

Respiratory Physiology and Sleep Sciences

Chest physiotherapy - Cough augmentation techniques

For many people with a neuromuscular condition or a condition that affects your muscles, muscle weakness can affect your breathing muscles. This can mean that you may struggle to:

- Take a deep breath
- Breathe out effectively
- Cough effectively/strongly

This leaflet explains techniques that you can use to help with clearing your secretions or phlegm. It will remind you of the techniques you have been taught by your respiratory physiotherapist.

Lung volume recruitment

Lung volume recruitment is the process of increasing the amount of air you breathe in (recruitment).

To take a big enough breath in, we need to use our breathing muscles, as well as abdominal muscles (tummy muscles), and diaphragm.

Neuromuscular conditions can make all your muscles weak, including your breathing muscles.

If you cannot fully expand your rib cage due to muscle weakness, you will struggle to take a big enough breath in. You will also be unable to get a big enough breath out to sufficiently cough. This may mean that secretions or phlegm collect in your airways. This makes it more likely you will develop a chest infection.



Patient Information

We all produce secretions from our lungs and saliva from our mouths. We can usually clear these by coughing or swallowing. However, if we have weak muscles, we may be unable to clear these secretions or saliva. This can become uncomfortable and increases the chance of developing a chest infection.

An effective cough

To produce an effective cough, we need to make sure that three key components work together:

- A big deep breath in
- The voice box (glottis) closes
- Air is forced out, producing the cough

We usually cough when there is something irritating our airways. This could be mucus, phlegm, or saliva for example. We automatically take a deep breath in, and our glottis will close. We then force air out by contracting our breathing and abdominal muscles.

If we have weak muscles, this may limit our ability to cough and clear whatever is irritating our airways. If the respiratory muscles are too weak to cough effectively, you need to use techniques that your respiratory physiotherapist will teach you to help with coughing.

Lung volume recruitment bag

This technique uses a lung volume recruitment bag to force air into your lungs. Every person will have a slightly different regime with this bag. Your physiotherapist will work with you to find the most suitable regime for you.

This technique can take a while to get used to. But the more you do it, the better you will become.

How to use the lung volume recruitment bag

Equipment needed:

- LVR bag
- Mouthpiece
- Nose clip
- Face mask



Technique

1. Sit as upright as possible.
2. If you are unable to use the LVR bag yourself, agree on a signal with the person using it. This is so they know when your lungs are full. This may be a blink or raising your eyebrows.
3. Take a deep breath in and hold it.
4. If you are using a mouthpiece, put the nose clip on securely. Make sure you have a tight seal around the mouthpiece.
If you are using a facemask, put this over your mouth and nose, ensuring a tight seal.
5. Gently squeeze the bag and time this with your breath in.
6. Repeat until your lungs are full.
7. You may feel a stretch in your lungs or chest. This is normal but it should not be painful. Stop if it becomes painful.
8. Remove the face mask or mouthpiece and exhale or cough as desired.

Patient Information

Your prescription is:

Interface: Mouthpiece and Nose clip/Facemask

Regime:

	Times per day
	Breaths in
	Manually assisted cough
	Repeat cycles

Stop the treatment if you experience any of the following:

- Dizziness
- Chest pain
- Blood in secretions

If the symptoms persist, contact your GP for advice.

Feeling unwell?

If you begin to feel unwell, contact your GP or NHS 111 and seek advice.

If you become very unwell and need to be admitted to hospital, please take your lung volume recruitment bag with you.

How often should I clean my mask/mouthpiece and change LVR bag?

You must wash your mask/mouthpiece daily. Wash these with warm soapy water. Allow them to dry before using again.

Inspect your LVR bag each time you use it. If you find any fault, please contact the respiratory physiology department on **024 7696 6734** and request a replacement.

Important

Your LVR bag has a one-way valve and should not be used for resuscitation in the event of emergency. This should be clearly labelled.

The LVR bag should only be used by those trained to use it.

The Trust has access to interpreting and translation services. If you need this Information in another language or format, please contact 024 7696 6734 and we will do our best to meet your needs.

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