

# Breathing Pattern Training for Children and Young People

Information for patients, parents and carers

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## Introduction

You have been referred to respiratory physiotherapy for help with your breathing.

While you are waiting for your appointment we have prepared some self-help materials in this booklet that we would encourage you to work through. These are most of the checks and exercises that we will go through in your appointment.

We ask that you go through the self-assessment Steps 1 to 4 before your appointment if possible. You can continue to work through to Step 8.

Sometimes people get in to a pattern of breathing that makes breathing harder for them. This can be noticeable for example: when you exercise, when you are in a stressful situation, or if you have an asthma attack. Usually this means you breathe too much with your upper chest and breathe a little faster than you need to.

Why might you have an unhelpful breathing pattern? We usually think that people 'just breathe', but we can get in to unhelpful breathing patterns or habits. This can happen after an infection, asthma attack or when there has been a lot of stress. Sometimes we don't know why. It's just like with sitting- we 'just sit', but we all know we can get in to habits of slouching that can give us back-ache.

We hope this leaflet will help you notice how you breathe and how you can get in to good patterns of breathing.

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## Step 1: Check your breathing

Please complete this questionnaire. Tick the box that applies to you. You will need someone to help you as a second pair of eyes.

Before you answer the questions, please follow the link and watch the “Good breathing guides in sitting and lying” to help you: [www.physiotherapyforbpd.org.uk/self-help/#videos](http://www.physiotherapyforbpd.org.uk/self-help/#videos)

<b>When sitting resting, do you breathe through:</b>	Your mouth, or a mixture of mouth and nose	Your nose
<b>Can you hear your breathing?</b>	Yes	No
Place one hand on your tummy and one on your chest: <b>Does your tummy move/rise when you breathe in?</b>	No	Yes
<b>Does your upper chest move when you breathe in?</b>	Yes	No
<b>Does your breathing have a regular rhythm?</b>	No, sometimes speeds up and slows down or some breaths are bigger than others	Yes, steady size and rate
<b>Do you sigh or yawn a lot?</b>	Yes	No

If your ticked boxes are mainly in the left hand column, there will be ways you can make your pattern of breathing easier and more efficient.

Would you pick up a bag with your little finger? No, you use your whole hand. It's the same with your breathing- there are easier, better ways to breathe.

## Step 2: Three quick tests and activity questions

These quick tests give an idea of whether you have some 'air hunger' which is common with a disordered breathing pattern. When we breathe in we take in oxygen, and when we breathe out we get rid of carbon dioxide.

Air hunger is when your body tells you that you need to breathe more than you really need to. This happens when your body has set its comfortable level for carbon dioxide too low, so it makes you breathe faster to get rid of it. This is similar to some people feeling hungry for sugary snacks all through the day; their body has set their comfortable level for sugar too high.

This video teaches you to do each test: <https://m.youtube.com/watch?v=wYiUQFz7VfA>

### Are you air hungry?

<b>Time how long you can do an easy breath hold on a normal size breath, stop when you feel the first signs of wanting a breath</b>	More than 20 seconds	Less than 20 seconds	
<b>How many breaths do you take in a minute</b>	Less than 18	18-24	25+
<b>Count as far as you can on a normal sized breath. Stop when you feel you want another breath</b>	Counted to more than 15	Did not manage to count to 15 on one breath	

If you ticked boxes mainly in the right hand column, it might be a sign you are breathing more air in and out than you need to = air hunger (Note: there may be other causes).

### How much does your breathing limit you doing these activities?

	Totally limited	Extremely limited	Very limited	Moderate limitation	Some limitation	A little limitation
<b>Competitive sport including training sessions</b>						
<b>Strenuous activities e.g. Running up stairs, running games with friends, 1 mile run, gym classes</b>						
<b>Moderate activities e.g. Walking, climbing stairs, cycling</b>						
<b>Social activities e.g. Playing outside, kicking a ball about</b>						

### Step 3: Think about stress or anxiety

Stress and anxiety are not just in our head, they are physical and real, and affect our body and our breathing.

When we are stressed, our brain sends chemical messengers flying round our body, this is known as the 'fight or flight response', red/orange zone. It increases how fast our heart beats and how fast we breathe.

If you don't fully recover from the stress these chemical messengers keep circulating, we call this chronic stress, and it means your breathing might stay faster than it needs to. You don't return to the green zone.



It is important that you think about whether there are things that stress you.

- What are your fears or worries?
- Can you chat to someone about them?

It might be worry about school work, friendships, fear of failing, fear of an asthma attack, or family things? It might be you hadn't even noticed you were stressed.

The breathing retraining can help you manage your stressed feelings and calm your brain. Our body can send a message to our brain about whether to be stressed (red) or calm (green zone). Stress makes us breathe faster, but if we choose to breathe slower we can switch on calming channels in our brain and return to the green zone.

It might be that you are not stressed or worried, but you still need breathing retraining.

### Step 4: Set your goals

Steps 1-3 were all assessing how you breathe and finding out what is challenging for you.

Now, have a think about what you would like to get from your physiotherapy? You might have more than one goal.

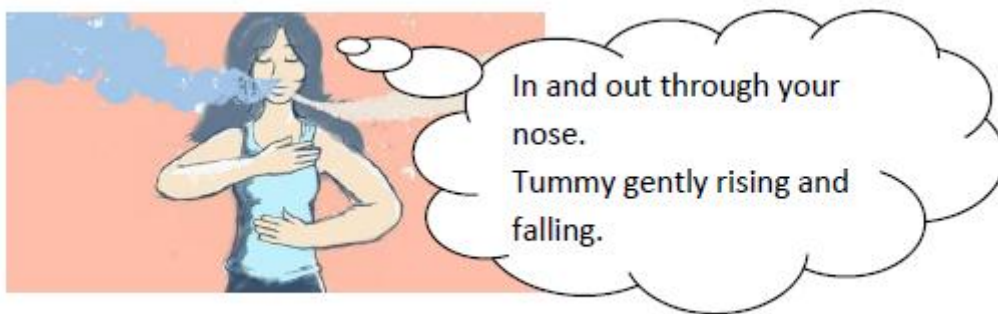
**Make a note of your goal(s) for your breathing here:**

## Step 5: Breathing retraining. Practice breathing.

This is a very important skill for your breathing. Please practice for 10 minutes twice each day.

### Part 1

1. Lie down on your back with a pillow under your head and knees. Rest one hand on your upper chest and one hand on your tummy.
2. Close your mouth and breathe through your nose, this might feel difficult at first.
3. Notice which hand is moving as you breathe, it might be one or both of them.
4. Try to direct your breath so that the hand on your upper chest doesn't move; you might need to put slight pressure through this hand to stop yourself breathing from here.
5. Keep concentrating on your breathing until you feel the hand on your tummy gently rising on the in-breath and falling on the out-breath. We call this diaphragmatic or tummy breathing.



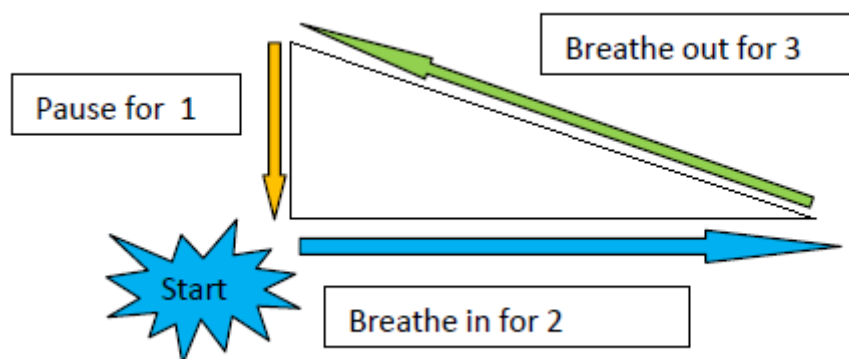
### Part 2: The breathing triangle

Have you got the hang of tummy breathing? Yes? Now, we want you to slow your breathing down like this:

- With your mouth closed, breathe in gently for a count of 2, gently out for a count of 3, pause for 1..."In 2, Out 2,3, Pause".

Breathe out (exhale) for about twice as long as you breathe in. The breathing triangle might help you.

- Start at the bottom left of the triangle. Follow the sides around the triangle to complete one breath.



### Advice for breathing retraining:

We only need small, quiet, regular breaths through our nose. We do not need to force the breath. Practice this for 10 minutes, twice per day, to train your body into a helpful pattern of breathing.

Once you can manage this breathing pattern lying down you can practice it sitting and standing up. Take time to notice your breathing during the day and try to get in to a helpful pattern. With a bit of practice, relaxed diaphragmatic breathing will become automatic and feel completely natural.

**When you feel comfortable with Step 5, move on to Step 6**

## Step 6: Practice an air diet

Practice holding your breath occasionally. Hold your breath after a normal breath out, not after taking a huge breath in (how we normally try).

So... breathe in, breathe out, hold your breath for as long as is comfortable.

Try and slowly build up how long you can hold your breath for. The right target for you will depend on your age and your starting point. Some people call this your **BOLT score**.

## Step 7: More training- Breath-hold walking and recovery

**Aim 1:** To teach your body to accept higher levels of carbon dioxide because while marching your body produces more carbon dioxide

**Aim 2:** Importantly, it will help you learn how to control and recover your breathing when you are short of breath.

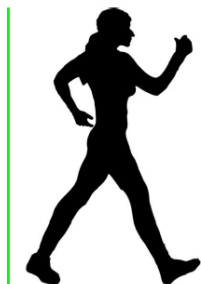
Please watch this video to show you what to do: <https://m.youtube.com/watch?v=tyFxJbArIOU>

Stand up, take a normal breath in and then cover your mouth and pinch your nose to hold your breath.

Then march energetically on the spot for up to 30 steps or less. Stop when you feel your diaphragm and breathing muscles 'kick in' to try to get another breath. You can turn 90 degrees every 5 steps to keep count.

When you stop, uncover your nose keeping your mouth closed. Put one hand on your tummy and practice diaphragmatic breathing until you have recovered. Avoid taking any huge in breaths as you recover.

Practice every day.



**Make a note of how many steps you can take while holding your breath the first time you try it:**

## Step 8: Learning to pace your breathing when you exercise

This advice is for when you need to be able to keep going when you are exercising, not a short fast sprint.

When you run, walk uphill or cycle, focus on tummy breathing, breathe in through your nose and give plenty of time for the long breath out to make space for fresh air to get in.

Think about your breathing rhythm, not letting your breathing get out of control and panting. Still aim for the out-breath to be longer than your in-breath.

Start by trying to breathe in for 2 steps and out for 2 steps (2:2). Build up to in for 2, out for 4 (2:4) and aim for 4:8. Some runners prefer 4:4. Find a rhythm that works for you while tummy breathing. When you run very hard and fast you will switch to mouth breathing.



### Swimming:

Breathing for swimming is the same pattern.

Breathe out underwater through your nose, **and**, try to coordinate your breathing with your strokes. Breathe every 2-4 strokes.

Give plenty of time for emptying your lungs on the breath out. Our lungs are like a full balloon- we need to let air out in order to get fresh air in. That is why time for the 'out breath' is so important.

Breathing while exercising your arms hard and stretched out is very challenging.

### Tips for nose breathing:

If you find it difficult to breathe through your nose

1. Keep trying and your body might work out how to open the air passages
2. You might benefit from a saline nasal spray to clear the passages such as Sterimar. Speak to your local pharmacist for advice if you are able to.

### Tips for sleeping:

Find support and advice here: [www.sleepscotland.org/](http://www.sleepscotland.org/)

### Tip for calming down when you feel anxious:

Our breath can help us access the calming part of our brain through the back door. One way to use our breath to help us feel calm is Square Breathing. This is different to the normal breathing you learnt in Step 5, use Square Breathing when you feel anxious or stressed. Find out how to use Square Breathing here: <https://youtube.com/watch?v=pfJCy-EyKp4>

## A note to you if you have confirmed asthma:

### Extra tips for exercising with asthma:

- Take your 2 puffs of your reliever inhaler before exercise
- In cold weather wear a scarf or mask over your nose and mouth
- Be aware when pollen counts are high
- Be aware if air pollution is high.

Some of your breathing difficulty may be due to your asthma.

The advice given here does not replace the advice and the inhalers you have been given to manage your asthma. Keep using your inhalers as directed by your doctor/nurse.

If you have an inefficient breathing pattern on top of your asthma, it will make things harder for you.

If you add a disordered breathing pattern on top of your asthma, it means you have to cope with asthma +1.

We hope the techniques will also give you a way to control your breathing more, so you might not need to reach for your reliever inhaler as often.

Knowing and practicing breathing can also be useful if you have an asthma attack. Stress during an asthma attack can trigger the 'fight or flight' response which makes you breathe even faster and makes your heart pound.

With practice you can learn to control the stress and switch your body to 'rest and digest' mode so that the asthma attack isn't made worse by stress and panic.

## We are here to help- next steps

You will be contacted by the Royal Hospital for Children and Young People, Edinburgh Physiotherapy Department to offer a telephone or video physiotherapy appointment. At that appointment we will work to help you reach your goals for your breathing. It isn't possible or useful to cover everything in this leaflet.

It will be helpful at that appointment if you have watched the videos suggested and have this booklet with you.

If you find the advice here difficult to understand or follow, don't worry, you will have the chance to work on it together with a physiotherapist. Having difficulty with your breathing is very stressful and we can also teach you relaxation techniques to help you cope.

If you need to speak to a physiotherapist before you receive your appointment letter you can call the physiotherapy department.

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