Breath stacking

Information for patients
Therapy Services
Breath stacking is a breathing exercise that can benefit people whose lung capacity is reducing due to muscle weakness or other restrictions in chest movement.

When you breathe in, air flows in through your mouth or nose and down a series of tubes. Starting with the **trachea** (windpipe) the tubes branch into two smaller passageways called the **bronchi**. This branching continues to smaller tubes and ends when the air reaches the **alveoli** (air-sacs). There are millions of these in your lungs. It is here that the blood picks up oxygen that is then taken throughout your body.
What are the benefits?

- Breath stacking helps to increase the amount of air that can be moved in and out of your lungs.
- It works by allowing air to move more deeply into your lungs and opens up alveoli that may have closed, while exercising the lung tissue and chest wall, keeping them flexible.
- If more air can be taken into your lungs it improves your ability to cough and speak.
- Opening up the alveoli is important for preventing infection. Areas of the lung that are not properly opened are more at risk of developing a chest infection.

What do I need?

- Breath stacking can be done using a “bag” which is a simple device used to give artificial breaths to people who are unable to take a deep breath on their own.
- A one-way valve, an extension tube, and either a mask or mouthpiece are added.
- The therapist will set up the equipment and do the initial treatment and teaching for the patient and care giver.
How is it done?

1. It is best done in a sitting position but can be done reclining or lying flat. Whichever position is used, try to avoid slouching. If sitting: rest against the back of a chair and keep your shoulders, arms and hands relaxed.

2. If using the mouthpiece, place your lips tightly around the mouthpiece to create a tight seal. If using the face mask, you or your caregiver can hold the mask firmly over your nose and mouth to stop air from escaping.

3. Take a deep breath and hold that breath.

4. Pay attention to possible leaks between the mouthpiece and the mouth.

5. Squeeze the bag gently, stacking another breath on top of the first and taking more air in.

6. Take in even more air as the bag is squeezed again.
7. Squeeze the bag 2-5 times until you feel the lungs are full of air, you should feel a stretch across the front of your chest.

8. Hold the air in as long as is comfortable.

9. Remove the mouthpiece or facemask and hold your breath for 3-5 seconds before gently exhaling.

10. If phlegm is present, try to produce a strong cough.
    Repeat steps 3-10.

One treatment = ........    breaths

Repeat ............ times

When should it be done?

- Your therapist will advise you on how often you should be doing Breath stacking, but usually aim for 3 treatments a day.
- Breath stacking is best done in the early morning, before meals and at bedtime.
- More than 3 treatments can be performed if required, as advised by your therapist.
- At least a 10 minute period of rest should take place between each cycle of your recommended exercise programme.
Hints and tips for caregiver

- Encourage the patient to accept as much air as possible.
- Maintain eye contact to help coordinate squeezing the bag with the breath in and/or cough.
- Watch for when the patient begins to breathe in.
- Change from mouthpiece to facemask if air escapes around the lips.
- Breath stacking should not cause dizziness, feeling nauseous or chest discomfort. In the event of these symptoms occurring, please stop the treatment.

Cleaning and maintenance

- Before each use, complete a visual inspection of the whole circuit checking for any signs of damage and checking that all parts look clean.
- The facemask and mouthpiece should be washed in hot soapy water after every use and left to thoroughly air dry before reconnecting.
- The bag should be wiped down with a damp cloth weekly.
- Monitor the tubing and if it becomes visibly soiled contact your therapist, as it will need replacing.
- If the bag is not working properly or there is any damage to the device it should also be replaced.

What if I have any questions?

If you need any further information your doctor or therapist will discuss your individual management with you.

Your therapist:
Supporting evidence:
Cleary, S., Kendall, S., Wheeler, S., Kalra, S. and Johnston, W. Perspectives of patients with ALS on the impact of lung volume recruitment therapy and their health and quality of life. Covenant Health Research (13); 3-4.