



Image from: Litchfield PM, 2003  
 MRI scan showing normal levels of oxygen saturation in the brain of a healthy breather (left hand image).

The right hand image shows oxygen reduction in the same brain after one minute of hyperventilation.

**Red = most O<sub>2</sub> saturation**  
**Dark blue = least O<sub>2</sub> saturation**

The above scan shows the effect on a healthy person of over-breathing for just two minutes. The oxygen supply to the brain can be reduced by 50% and what makes the effect even worse is that the body may divert most of the blood to the lower centres of the brain to keep vital organs functioning, thereby further impairing the higher though areas from functioning normally.

### What does Buteyko do?

The Buteyko Institute Method is not about throwing away your drugs, nor does it involve physiotherapy, diaphragm breathing exercises, meditation, re-birthing, hypnotherapy, special diets, or any unproven therapeutic systems.

Buteyko is based on sound scientific concepts, published physiological and biological research and requires just a little personal commitment to achieve these results.

### What will Buteyko do for me?

- Help control your panic attacks
- Help reduce your medication
- Reduce your symptoms of asthma, sinusitis, hayfever, breathlessness, allergies etc.
- Provide you with a greater understanding of your condition and medication use
- Give you an improved performance in sport and exercises

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# Buteyko

( pronounced bew-tey-ko )

Stress Panic attacks  
 Hyperventilation



# Stress Panic attacks Hyperventilation

for

# Better Health

## Common Symptoms of Hyperventilation Panic Attacks

'Lack of air sensation'  
Chest tightness or pain  
Palpitations, pounding heart, or fast heart rate  
Feeling dizzy, light headed or faint  
Feeling 'spaced-out' or as if you are 'not with it'  
Fear of dying, losing control or going crazy  
Hot all over, sweating especially in the palms or armpits  
Mouth feeling tight and lips may form an "O" shape  
Tense muscles  
Trembling and shaking  
Visual disturbances - blurred or tunnel vision, flashes or shadows before eyes  
Nausea or stomach upsets  
Numb or tingling sensations in fingers or lips  
(Fried 1993)  
"Hyperventilation as a Cause of Panic Attacks" Hibbert 1984 outlines the theory as to why these attacks occur with overbreathing.

## Hyperventilation Starts the Panic Attack

Any stress or fright will trigger the 'fight or flight' mechanism that leads to increased breathing (hyperventilation), but without increased physical activity (running or fighting) this causes a drop in carbon dioxide (CO2) levels in the body.

This has two main physiological effects, first, as the blood becomes more alkaline, less oxygen is released to the tissue cells and more lactic acid is produced causing the breathing sensors in the brain to increase the breathing rate.

Secondly, the low CO2 levels cause smooth muscle throughout the body to spasm. Blood vessels, so affected, narrow reducing the flow of blood to the brain, for every 1mm of Hg pressure reduction of CO2 the brain receives two per cent less blood flow (Raichle 1972).

This combined with the Bohr Effect (reduced release of oxygen from the blood), can mean the brain may receive up to 50% less oxygen, which is a major stress that can result in feelings of extreme panic (Ley 1994).

The brain reacts by stimulating more breathing and if hyperventilation continues the person faints.

Once this happens the brain releases opiates and the breathing slows. (Danavi-Saubie 1978)

## Hidden Hyperventilation

Although called "Panic Attacks" not everyone will feel frightened or faint, many may simply notice that their heart beat is rapid or they may feel 'spaced-out' with sweaty palms, chest pain or a dry mouth. It is not necessary to breathe exceptionally fast during a hyperventilation attack, and while some do pant, it is common to see only upper chest breathing.

The subtlest form of hyperventilation is where the breathing appears normal with intermittent sighs, yawns and gasps. (Magarian 1982).

Some may be operating on chronically low CO2 levels, breathing is marginally faster or deeper than required, which causes mild apprehension or paranoia, and then it only takes a small stress such as an animated conversation, being in a crowd or driving the in-laws to produce more noticeable symptoms.

## Get Rid of the Panic

Once people are aware they have hyperventilation attacks, they sometimes believe that anxiety is causing the problem.

This is not true, as any emotion can initiate an attack and in fact, it would seem that rather than anxiety causing hyperventilation attacks, it is often the other way round (Gardner 1989, Lum 1975 & 1978).

You first hyperventilate then the anxiety develops as a combination of:

- The unpleasant physical sensations of hyperventilation
- Fear that you will die, or at the very least do something embarrassing
- Not knowing what is wrong with you but suspecting that it is dangerous
- Being unable to stop the feelings

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## General Advice for Coping

Don't bottle up your fear, try to express yourself effectively but tactfully, find ways to let go of the stress as it builds up inside.

Physical exercise, meditation, going to a counsellor or just talking to a good friend could help release tension.

Tranquilliser medications may be useful in the short term to take the edge off anxiety, but not in the long term because they can be addictive and less effective (Owen 1983) as well as simply masking the symptoms rather than addressing the cause.

Low blood sugar can be another trigger factor, as low blood sugar will stimulate the production of adrenaline to mobilise sugar reserves at the same time increasing the heart rate and breathing. Eat little and often, include protein and unrefined carbohydrates.

## Buteyko Helps Control Hyperventilation & the Panic

Buteyko works by retraining your breathing to conserve the carbon dioxide in your body, and by giving you techniques you can use at the first signs of panic.

Buteyko challenges the idea that deep breathing solves stress-related problems. In an effort to avoid the symptoms, people frequently start to keep away from anything that stimulates breathing such as hot stuffy rooms, caffeine or highly charged emotions. This sounds like good advice, but in reality you are shutting yourself off from life, and in the extreme you could become agoraphobic.

Restoring normal breathing patterns so that you are less likely to have an attack in the first place is the best way to overcome this problem.

*"Buteyko has lessened the frequency and severity of my panic attacks as well as improved my asthma. I have more energy and greater concentration"*  
Kerryann.