

Breathing

after critical illness

This information sheet provides information, advice and exercises that can help your breathing to recover after being critically ill.



Contents

Why is my breathing affected by a critical illness?	3
What happens to your lungs during a critical illness?	3
How can physiotherapy help my breathing?	4
What can help with breathlessness after critical illness?	4
Exercise and Activity	6
Breathing exercise: Active Cycle of Breathing Technique (ACBT)	7
What position should I do ACBT in?	9
How many cycles of ACBT should I do?	9
How often each day should I do ACBT?	9
When should I do ACBT?	10
Conclusion	10
More information	10

Why is my breathing affected by a critical illness?

During a critical illness, many parts of your body can be affected. This includes your lungs and breathing muscles that can get weak when they are not used as much as they usually are.

Our breathing muscles are mainly the diaphragm (this a dome shaped muscle that sits between your chest and abdomen) and the muscles between your ribs. Air is sucked into your lungs when you breathe in and when these muscles relax, you breathe out. Oxygen from the air goes into your blood and this goes to your muscles to give them the energy they need to work.

What happens to your lungs during a critical illness?

When you were critically ill you may have needed help with your breathing from a ventilator. This is a machine that gives you air and it can also give you oxygen if you need it. This machine pushes air into the lungs to do the job of your breathing muscles. This means your muscles can become weak because they are not being used in the same way that they usually are when we are breathing for ourselves.

You may also have had a chest infection while you were critically ill. It is common to develop a chest infection when you are on a breathing machine because you are not breathing through your nose and mouth and so it is easier for bacteria (germs that cause infection) to go into your lungs.

“It is normal to feel that you cannot breathe as deeply as you used to do.”

Breathing is something we may not have thought about before, but during and after a critical illness it can feel hard to do and this can feel frightening. It is normal to feel that you cannot breathe as deeply as you used to do. You may feel breathless when you do activities that would not normally make you short of

breath (for example standing up from a sitting position or turning over in bed). This is because your breathing muscles may be weak, but they will strengthen again as you recover and begin to use them normally.

How can physiotherapy help my breathing?

While you were in the ICU, the physiotherapists will have helped your breathing by doing exercises with you. These exercises would have been to:

- get more oxygen moving around your lungs and your muscles
- help your breathing muscles get stronger
- help you to cough, which will help you to clear any mucus on your chest. This is needed because the muscles that you use to cough can become weak when you have been critically ill.

Physiotherapists will have looked at how you breathe, how deeply you breathe and listened to your lungs with a stethoscope to see if you had any mucus in your lungs that needed to come out. Lungs usually produce a small amount of mucus to help your lungs to work. It is common to have more mucus in your lungs when you are critically ill, but it is hard to cough it up and swallow it as you usually would do. It is important that this mucus is cleared because otherwise germs can stick to it and you could get an infection. Mucus can also make it more difficult for air to get into your lungs, so you get tired more quickly (because not enough oxygen is getting to your muscles to help you move).

What can help with breathlessness after critical illness?

After a critical illness it is common to feel breathless. As you begin to do more for yourself and need your lungs to work harder, you might feel like you are short of breath. Simple tasks such as getting dressed, washing or walking short distances may make you feel breathless. Being breathless might make you panic or feel frightened. You may feel like you want to stop doing things that make you feel breathless.

If you are feeling breathless, here are some tips that may help you:

- Do not stop doing the things that are making you feel breathless. This can make the problem worse because your muscles will get weaker from not being used so that you will feel more breathless.
- Try not to hold your breath when you do activities. For example, if you are going up stairs it might help to breathe in when standing on a stair and breathe out as you go up a stair.
- Plan and pace your activities throughout the day and recover after an activity before you do the next one for example e.g. wash your face, recover your breath, then brush your teeth.
- Use a handheld fan with three blades. If you hold a small fan in front of your face, then moving it slightly away and across your face can help to make you feel less breathless. Keep a handheld fan in your bag or in different rooms in your house so it is there when you want it.
- When you feel breathless, try to stay calm, stop, drop your shoulders and breathe out, then take a slow breath in.
- Take control by finding positions that makes it feel easier when you feel breathless. You could sit forward with your elbows on your thighs or lean forward to rest at a wall. This will help your breathing to relax by supporting your upper body and saving energy.
- If you are using a walking aid, such as a stick or a frame, lean forward on it when you feel breathless. This can reduce the work of the upper body and help you recover your breath quicker.
- Perform the 'breathing control' relaxation exercise (see the Breathing Exercise section on p.7).

Try to do these tips when you are not breathless so that you can use them easily when you are short of breath.

Knowing things that can help with your breathlessness will help you take control, meaning that feeling short of breath is less frightening. By using strategies that

help, you will be more confident and active and this will allow you to build up strength in your breathing muscles.

If you feel more breathless than you have been, it is possible you could have a chest infection. If you have a lot of mucus in your lungs and when you cough it up, your mucus is yellow, green or brown and you feel hot, sweaty or have flu like symptoms, you may have an infection and you should seek advice from a healthcare professional.

Exercise and Activity

After critical illness it is normal to feel very tired. It can feel difficult to do the things that you used to do easily, such as getting dressed, sitting and walking. This is because your muscles may have got very weak and it takes time to build them up again. It is important to increase your activity because this will help your muscles to get strong again.

—————
*“When you feel stronger,
you can add in gentle
exercise as well”*
—————

The best way to help your lungs to recover after critical illness is to slowly increase your daily activity. To begin with, just doing normal day to day activities will be very good exercise for you. When you feel stronger, you can add in gentle exercise as well.

You may have some feelings of breathlessness when you are doing activities but a good way to measure if you are doing too much is to see if you can still hold a conversation when doing them. If you can then your body is coping well with that activity level. Do listen to your body though and rest when you need to. It can sometimes feel like you are making very little progress, but it helps to keep a diary so you can look back and see how far you’ve come.

Getting back to doing normal activities and then doing gentle exercises helps your breathing and the feeling of breathlessness. This is because:

- walking and moving will make you breathe deeper. This helps air to move

around your lungs which then moves any mucus that is sitting in the lungs so you can cough it out more easily. It can also help to open up areas of the lungs that are closed because mucus was blocking them.

- being active uses your breathing muscles and will make them stronger
- working and exercising your lungs will make them work better, which means they will be able to send more oxygen to the muscles in your arms and legs. This will make you feel stronger and able to do more.

Breathing exercise: Active Cycle of Breathing Technique (ACBT)

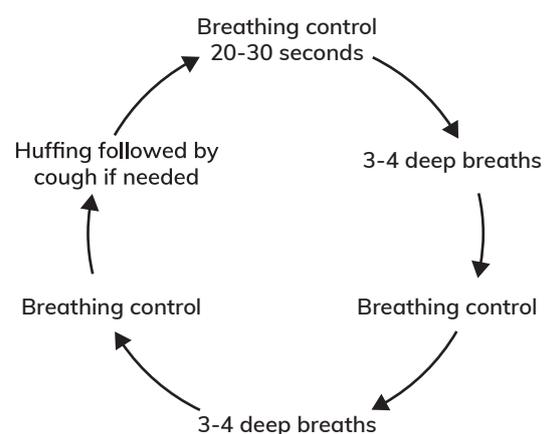
It can take some time for your lungs to work well again after a critical illness. You may have been given breathing exercises to help your lungs by the physiotherapists when you were in the ICU.

A common exercise used by physiotherapists is called the Active Cycle of Breathing Technique (ACBT for short). This is a simple pattern of breathing designed to deepen your breathing and to loosen and clear mucus. Learning how to clear your mucus is one of the best ways to help your breathing. Also the first part of this technique, called breathing control, can be used by itself to help you if you are feeling breathless.

This is a general information sheet, but if your physiotherapist suggests changes to the Active Cycle of Breathing or different exercises, please follow their advice as this will be for your individual needs.

Active Cycle of Breathing Technique consists of 3 stages and these are performed in a cycle:

1. Breathing Control (relaxed breathing)
2. Deep Breathing
3. Huffing (which is breathing out like you are trying to steam up a mirror)



Stage 1 Breathing control (Relaxed Breathing)

The aim of the Breathing Control stage is to relax your breathing and prepare to help the mucus in your lungs to move. This stage can also help when you feel breathless, anxious or frightened.

In this Breathing Control stage, you may want to breathe in through your nose if possible, because this warms the air before it enters the lungs. Sit or lie so that your arms are supported and relaxed. Place your hand on the soft area where your ribs move away from your chest, just above your stomach and concentrate on what movement you feel. You should be able to feel your diaphragm (the main muscle you use for breathing) move. As you breath in, this area will lift up and as you breathe out this area will lower. Feeling this movement shows you are using your diaphragm correctly.

First take a normal relaxed breath, let the breath go down into your stomach, and relax your upper chest and shoulders. This is a resting position and you can also use it to help you relax between the deep breathing (stage 2) and huffing (stage 3).

Stage 2 Deep breathing

Next take a long slow breath in through your nose (with your shoulders relaxed) then breathe out gently, like a sigh. Repeat this 3-4 times. If you are not breathless you can add a hold of 3-4 seconds after you have taken the deep breath in.

Stage 3 Huffing

This is a breath in, followed by a breath out through an open mouth, using the muscles of the chest and stomach to force the breath out. Imagine you are steaming up your glasses to clean them. This will move mucus along the airways to where you can cough it up. Huffing is a less tiring way to move your mucus so you can cough it out more easily.

There are two types of huffing that you can do to help mucus move out of the lungs:

1. A 'small-long' huff – this helps mucus move from low down in the lungs. Take a medium or small breath in and huff out as strongly as you can and for as long as you can

2. A 'big-short' huff – this helps to move mucus from higher up in the lungs. Take a deep breath in and huff the air out as quickly as you can. This can be used when the mucus feels like it is ready to come out.

After doing 2 or 3 of either of these huffs OR doing a deep breath in, it may make you cough. Try not to cough unless mucus is ready to be cleared. If your mucus is hard to move and it is sticky and thick, it may help to drink more water to help it. However, if you have been told by a healthcare professional to limit what you drink, please follow their advice.

If you want to, you can go through the three stages again, or you can finish by doing some Stage 1 breathing control/relaxed breaths.

What position should I do ACBT in?

You can choose to do this in a position that you find comfortable, or one that seems to clear most mucus, for example, sitting in a chair or lying on your side.

How many cycles of ACBT should I do each time?

When you begin doing these exercises, you might find them tiring so just one or two cycles of ACBT at a time will be enough. Then when you feel able to, you can build it up until you can do the cycle 3 or 4 times, which will take about 10 minutes, or until you get tired, or feel you have moved as much mucus as is ready to be moved at that time. Although you might find it tiring at first, if you keep doing these exercises, they should become easier as your muscles become stronger.

How often each day should I do ACBT?

You can do ACBT 2-4 times a day, or as often as you want to.

If you have mucus in your chest, you might want to try to do ACBT 3 or 4 times a day. This will stop the mucus from gathering in your lungs and may help you feel less breathless and tired.

When should I do ACBT?

ACBT can be done at any time, but some people find it useful when they get up in the morning because it helps to clear any mucus that has gathered overnight when you have been asleep. You may want to do it before you go to bed too to prevent the mucus making you cough and waking you up during at night.

Conclusion

After a critical illness it is common to feel as if breathing is more difficult to do and you may feel breathless. This is normal and this will get better as your lungs and muscles get stronger. The best way to improve your breathlessness is to pace activities (so you get a balance between being active and resting) and to gradually build up your activity levels.

If you have mucus on your lungs it is important to remove this mucus regularly throughout the day. This will stop mucus blocking your lungs and becoming infected. Doing Active Cycle of Breathing Technique and beginning to work towards doing your normal activities can help you to move mucus and make you breathe deeper so that your breathing muscles become strong again.

More information

The Association of Chartered Physiotherapists in Respiratory Care have helpful patient information leaflets, including about being short of breath;

www.acprc.org.uk/publications/patient-information-leaflets

The British Lung Foundation have useful information about breathlessness:

www.blf.org.uk/support-for-you/breathlessness

Derriford Hospital Physiotherapy department have made a video showing how to do ACBT: www.youtube.com/watch?v=XvorhwGZGm8

ICUsteps cannot accept responsibility or liability from the use of this resource.

This information sheet was written by Catherine White, Information Manager, ICUsteps, Eleanor Douglas Lecturer/Practitioner Physiotherapist, University of Nottingham and Nottingham University Hospitals NHS Trust and Ashley Quinn Ashley Quinn, Inpatient Superintendent & ITU Surgery lead Physiotherapist, Dartford and Gravesham NHS Trust.

Our information and general advice is based on experiences of former ICU patients and it should not replace the advice you receive from healthcare professionals. ICUsteps cannot accept responsibility or liability from the use of this resource. ICUsteps is a patient-led support charity. For more information, resources or to make a donation, visit our website: icusteps.org