

# Patient information

## Hyperventilation Syndrome

### What is hyperventilation syndrome?

Hyperventilation occurs when you over breathe, i.e. if you breathe in excess of your body's needs.

Acute hyperventilation - is common at times of stress or excitement when your breathing rate increases. This may cause feelings of anxiety and physical symptoms such as breathlessness or palpitations.

Chronic hyperventilation - if your breathing pattern does not return to normal after an acute event, chronic changes in breathing pattern may occur. It may produce a variety of symptoms that may be intermittent, or continuous. Minor stresses may trigger these changes.

### Cause

This may be difficult to identify. It may be a viral illness, chronic pain, bereavement or some other stress, which may have occurred some time ago.

### Effects

A vicious cycle becomes established and the original cause is often forgotten or becomes indistinguishable from the effects.

Over breathing as a result of stress causes the delicate balance of gases (especially carbon dioxide) within our bodies to become disturbed.

A rapid, shallow or irregular breathing pattern causes carbon dioxide to be "blown off" from the lungs, in turn producing a chemical imbalance within the body which may produce many of the symptoms of hyperventilation such as breathlessness, palpitations, tingling and feelings of anxiety. The body adapts to these changes, so people who have hyperventilation may have:

**shallow, rapid or irregular breathing patterns  
or  
the changes are so subtle they are barely noticeable.**

Physiotherapy will not solve the cause or precipitating factors but it will allow you to break out of the vicious cycle.

**You can learn to control it.**

## **How do we breathe?**

We are not normally aware of our breathing unless we exercise vigorously or it becomes problematic.

As we breathe in, the lungs expand and fill up with air. When we breathe out, they decrease in size. This gives us the oxygen we need to live and gets rid of waste products such as carbon dioxide. Any changes in normal breathing patterns may therefore disrupt this fine balance.

The diaphragm is the main muscle of breathing. It sits at the lower end of the breastbone and separates the heart and lungs from the abdominal contents.

As we breathe out, the diaphragm relaxes upwards allowing the air to be expelled from the lungs.

The rib cage also moves: as we breathe in, the upper chest moves up and forwards whilst the lower chest moves up and out.

People who hyperventilate tend to have excessive upper chest movement - this uses muscles which normally only participate in breathing when you exert yourself. As this is an ineffective way of breathing it can cause neck and shoulder tension. In order to maintain adequate levels of oxygen the breathing rate increases, thus "blowing off" carbon dioxide.

## **Treatment**

This consists of breathing re-education, i.e. relearning a correct pattern of breathing and relaxation. At first this may produce some discomfort, but as you continue to practice this will pass.

## **Breathing awareness**

Assume a half-lying or sitting position, with your head and neck well supported and a pillow under your knees (your physiotherapist will advise you).

Place one hand on your abdomen and one hand on your lower chest.

Become aware of your breathing: note the size of each breath, the rate and the pattern of your breathing.

Is it fast or slow?

Shallow or deep?

Irregular or even?

Are you using the upper or lower chest?

Do your head, neck and shoulders feel relaxed? How does the rest of your body feel?

## **Relax**

Try to wear loose clothing - this will allow your diaphragm and abdomen to move freely.

Pull your shoulders down to your feet and stop.

Check that your neck feels longer.

Stretch your fingers and thumbs and stop.

Press your head into the pillow and let your jaw drop downwards.

You should now feel supported on the bed.

## **Breathing practice**

### **Aim:**

To achieve gentle, quiet, even breathing, approximately 10-12 breaths per minute when resting.

### **Try to:**

Let your upper chest relax, then take a slightly deeper breath in through your nose, letting your tummy swell forward and out.

Let the air sigh out as you breathe out.

Try to get a steady rhythm, taking the same size of breath each time.

## **The next step**

When you have got it right in lying and sitting positions, practice while in standing, walking and other activities such as bending, stair-climbing, eating and talking.

As you exercise your breath rate will increase. Remember this is normal. When you stop, check it has returned to a steady rhythm.

Talk slowly, don't say too much with one breath. Pause to take a gentle breath from your tummy before continuing.

**It does take some practice to master, but you can do it!**

**These exercises should only be carried out following instruction from your physiotherapist. He/she will advise you on when and how often they should be carried out.**

*If you would like any information regarding access to the West Suffolk Hospital and its facilities please visit the disabledgo website link below:  
<http://www.disabledgo.com/organisations/west-suffolk-nhs-foundation-trust/main>*

© West Suffolk NHS Foundation Trust