

Cystic Fibrosis all about physiotherapy

Autogenic drainage (AD)

Autogenic drainage (AD) is a technique that utilises changes in your breathing and does not require equipment.

With thanks to Ali Gates, Oxford Adult CF Centre, and Dr Paula Agostini, Birmingham Heartlands Hospital, 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 does autogenic drainage (AD) work?

Autogenic drainage (AD) works by adapting your breathing and maximizing airflow within the airways to improve ventilation and clear sputum. The breath out is like sighing, with the air moving out of the mouth as fast as possible, but not too hard, as this can result in wheezing (tight airways), which can trap sputum.

The AD style of breathing in

- Breathe in slowly and quietly through your nose – the breath in should be a medium-sized breath.
- Hold the breath in for around three to four seconds, allowing your lungs to fill completely and air to get behind the sputum.
- If your breath in is too fast, the breath out will be less effective at moving sputum.

The AD style of breathing out

- Breathe out with as fast a sigh as possible, without forcing air out of your lungs too hard. Create a steady flow of air, as if you are gently steaming up a window or mirror.
- Listen for the sound of crackling, gurgling or rattling sputum, however quiet – this means you're doing it correctly. It can take several breaths for this to happen.
- The sound shows that sputum is moving through your lungs toward your throat. The crackles should get louder and louder and deeper in pitch.
- If you hear wheezing when you breathe out, you are squeezing the air out too hard and the airways are tightening.

How to carry out your AD treatment

- Take any inhalers or nebulisers to prepare your airways before airway clearance (as prescribed).
- Blow your nose and 'huff' or cough if required to clear mucus from your nose and sputum from the back of your throat. Choose a relaxed, comfortable position in which your breathing does not feel restricted, as advised by your physiotherapist.
- Drinking plenty of water throughout the day may help make sputum looser and easier to clear.



The test breath – where is the sputum?

- Relaxed, normal breathing before starting AD breathing.
- Take a deep AD-style breath in, so the lungs are completely full of air, and hold it for three to four seconds.
- Do an AD-style breath out as far as you can, emptying your lungs completely. Push gently with your tummy muscles towards the end of your breath out to do this.
- If the crackling sound is loud at the beginning of your breath out, some sputum is already near your throat and is almost ready to be coughed up. Try to clear this with a huff or cough.
- If the crackles are quiet or high pitched, or heard towards the end of the breath out, the secretions are deep in the lungs.

Moving the sputum

- After your test breath continue using AD breathing as previously described.
- It is important to breathe out as far as you can, without wheezing or coughing, completely emptying your lungs on each breath out to start with. This starts to move the sputum deep within your lungs.
- Continue this exercise, gradually taking deeper and deeper breaths as the crackles get louder. You will not need to continue emptying your lungs each time as the sputum should move up your airways (see diagram below).
- While breathing, place your hands on the front or sides of your chest – you may be able to feel the crackles as well as hear them.

Coughing

- Resist the urge to cough for as long as possible throughout the treatment, even if you have to go back to normal breathing for a rest. This will allow a larger amount of sputum to collect in your throat before a final cough to clear it.
- The sputum should be cleared with just one or two controlled and effective huffs or coughs.
- Once you have coughed, rest for a few minutes or until you have got your breath back. Then repeat the AD breathing from the start.
- Keep doing this exercise until your chest feels as clear as possible (ie there are no crackles).
- Take any inhalers or nebulisers after your airway clearance (as prescribed).



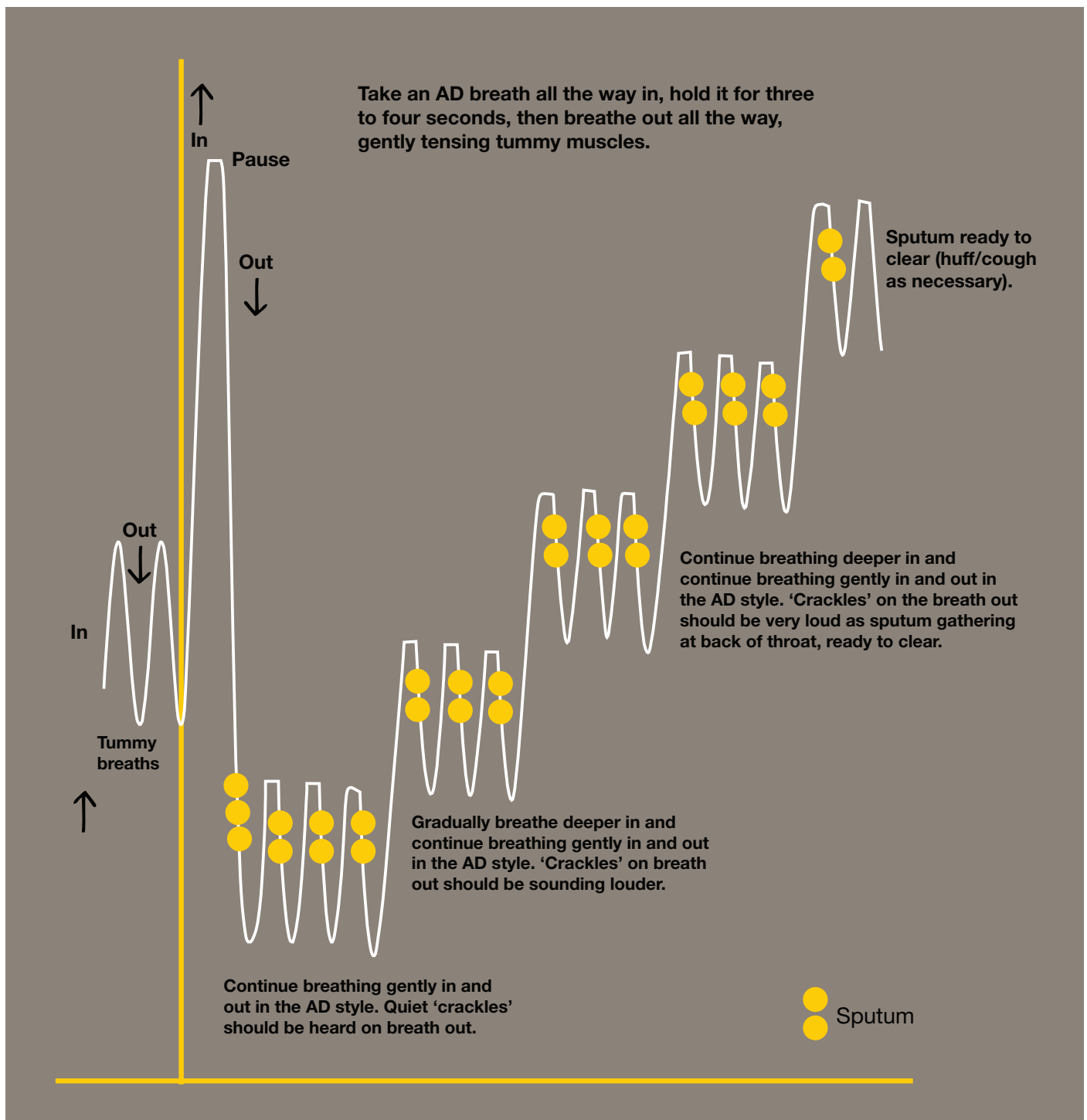
Using a tube to help keep the back of the throat (glottis) open.

Talk to your physiotherapist if you have any questions about the AD technique or how to perform it. This leaflet is designed to be used together with the teaching of the technique by a qualified physiotherapist. Remember to do daily physical exercise as well, as this will help you move sputum from deep within your lungs and is important for helping you stay fit and healthy.

You might find it useful to watch the following video of the technique.

<https://www.youtube.com/watch?v=m11S8XAusZw>





On the left of the diagram, the breaths are low down as the air is being pushed fully out of the lungs on each breath out. Moving across the diagram to the right, you can see that the breaths are changed and gradually get higher and higher. Note that the breaths out do not go out so far each time. There may be more or fewer breaths than shown here.

Your individual cycle may look different to this – it should be guided by your own feedback and advice from your physiotherapist.

Airway clearance plan

Time	Action
Morning	<p>Before airway clearance:</p> <p>Airway clearance:</p> <p>After airway clearance:</p>
Afternoon/evening	<p>Before airway clearance:</p> <p>Airway clearance:</p> <p>After airway clearance:</p>

Cleaning information:	
Additional information:	

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.