

# Hyperventilation

Respiratory department

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## Hyperventilation

Hyperventilation means breathing in excess of the body's requirements. Most people will have experienced a short period of over breathing (hyperventilation) at some time, caused by stress or over excitement. This is a perfectly normal reaction. Hyperventilation can produce a number of frightening symptoms, which can be either constant or intermittent, for example:

- Inability to take deep breath
- Anxiety, feeling of panic, impending disaster, detachment
- A rapid or irregular heart beat
- Chest pain or tightness
- Dizziness, faintness, light headedness
- Headaches, visual disturbances
- Tingling, 'pins and needles' in hands and feet
- Cramps, shakes, sweats and twitches
- Weakness, exhaustion, lack of concentration and memory, insomnia and nightmares

Patients with hyperventilation do not overbreathe on purpose rather they are often unaware of how they are breathing. Because the symptoms are so severe and physical, patients often do not believe the doctor is taking them seriously if 'hyperventilation' is proposed as a cause.

The diagnosis is established by taking a full medical history and excluding other illness or disease as a cause of your symptoms. Sometimes the doctor may attempt to reproduce the attack by asking you to take several deep breaths. If you are in hospital with an attack, a doctor may take a blood sample via an artery.

## Why does hyperventilation cause all these symptoms?

We breathe to obtain oxygen for our bodies. However, the second important reason is to breathe away carbon dioxide, which is a waste gas. If we breathe more than we need to, too much carbon dioxide is lost. This causes changes in our body's chemistry, which cause the symptoms of hyperventilation.

## Why do some people hyperventilate?

We don't know. We do know that most people who hyperventilate may have something causing them distress in their lives, even if they hadn't appreciated this consciously.

Common scenarios are bereavement, illness, marriage, divorce, family difficulties, pressure at work etc: subconsciously people react differently in these sorts of situations. Some may not sleep, go off food, drink etc and some hyperventilate without realising it.

## How do we treat hyperventilation?

First, possible causes will be investigated and if the diagnosis is hyperventilation, it is important to explain the nature of the problem and give reassurance. Hyperventilation is managed by a respiratory physiotherapist who will teach you how to control your breathing.

## Management of hyperventilation

Management is based upon:

- Re-learning your breathing pattern
- Restoring your normal breathing pattern and movement
- Conscious control of rate, volume and regularity of breathing
- Reducing anxiety and achieving relaxation

## How we breathe

Most people breathe using the diaphragm (the muscle under the lungs) as the main muscle for breathing. The only active part of respiration is breathing in. The relaxation of the inspiratory muscles and elasticity of the airways achieve breathing out. There is little movement of the upper chest and the normal rate of breathing is 12-18 breaths per minute.

## Hyperventilation

People who overbreathe tend to overuse the upper-chest, hardly managing any movement of the diaphragm. The rate of breathing varies between 15-20 breaths per minute and may rise to 30 during an attack. The rhythm is often erratic and irregular deep breaths, sighs and yawns are common. Breathing out can be forced and noisy.

## Breathing awareness

Sit comfortably in a quiet room, place one hand on your upper chest and the other over the top of your tummy, then breathe normally noting your breathing pattern.

Experiment with slight alterations in depth and rate of breathing, to distinguish the difference.

- Alternate nose and mouth breathing to feel the difference.
- Feel the passage of breath, through your nose or mouth, into your lungs then gently back the same way.
- Feel the cool air on the breath in and warm air on the breath out
- Feel the size of the breath
- Try breathing with eyes open and closed
- Check muscle tension throughout the whole body

## Low and slow

- Low, gentle controlled breath. Conscious thought about breath in or out
- Breathing less means reducing the rate or depth or both
- Slow breathing does not mean deep breathing
- Low and slow is the key

## Breathing control

- Sit well supported as this allows the diaphragm to move without the weight of your abdomen against it, as happens when lying or slouched down
- Place your hands on the front of your lower ribs
- Breathe out gently, at the same time relaxing the upper part of the chest and dropping your shoulders
- Relax and breathe slowly in through your nose and feel your tummy pushing out. Breathe out gently through the mouth, like a sigh and feel the gradual expansion of the lower ribs under your hands

Try repeating these exercises as many times as you can a day as this will make it easier if you have an attack.

Try visualising something slow and calming, or listen to music as this helps to slow and control the breathing pattern.

## Panic attacks

If your symptoms are not improving with the breathing exercises, or you are unable to perform them:

- Get a paper bag large enough to take a lung full of air (do not use a plastic bag)
- Scrunch the top of the bag and breathe fully out into it
- Re-breathe the air in the bag in and out several times, until you feel better (this will bring the carbon dioxide levels back up)
- Try leaning forward over a table with your elbows on your knees
- Continue with this for a minute, then take a breath of room air. If the symptoms persist, repeat until settled

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