

Healthier Communities,
Outstanding Care



Sherwood Forest Hospitals
NHS Foundation Trust

Breath stacking and Lung Volume Recruitment (LVR)

Information for patients

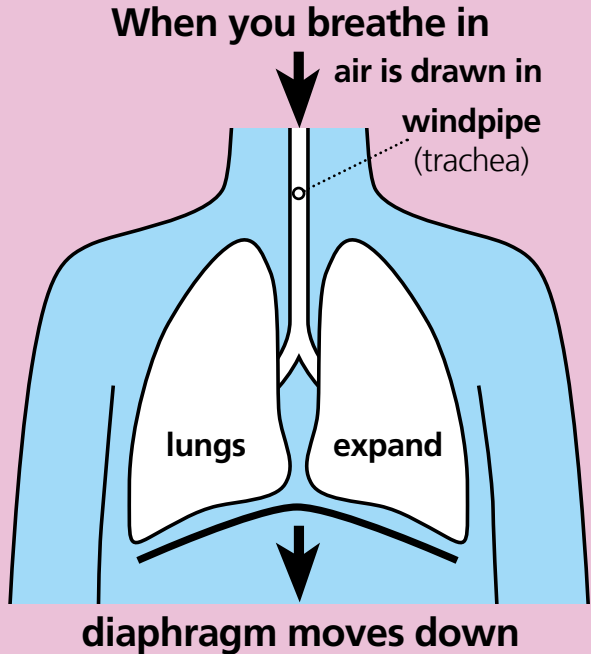


What is breath stacking and why is it used?

Breath stacking is an exercise used to help you take a deeper breath. Some conditions cause muscle weakness including weak respiratory muscles, or bone problems which restrict chest movements. This may lead to difficulty:

- **Taking a deep breath**
- **Completing a strong/effective cough.**

Breath stacking increases the size of your breath you take, by stacking one breath on top of another without breathing out. This deeper breath then improves the strength of your cough and can help clear chest secretions.



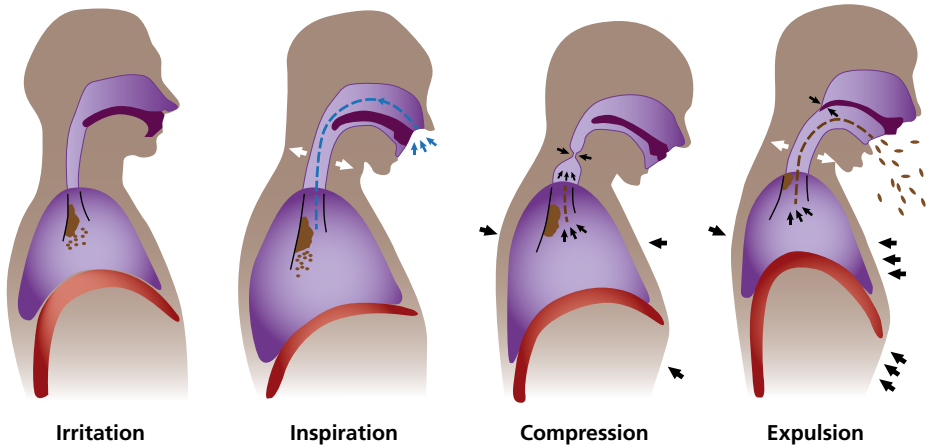
What are the benefits of breath stacking?

- It can help you clear secretions from your lungs and prevent chest infections.
- It can help keep your rib cage mobile and stretch the respiratory muscles.

What is an effective cough?

To produce an effective cough we need to ensure three components work together:

- **A big deep breath in.**
- **The voice box is able to close in time.**
- **Air forced out.**



We normally complete a spontaneous cough when something irritates our airways. However, if we have weak respiratory muscles, this may limit the strength of the cough. Breath stacking facilitates a deeper breath, which helps to create a more effective cough.

How often should I use breath stacking?

You will be advised by your physiotherapist how often to complete the technique. You should complete these exercises every day.

How many times per day: _____

How many cycles during a session: _____

How do I breath stack?

It is best to sit in an upright position. This exercise does not require any equipment.

The following steps are an example of how to perform breath stacking. Your physiotherapist may adapt these steps if required.

- 1. Breathe out fully.**
- 2. Take a full breath in.**
- 3. Try and hold the breath in and take another.**
- 4. Repeat step three until you feel your lungs are full but comfortable.**
- 5. Try and hold the deep breath for three to four seconds.**
- 6. Slowly breathe out or cough if you need to.**

What do I do if breath stacking isn't working for me?

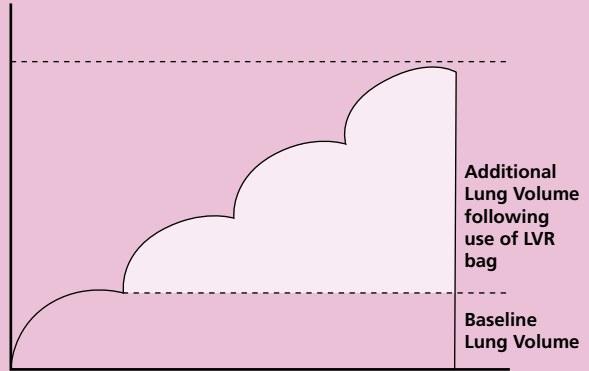
You can discuss this with your physiotherapist who can complete some tests using a peak cough flow.

Should these results show that you need some extra help to gain a deep breath, they may discuss the use of a Lung Volume Recruitment (LVR) bag.

Why do I need an LVR bag?

If you can not do breath stacking techniques independently due to respiratory muscle weakness, an LVR bag should help you take a deep breath, strengthen your cough and clear your secretions.

An LVR bag is a 1.5 litre self-inflating bag with a one way valve. This does the same as breath stacking by stacking one breath on top of another without breathing out, but using the bag to help get the deep breath in.



Are there any risks?

There are no recorded incidents of complications from using an LVR bag.

Please make sure only those trained to use the LVR bag use it.

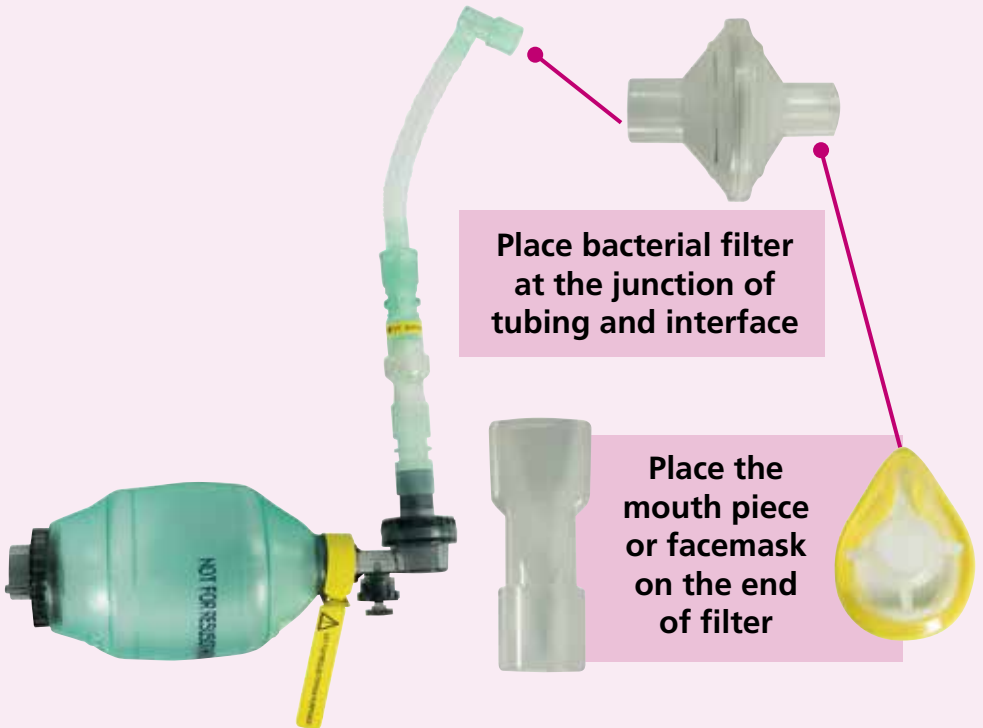
If you use the device incorrectly it could result in complications such as:

- Damage to the lungs due to over inflation (over inflation is described as completing too many breaths in that overfill the lungs and cause the user discomfort).
- Damage may occur in the form of blood in the sputum or in severe cases a pneumothorax (collapsed lung).

If you think any complications have arisen, seek appropriate medical advice.

However, if you use the LVR bag as taught, there is a very low risk of this happening.

What equipment do I need?



How do I use the LVR bag?

It is best to sit in an upright position.

The following steps are an example of how to perform breath stacking with an LVR bag. But your physiotherapist may adapt these steps if required:

- 1. Breathe out fully.**
- 2. Place the mask over your mouth and nose (or mouth piece in your mouth with a tight seal of your lips).**
- 3. Take a full breath while gently squeezing the bag.**
- 4. Try and hold the breath in and take another while slowly squeezing the bag again.**
- 5. Repeat step four until you feel your lungs are full but comfortable. (You may feel a slow stretch in your lungs. This is normal but it should not be painful).**
- 6. Try and hold the deep breath for three to four seconds.**
- 7. Slowly breathe out or cough as you feel is needed.**

If you require the help of someone to use the bag, make sure you have a way to communicate to that person when your lungs are full. For example blinking or raising your eyebrows.

How often should I use the LVR bag?

Regime provided by your physiotherapist:

Mouth piece or face mask	
Time per day	
Breaths in	
Manually assisted cough	
Repeated cycles	

Do not use the LVR bag:

- If you are allergic to latex.
- Immediately after a meal (allow one hour after eating/tube feed completion).
- If you are feeling nauseous or you are vomiting.
- If you feel drowsy or consciousness is affected.
- If communication becomes more limited than normal.
- If you've had surgery to your face, nose or mouth.
- If you've had surgery to your lungs, stomach, oesophagus or throat.
- If you have a pneumothorax (collapsed lung).
- If you have a pleural effusion (fluid around the lung).

Please stop treatment if you experience any of the following:

- Blood in your secretions.
- Experience chest pain, chest tightness, shortness of breath, a wheeze or significant dizziness.

What do I do if I have any problems?

If you are feeling unwell, please contact your GP or NHS 111 and seek advice. Should you become acutely unwell and require admission to hospital, please take your LVR bag with you.

The LVR bag can be used for up to 12 months before it needs to be replaced. Always check the full system prior to use. If the valve has become stuck, give the bag a firm squeeze before use to open the valve.

You should clean you mask and mouthpiece on a weekly basis with warm soapy water and leave to air dry. Should it become visibly contaminated with secretions in the one way valve, or stops working correctly, please stop using it and contact:

Respiratory Physiotherapist: _____

Telephone: _____

IMPORTANT

Due to the one way valve on the LVR bag, it must NOT be used for resuscitation in the event of emergency. Please ensure your LVR bag has a label stating this.



Further sources of information

NHS Choices: www.nhs.uk/conditions

Our website: www.sfh-tr.nhs.uk

Patient Experience Team (PET)

PET is available to help with any of your compliments, concerns or complaints, and will ensure a prompt and efficient service.

King's Mill Hospital: 01623 672222

Newark Hospital: 01636 685692

Email: sfh-tr.PET@nhs.net

If you would like this information in an alternative format, for example large print or easy read, or if you need help with communicating with us, for example because you use British Sign Language, please let us know.

You can call the Patient Experience Team on 01623 672222 or email sfh-tr.PET@nhs.net.

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