



Hyperventilation Syndrome

What is hyperventilation syndrome?

Hyperventilation syndrome (HVS) is a name given to a collection of physical and emotional symptoms, largely brought about by hyperventilation. This happens when we over-breathe.

The main signs of this are when we breathe much more quickly and more shallowly than our bodies needs. Over time, all sorts of physical changes can take place in our body. These include a decrease in carbon dioxide pressure in the alveoli (in our lungs) and arteries, an increase in arterial pH (respiratory alkalosis), constriction of cerebral arteries and increased production of lactic and pyruvic acid.

What are the symptoms of hyperventilation syndrome?

HVS can show itself in different ways. Most people with HVS will have experienced some, if not many, of the following symptoms.

Respiratory symptoms:

- breathlessness
- tightness around the chest
- fast breathing
- frequent sighing

Tetanic symptoms:

- tingling (e.g. in fingers, arms, mouth)
- muscle stiffness
- trembling in hands

Cerebral symptoms:

- dizziness
- blurred vision
- faintness
- headaches

Cardiac symptoms:

- palpitations
- tachycardia (rapid heart beat)

Temperature symptoms:

- cold hands or feet
- shivering
- warm feeling in the head

Gastrointestinal symptoms:

- sickness
- abdominal pain

General symptoms:

- tension
- anxiety

fatigue and lethargy
insomnia

Obviously, these symptoms can in some cases be due to other physical causes than HVS. This is why you may often be asked to undergo various physical tests before you are diagnosed as having HVS. Underlying physical problems have to be ruled out before your physician can be sure that you are experiencing HVS.

What are the causes of hyperventilation syndrome?

One of the main causes of HVS is anxiety which is brought on by **stress**. Stress can be brought on by all sorts of different factors. You may be the sort of person who has generally been a worrier. Or you may have had some particular recent stressful experience (e.g. bereavement, family conflict, financial problems, work problems, other major life changes) that has led to increased anxiety. This is more likely if the incident was experienced as life threatening (e.g. a work/road traffic accident or a serious illness).

Different people respond to stress in different ways. People with HVS are particularly inclined to tense the muscles of their upper body in response to stress. This can particularly affect the ability of the diaphragm to function fully. This puts extra pressure on the thoracic muscles for breathing. Prolonged overuse of these muscles can eventually lead to the feelings of breathlessness, tightness in the chest and even suffocation. Hyperventilation may occur as a reaction to these unpleasant symptoms. We start to breathe more quickly and shallowly. This could perhaps be interrupted by bursts of sighing.

Unfortunately, one of the problems faced by many people with HVS is that their symptoms can lead to further anxiety. Sometimes, people with HVS fear that their symptoms are a sign of serious illness. Other people become very anxious that they are going to collapse. This can particularly occur when outside the home. Other people become very stressed and frustrated with their symptoms. All these reactions can lead, accidentally, to making the symptoms of HVS worse than they originally were.

What can be done about hyperventilation syndrome?

The first thing that you need to do is to recognise your symptoms for what they are. If you have been diagnosed as having HVS, it means that your symptoms have been assessed as not being caused by an underlying physical problem. Certainly your symptoms are very real and can be very unpleasant but they are not life threatening.

In fact, dealing with the symptoms of HVS is very much under personal control. For some people that can feel initially disappointing. It can be a relief to feel that a treatment will take away your physical problems. This is not

usually the case with HVS. Instead, it can help for you to become your own physician and to take control of the causes and consequences of your symptoms.

There are two important things to be done about HVS. Firstly, it is necessary to cope with hyperventilation. Secondly, is to learn to cope with potentially stressful situations.

In order to learn to cope with hyperventilation, it can help to do regular breathing and relaxation exercises. Sometimes you might be referred to a physiotherapist, clinical psychologist or specialist nurse to help you develop breathing and relaxation skills. **Learning to breathe slowly and deeply is especially important for people with HVS.**

Most of the time we are not aware of our breathing. It is controlled without us even having to think about it. However, to breathe slowly and deeply to help the relaxation response you will need to practice. To be able to breathe slowly, deeply and effectively you will need to use all your lungs (not just the top part) and to expand the whole of your chest, including the muscle between your lungs and your stomach (the diaphragm muscle).

Below are some breathing exercises which will help you learn to breathe deeply. It is important that you breathe in and out at a steady rate and that you do not have to try too hard.

Exercise 1:

Practice your breathing when sitting or lying in a comfortable position. Imagine your lungs are divided into three parts. Breathe in gently through your nose. Imagine the lowest part of your lungs filling with air. If you are using your diaphragm your stomach will come out a little. Imagine the middle part of your lungs filling with air and your lungs becoming completely full. Your shoulders may rise slightly and move backwards.

Gently and slowly exhale fully and completely. Repeat the exercise three or four times.

Exercise 2:

Take a deep, full breath. Exhale slowly, fully and completely. Inhale again and count from 1 to 4 (or for as long as feels comfortable). Pause for a few seconds. Exhale slowly while counting from 1 to 4 (or for as long as feels comfortable). Repeat the exercise three or four times.

As you practice this breathing exercise, try to increase your breathing out. Counting will be helpful. For instance: in 1,2,3 out 1,2,3.

How to check your breathing pattern

To check that you are breathing deeply using your diaphragm muscle, sit or lie with your hands resting across the lowest part of your chest. Your hands should be just slightly above your waistline and have your fingertips just touching. If you are breathing deeply and expanding the whole of your chest and lungs, then your fingertips will move apart when you breathe in and together again when you breathe out.

Further important advice

- Practice diaphragmatic breathing during the day. You only need to take three or four deep breaths each time you practice to get the benefit. Do not continue deep breathing for long periods of time.
- Do not try too hard. Remember it takes time and practice to be able to achieve good breathing.
- When doing any breathing exercise, it is important to try and make the rate at which you breathe in and out a steady and a constant rate.

In order to cope with stressful situations, you may find it useful to develop a number of strategies. You may be referred to a clinical psychologist to help you with this. Sometimes it is possible to take direct action to reduce the stress. Sometimes it is possible to view situations in a different way. This may help to take a different perspective either on the particular situation that is causing you stress, or on your life more generally. Sometimes it is possible to get friends, family or work colleagues involved to support you in tackling the sources of your stress.

People with HVS find that, if they are able to cope better with the causes of their symptoms, over time their symptoms begin to reduce or even disappear. **In this way, it is possible to return to a healthier and more comfortable life.**

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