

# Autogenic Drainage Technique for Airway Clearance

## Information for patients

---

### Autogenic Drainage

Autogenic Drainage (AD) means self-drainage, as it is a breathing technique that can be carried out independently.

AD uses controlled breathing to mobilise mucus from the lungs to the mouth where it can be cleared with a good huff or cough.

### How it works

By controlling your breathing pattern, air that you breathe out can move mucus from the smaller airways of your lungs to the central airways, where it can be cleared with an effective huff or cough.

By controlling your breathing at different levels, mucus can be moved from the small, medium and large sized airways. This clears the lungs thoroughly and effectively and avoids ineffective, tiring coughing fits.

### Where to perform AD

The time and frequency of your AD sessions will be discussed with your Physiotherapist. Sessions can last between 20 minutes and an hour depending on how much mucus is in your lungs. AD should not be performed for longer than an hour; if secretions are still present, AD should be carried out more frequently during the day.

If you take bronchodilator medication, this should be taken approximately 10 minutes before AD, giving time to open up the airways. If you take nebulised antibiotics or a preventer inhaler, these should always be taken after AD.

Drink plenty of fluids before and during your airway clearance, as this will assist the movement of the mucus.

### Benefits of airway clearance

Clearing mucus from your lungs will improve your lung function and reduce the risk of chest infections. This means you will feel less short of breath and wheezy and your activity levels will improve. This in turn helps to maintain a clearer chest and improves ventilation.

## The AD Cycle

1. Adopt a comfortable position, blow your nose and clear your throat
2. Perform a 'test breath' to locate the mucus
3. Take a normal breath in through your nose and hold it for 2-3 seconds
4. Sigh the breath out through an open mouth for as long as possible. You should hear the mucus rattling on the breath out although sometimes this can take a few breaths to hear.
5. Breathe at the depth and level needed to move the mucus upwards towards the central airways. Keep breathing at low volumes (small breath in and breathing out for as long as you can, using your tummy muscles) until the mucus collects and moves upwards.
6. When you can feel or hear the mucus in your larger, central airways and feel the need to cough, you can then breathe at higher lung volumes. This means you can raise the level of your breathing and take slightly larger breaths. However, always remember to take a slow breath in and a long sigh out to the end of your breath.
7. Once you feel the mucus in the large airways near your mouth it can be cleared with a strong huff. If the huff did not move the mucus into the mouth, an effective cough can be performed.
8. Repeat until your chest is clear, but do not perform AD for longer than an hour.

When performing AD the size of breath and the level at which you breathe depends on where the mucus is located. There are three different phases:

1. **A mobilising phase:** By breathing at low lung volumes, mucus is loosened from the small airways deep in your lungs.
2. **A collected phase:** By breathing at low to mid lung volumes, mucus is moved from the medium sized airways.
3. **A clearing phase:** Mucus that has been moved from the small to the medium airways should now be in the central airways. This can be cleared by taking a deeper breath and performing a huff or cough.

## The technique

### Preparation:

- Sit or lie in a comfortable and supported position
- Blow your nose and clear your throat before starting
- Take a normal breath in and a maximum breath out through an open mouth to locate the position of your secretions.

### If you hear or feel secretions rattling:

- At the beginning of the breath: They are in the larger/upper airways (nearer the mouth)
- In the middle of the breath: They are likely to be in the middle/central airways
- At the end of the breath: They are likely to be in the small/lower airways (deep in the lungs).

The size of breath and level at which you breathe can be altered during the AD cycle depending on the location of the mucus you are clearing. This allows you to clear your lungs effectively.

## Breathing in

Perform a slow 'tummy breath' in through your nose. This will filter and warm the air moving into your lungs.

Open your mouth in preparation for the breath out but hold your breath for 2-3 seconds before doing so. This allows the air to fill your lungs more evenly and get behind the mucus to clear it.

## Breathing out

This is done through an open mouth and is a strong sigh at a steady speed. Your breath out should be longer than your breath in. When breathing at low lung volumes, use your abdominal muscles to squeeze all of the air out of your lungs. If you become wheezy, this means you are breathing out too hard.

## Huffing and coughing

Only huff or cough once the mucus has moved to the large airways. Coughing before this will not clear the mucus and may cause the small airways to collapse, trapping mucus in the lungs. A cough can be suppressed by swallowing, sniffing or sipping water.

To perform an effective huff take a slow, deep breath in then exhale as fast as you can through an open mouth. If a huff has not cleared the mucus, then perform an effective cough.

## Contact telephone numbers

This leaflet is a guide to AD, which should be taught to you personally by a skilled Physiotherapist. If you have any concerns or questions, please contact the Physiotherapy Department on **0131 312 1079**.

**Royal Hospital for Children and Young People**

50 Little France Crescent

Edinburgh

EH16 4TJ

Tel. 0131 312 1079

