

Cystic Fibrosis all about physiotherapy

Bubble PEP

Bubble PEP is a fun way for children to clear sputum from their lungs. PEP stands for Positive Expiratory Pressure and can be taught to your child by a physiotherapist once they are old enough to understand the difference between blow and suck, around two and a half years of age.

With thanks to Melony Archer, University Hospital of the North Midlands, for preparing the information in this document.

Patient name			
DOB		Hospital number	
Physiotherapy recommendations			
This leaflet was issued by: (Physiotherapist name and contact details)		This leaflet was issued on:	

How Bubble PEP works

Setting up the equipment as shown below and asking your child to blow through the tubing creates positive pressure in the lungs, which holds open the airways. This allows air to move behind any sputum, improving airflow and helping move the sputum up the airways until it can be huffed or coughed out. The vibrations caused by making bubbles also help to thin and loosen the sputum, making it easier to clear.

What you need

- A large, clean plastic bottle with a handle
- Liquid soap, washing up liquid or bubble bath
- A tube approximately 5–10mm in diameter and 80cm long (ask your physiotherapist)
- A tray or bowl to catch the bubbles
- Optional drops of food dye to add colour

10–15cm of water (1 pint) and three to five drops of liquid soap detergent

Bowl or tray



How to carry out your Bubble PEP

- Check the list of precautions at the end of this document before starting the treatment.
- Fill the bottle with 10–15cm of clean tap water, and 3–5 drops of your chosen soap and food colouring if desired.
- Set up the equipment as shown in the diagram above.
- Take any inhalers or nebulisers to prepare your child's airways before airway clearance (as prescribed).
- Ask your child to breathe in through his/her nose, pause, then breathe out through the tubing, using a slightly bigger breath than usual, trying not to let their cheeks puff out.
- Repeat this _____ times, and watch as the bubbles rise to the top of the bottle and pour out onto tray.
- After _____ blows, remove the tube and have a rest/pop the bubbles.
- Do a huff/cough to clear any sputum.
- Repeat _____ times or for _____ minutes.
- Take any inhalers or nebulisers after airway clearance (as prescribed).

Remember to do daily physical exercise as well, as this will help your child move sputum from deep within their lungs and is important for helping them stay fit and healthy.

Cleaning up

After every use, empty and clean the bottle and tubing in hot, soapy water. Pour warm, previously boiled water through the tubing and hang from the middle to allow it to dry. Leave the plastic bottle upside down to air dry. Your physiotherapist will tell you how often to change the bottle and tubing (at least weekly is recommended but this will vary depending on your unit's infection control policy).

Precautions

Bubble PEP may not be suitable if your child has a history of the following:

- recent sinus surgery
- nose bleeds
- recurrent haemoptysis (coughing up blood)
- pneumothorax (collapsed lung)

If you're unsure about any of these, speak with your physiotherapist before carrying out the treatment.

Stop using the Bubble PEP immediately and seek emergency help, or assistance from your CF team, if:

- you notice red flecks in your child's sputum.
- they become breathless or experience sudden chest pain.

This leaflet should only be used if it has been given to you by your physiotherapist, who will have decided if this is a suitable treatment for you to undertake. Do not use this leaflet without first consulting with your physiotherapist.

The information on this leaflet is based on clinical best practice and consensus of opinion by physiotherapists within the ACPCF. For a detailed review of the evidence for this technique, please review the 'Standards of Care and Good Clinical Practice for the Physiotherapy Management of Cystic Fibrosis' 2017. Third edition. To view our consensus documents please visit cysticfibrosis.org.uk/publications.

The Cystic Fibrosis Trust provides information about cystic fibrosis through our factsheets, leaflets and other publications. Most of our publications can be downloaded from our website or ordered from our helpline.

Our helpline can help you with a range of issues, no matter how big or small. Our trained staff can provide a listening ear, practical advice, welfare/benefits information or direct you to other sources of support. The helpline is open Monday to Friday, 9am–5pm, and can be contacted on 0300 373 1000 or at helpline@cysticfibrosis.org.uk.

For more information about the Association of Chartered Physiotherapists interested in Cystic Fibrosis please contact ACPCFmembership@gmail.com.