



The Buteyko breathing technique in effective asthma management

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According to the Asthma Society of Ireland Ireland is 'Top in Europe for high asthma rates. The European Respiratory Society has also noted that Ireland has a comparatively high adult mortality rate for asthma, and is at the top of the European table after Serbia, Albania, Azerbaijan, Uzbekistan and Kyrgyzstan. The situation is equally worrying for childhood asthma, with Ireland listed in the countries with the most cases of childhood wheezing and asthma.

High rates of uncontrolled asthma

According to a presentation given to the Joint Oireachtas Committee on Health and Children by the Asthma Society of Ireland on 7 February 2013:

- 60% of asthma sufferers (in Ireland) do not have their asthma under control
- 62 people died from asthma in 2011. Tragically, a large number of these deaths were preventable because asthma is a controllable disease with the right treatment and management.

The 60% cited in the first point above, is based on the HARP (Helping Asthma in Real Patients) study which found that across a number of participating GP surgeries, up to 60% of patients failed to meet international criteria for asthma control. Also, again according to the Asthma Society of Ireland, recent research has found that "more than half of Irish people with asthma are awakened at night by asthma symptoms, and nearly three-quarters of sufferers experience some limitation in their normal activities due to asthma. Worryingly, almost eight in 10 children with asthma did not have their illness under control!"

Asthma control and management guidelines

Informed self-management and adherence to prescribed treatment play a key role in the control of severe asthma. Patients and doctors/nurses need to work in partnership to achieve optimal control. Guidelines for the management of asthma vary somewhat from country to country. However, most guidelines highlight effective control of asthma as the most important goal, as a way to ensure that the asthma patient is able to lead a normal and physically active life. Essentially, this means the objectives for the patient are: (a) to be completely free of any symptoms e.g. cough, wheeze, breathlessness, (b) to attend work or school regularly and to participate fully in all activities, including sport, (c) to have restful sleep, free from night-time cough and/or wheeze, (d) to minimise the number of asthma attacks, and (e) to avoid hospital admissions.

Medication is the mainstay of asthma treatment. However, internationally there is growing interest in non-pharmacological ways of controlling asthma, and in particular, the Buteyko breathing technique (BBT).

The technique

According to Bruton and Thomas (2011), many patients have concerns about taking regular medication, particularly inhaled corticosteroids. In an article published in *Nursing Practice*, Hambleton (2013), a respiratory nurse specialist, notes that integrating the Buteyko technique into respiratory care can promote patient autonomy and reduce the need for drugs.

She states:

“Buteyko breathing technique (BBT) can be used to improve asthma control and is included in the BTS (British Thoracic Society) guidelines. It hands back control to the patient and can reduce the amount of drugs they are required to take.”

“Initially only one consultant sent me referrals for BBT. However, as I began to demonstrate the benefits for patients and successful use of the technique, other consultants have now engaged with the service.”

In an article published in *Nursing Practice*, Godfrey (2010) notes that the Buteyko breathing technique is being increasingly used in the UK’s National Health Service in the treatment of asthma. She also notes that research has demonstrated the Buteyko technique to be a safe technique that it is suitable for the majority of the population, including children (from age 4).

Background

The Buteyko Method was developed in the 1950s by a Russian medical doctor called Professor Konstantin Buteyko. Buteyko’s extensive research led him to conclude that many chronic diseases, including asthma, could be scientifically explained, in large part, as being a consequence of hyperventilation (over breathing). The goal of Buteyko breathing retraining is to reverse chronic hyperventilation and restore a healthy breathing pattern.

Buteyko postulated that if he could retrain patients who hyperventilate, so that their breathing pattern reverted towards the norm, then he could reverse diseases such as asthma. After years of experimentation, he developed the ‘Buteyko Method’ to normalize breathing.

The fundamental principle of the Buteyko theory is that chronic hyperventilation causes a loss of carbon dioxide (CO₂) in the lungs and in the blood. A deficit of CO₂ disturbs the body’s acid-alkaline balance, causing bronchoconstriction, constriction of blood vessels and smooth muscle, and poor tissue oxygenation. This is related to the Bohr effect i.e. haemoglobin’s oxygen binding affinity is inversely related both to acidity and to the concentration of CO₂. Professor Buteyko believed that reducing breathing volume and using breath-holding techniques, raised CO₂ levels and reversed bronchoconstriction, although this has not been conclusively demonstrated in published research. However, Courtney (2008) has noted that there are many other possible reasons why the method works. These reasons could include: change in symptom perception, improved sense of control, improved biomechanics of breathing, beneficial effects of low volume breathing, altered nitric oxide levels, and resetting of respiratory rhythm generation by breath-holding techniques.

Mounting evidence for effectiveness

The first clinical trial outside of Russia on the Buteyko method and asthma was published in the *Medical Journal of Australia*. The trial results showed that after 12 weeks, participants who learned and practised Buteyko breathing techniques had an average 96 per cent reduction in reliever medication, an average 49% reduction in preventer medication, and an average reduction in asthma symptoms of 71%. The people in the control group showed no significant changes in these parameters.

Following this, the results of another study were published in the *New Zealand Medical Journal*. This trial was conducted on subjects with asthma, aged 18 to 70, over a 6 month period. The Buteyko group exhibited reductions of 85% in reliever medications and 50% in preventer medications. The study concluded that the Buteyko method is a safe and efficacious asthma management technique.

A trial conducted in Glasgow had its results published in the journal *Thorax*. This trial was designed for 600 adults with asthma. 384 (64%) of the initial participants completed the trial. The results for the Buteyko group showed average reductions of over 90% for reliever medications, preventer medications and asthma symptoms after 6 months, which were maintained at 12 months.

A Canadian trial investigated the use of the Buteyko technique as an adjunct to the conventional treatment for asthma. The results of this trial were published in the journal *Respiratory Medicine*. In the trial, 129 people with asthma who were being treated with inhaled steroids; were split into 2 groups. One group was taught the Buteyko breathing method and the control group was taught breathing and relaxation techniques by a respiratory physiotherapist. After 6 months there was a very significant decrease in the use of inhaled steroids in the Buteyko group. On average, members of this group had reduced their use of daily inhaled steroids by close to 40%, with 14 out

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of 46 people (25%) stopping steroid treatment completely. By contrast, members of the control group had, on average, only reduced their medication by 7%.

In 2008, the *British Thoracic Society*, in their ‘Guideline on the Management of Asthma’, upgraded the Buteyko breathing technique in recognition of the fact that there are high quality clinical trials supporting the effectiveness of the method in reducing asthma symptoms and bronchodilator use.

In 2012, the *Agency for Healthcare Research and Quality* in the United States published a comprehensive review of 22 studies which examined evidence for whether breathing exercises and retraining techniques lead to improvements in asthma control. The review found that the Buteyko method achieves “medium to large improvements in asthma symptoms and reductions in reliever medications.”

Buteyko training programmes

A Buteyko training programme for asthma is commonly delivered in a number of sessions (usually from 3 to 5) to people experiencing asthma symptoms despite pharmacological treatment. The programme is designed to create an awareness of their breathing in participants, and to enable them to understand, control and manage their breathing. During sessions,

Buteyko's research led him to conclude that many chronic diseases, including asthma, could be explained...as being a consequence of hyperventilation

the practitioner teaches participants a series of exercises which they initially practise in sessions, with feedback and guidance from the practitioner. They are also encouraged to practise the prescribed exercises between sessions. Clients are also made aware of, and encouraged to make, potentially beneficial lifestyle changes.

Teaching nose breathing is an essential element of a Buteyko training programme. It is common for those with respiratory symptoms such as rhinitis and sinusitis, often associated with asthma, to breathe through their mouths. Clients are taught how to clear their noses and instructed to breathe through their nose when undertaking a number of breathing exercises.

The Buteyko breathing technique can be used to empower clients to self-manage their asthma. They are taught to normalise their breathing pattern at rest, and to control their breathing and limit hyperventilation when breathlessness occurs due to exertion, contact with asthma triggers or at the onset of an asthma attack. Essentially, they are taught to change their breathing pattern with the aim of breathing less (in terms of volume). The technique aims to restore the natural balance of breathing. Teaching participants how to breathe less, is facilitated by relaxation and improving control of the respiratory muscles, gradually increasing tolerance for the feeling of breathlessness, and by gaining an understanding of how external factors can affect breathing.

For course participants, the challenge is to carry out the prescribed breathing exercises on a daily basis, in order to gain benefit. In most cases, motivated and committed participants will see a benefit in the first two to three weeks. Once they begin to see the benefit, it is easier to establish a regular routine of exercises. For parents, the challenge is to encourage their children to do the exercises regularly.

Practising the prescribed breathing exercises requires a considerable commitment from the individual patient in terms of time and effort. It is not a 'quick fix'. It suits people who are motivated to be closely involved with the effective self-management and control of their asthma.

No conflict with conventional asthma management

The Buteyko breathing technique does not conflict with conventional asthma management. It is a 'complementary' behavioural technique. Initially, the benefits of treatment manifest in a reduction in symptoms and a reduction in the requirement for bronchodilators. Any reduction in medication is handled by the patient's doctor, as soon as symptoms diminish. Buteyko practitioners make it clear to clients that under no circumstances should they change or reduce their prescribed medication without first consulting their doctor.

Buteyko and practice nurses

In a recent article in *The Nursing Times*, Austin (2013) notes that some of the principles of the Buteyko method can be incorporated into asthma reviews delivered by practice nurses. Specifically, she identifies the following:

- Observe whether the patient breathes through the nose or the mouth.
- Breathing through the nose makes it difficult to overbreathe so can help to prevent hyperventilation and panic. Nose breathing takes practice and this needs to be reinforced to patients.
- Patients whose breathing is audible are likely to be hyperventilating and should be advised that breathing should be quiet.
- Explain that a dry cough is often exacerbated by mouth breathing and, although it may feel helpful, repeated coughing can lead to upper airway irritation, which can lead to further coughing.
- Explain how poor posture can change breathing; sitting slumped at a computer squashes the abdominal organs, which leads to breathing with the upper chest and through an open mouth.

If you would like to access some free videos which demonstrate the Buteyko technique, I recommend you visit the link below. The videos feature Irishman Patrick McKeown, an internationally recognised Buteyko expert.

<http://www.asthmacare.ie/freevideo.shtml>

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