help to clear it back out and help stop it reaching your lungs.

## **Benefits of EMST:**

To improve your airway protection during swallowing by focusing on:

- Improved cough strength and therefore ability to clear any food and drink from the airway
- To improve the movement and strength of your swallowing muscles to help clear food and drink through the throat
- To improve the upwards lift of the larynx during swallowing which will assist to protect the airway when you swallow

- Reduced airway protection increases the risk of aspiration. **Expiratory muscle strength training aims to try and reduce this risk.**

## How to use the EMST device



To begin:

1. Turn the knob (adjustable valve) of the EMST 150 all the way to the left (counter clockwise).
2. Remove the cap from the mouthpiece and insert the mouthpiece in the EMST 150.
3. Put on the nose clip.
4. Take a deep breath in and insert the mouthpiece of the EMST device behind your teeth forming a tight seal (use your free hand to secure your lips around the device if needed).
5. Breathe out hard and fast so air rushes through the device.
6. If air went through, turn the knob one full turn to the right and repeat step five.
7. Continue to increase the pressure by one full turn **until you can't blow any more air through.**
8. Turn the knob back one full turn to the left; **this is your maximum expiratory pressure and where you will begin training.**



Demonstration link:

<https://www.youtube.com/watch?v=0qHfliQjlf8>

## **Training to use a EMST device**

While training:

1. Set aside 20-30 minutes each day.
2. Sit or stand during your session (sitting is recommended).
3. Place the nose clip on your nose.
4. Take a deep breath in, hold it, and place the mouthpiece in your mouth forming a tight seal.
5. Breathe out hard and fast.
6. Rest for at least 15-20 seconds.
7. Repeat this exercise five times, then take a one-minute break, this completes one set.
8. Complete five breath sets for a total of 25 training breaths.
9. Aim to complete breath training sessions five days a week.
10. At the end of each week, turn the knob to the right by a quarter turn. After five weeks, you can switch to a maintenance programme of training three days a week using the final knob setting achieved in week five.

## **IF YOU FEEL LIGHTHEADED STOP YOUR BREATH TRAINING SESSION**

### **How long do I use the device for?**

The SLT will provide guidance on how long you should continue with these exercises. Usually they will recommend you use the device for five weeks (five repetitions, five sets per day, five days per week).

At this stage, the SLT may re-assess your swallowing to see if the device has helped. Some people may need to use the device for longer periods but you will be advised on this depending on how effective it has been for you.

Make sure you continue with any other rehabilitation exercises the SLT may have set for you (in addition to the EMST) unless advised otherwise.

The SLT will advise on a maintenance programme if this is indicated. This is usually five reps, two sets per day, two days per week.

## **How do I clean the device?**

We recommend the trainer be cleaned monthly; the mouthpiece should be removed before cleaning (the mouthpiece is the only removable part of the trainer. To remove the mouthpiece, pull gently until loosened).

Use washing up liquid and warm water to rinse the trainer. Air dry before re-using.

Do not use harmful cleaning agents such as bleach and do not share your EMST 150 trainer with anyone else.

## **Risks**

You may feel lightheaded during your EMST sessions. If this happens, sit or lie down until the dizziness passes, then get up slowly and carefully. When able, report this to your SLT who may be able to adjust the programme for you.

Please also reference the booklet provided with the device for contra-indications.

## **Contacts / Further information**

Please contact the speech and language therapy team on 01905 760475 if you have any questions regarding your EMST device or training programme.

**If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999.**

### **Patient Experience**

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

### **Feedback**

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

### **Patient Advice and Liaison Service (PALS)**

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaints procedure.

### **How to contact PALS:**

**Telephone Patient Services: 0300 123 1732 or via email at: [wah-tr.PALS@nhs.net](mailto:wah-tr.PALS@nhs.net)**

### **Opening times:**

The PALS telephone lines are open Monday to Friday from 8.30am to 4.00pm. Please be aware that you may need to leave a voicemail message, but we aim to return your call within one working day.

If you are unable to understand this leaflet, please communicate with a member of staff.