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| ***Research and Clinical Trials***The link between dysfunctional breathing and asthma which was identified by Professor Buteyko in the 1950’s, is now appearing with increasing regularity in the western medical literature.**Clinical Trials*****Medical Journal of Australia (Dec 1998)***Clinical trial results published in the Medical Journal of Australia for the first clinical trial of Buteyko outside Russia (Brisbane November 1994) showed that after 12 weeks, people who learned Buteyko 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 after 12 weeks showed no significant changes in these parameters.***Thorax Medical Journal (Dec 2003 Vol 58 Sup III) “Health Education in Asthma Management - Does the Buteyko Institute Method make a difference?”***This report describes the results of the Glasgow Buteyko trial. The trial was designed for 600 adults with asthma aged between 18 and 69 years. 384 of the initial 600 participants (64%) completed the trial. The results for the Buteyko group show average reductions of over 90% for reliever medications, preventer medications and asthma symptoms after 6 months, which were maintained at 12 months. BIBH member Jill McGowan, who ran the trial, also presented these results at the British Thoracic Society Winter Conference in London on 4 Dec 2003.***New Zealand Medical Journal (12 Dec 2003, Vol 116 No 1187) “Buteyko Breathing technique for asthma: an effective intervention”***A blinded randomized controlled trial comparing Buteyko with control was conducted on 38 people with asthma aged 18 to 70 over 6 months. The Buteyko group exhibited reductions of 85% in beta 2 agonists (reliever medications) and 50% in inhaled steroids (preventer medications). The conclusion was that Buteyko is a safe and efficacious asthma management technique and has the clinical and potential pharmaco-economic benefits that merit further study. The researcher on this trial was Dr Patrick McHugh from Gisborne, NZ.***Thorax Journal 2006 000:1-7doi  101136/thx2005 054767***CA Slader, HK Reddel, LM Spencer, EG Belousova, CL Armour, SZ Basnic-Anticevich, FCK Thien, CR Jenkins.  Results after applying Buteyko techniques for 12 weeks* Reliever usage – median reduction of 86%
* Preventer usage – median reduction of 50%

***New Zealand Medical Journal Vol 119 No 1234 ISSN 1175 8716 May 2006***Patrick McHugh, Bruce Duncan and Frank Houghton, Gisborne, New Zealand. Results after applying Buteyko techniques to children with asthma for 12 weeks* Reliever usage – median reduction of 66%
* Preventer usage – median reduction of 41%
* 11 courses of prednisone given 3 months before the trial.
* 1 course of prednisone given three months after the trial.

***Proceedings of the American Thoracic Society, 2006;3:A530***Foothills Hospital Medical trial, Calgary, Alberta. May 2006. Robert Cowie. Results after applying Buteyko techniques for 6 months* Asthma control improved from 41% to 75%, an increase of 34%
* Decrease of ICS was 39%
* Elimination of ICS was 21%

***Thorax Journal Dec 2003, Vol. 58, p 674-679, City Hospital, Nottingham, UK***Cooper,Osborne,Newton,Harrison,Thompson Coon, Lewis, Tattersfield Studied Buteyko Breathing Technique & the Pink City Lung exerciser devise effect Asthma. Results after 6 months to 90 subjects with Asthma Buteyko  reduces symptoms & bronchodilator use* No change in FEV1 measurement
* No benefit was shown for the Pink City Lung Exerciser

***Dysfunctional Breathing / Role of Buteyko***The British Medical Journal of 5 May 2001 stated that *"If dysfunctional breathing is as common as our data show, facilities for breathing retraining need to be available as part of the overall management of asthmatic patients”* .Articles appearing in Australian Doctor and the Medical Observer magazines in May 2001 now seem to substantiate the fact that dysfunctional breathing is a recognised significant factor in asthma and that breathing retraining should be an integral part of asthma management. The Buteyko Institute Method is designed to correct dysfunctional breathing patterns.**Summary of Scientific Principles**The Buteyko Institute Method is scientifically based on the standard medical principles of respiration, the normalisation of breathing and the Bohr Effect.* Ideal respiration is 4-6 litres of air per minute, equivalent to approximately 10 breaths per minute.
* People with respiratory disorders have been found to breathe from 2 to several times this amount, resulting well in excess of 20,000 breaths per 24 hour day.
* Under normal circumstances, the lungs expect measured volumes of air via the nasal passage, where it has been filtered, disinfected, warmed and moisturised.
* Large volumes of untreated air, via the mouth, cause drying of airways, irritation and greater exposure to allergens viruses and bacteria.
* Hyperventilation, over breathing and mouth breathing all contribute to the 'dumping' of CO2 from the body, upsetting the O2 - CO2 balance.
* CO2 is a natural bronchodilator and correct blood and alveolar levels prevent the smooth muscle in the bronchioles, and in other parts of the body from going into spasm.
* Sustained low levels of CO2 cause the breathing centre in the medulla of the brain to reset to a level which encourages hyperventilation or over-breathing. The average person with asthma breathes around 14 litres per minute, and has a CO2 level of 30 to 36mm Hg (40mm Hg is considered the normal healthy amount).
* Buteyko exercises train people to breathe through their noses, reduce their breathing to normal levels, keep their mouths closed and retain a higher proportion of the CO2 produced by the body.
* With practice, the Buteyko method allows the person to permanently elevate their levels of CO2 causing the breathing reflex to return to normal. The CO2 level rises to the normal level of 40mm Hg pa.

**Symptoms of Dysfunctional Breathing or Hyperventilation**Many symptoms and conditions are reported in the medical literature as being either caused or exacerbated by hyperventilation. The Buteyko Institute Method therefore has significant potential to revolutionise health management in the future.

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| **Respiratory:** |   | asthma ,cough, production of mucus, blocked or runny sinuses, chronic throat tickle, shortness of breath, tightness in or about chest, sighing respiration, excessive yawning |
| **Neurovascular:** |   | disturbances of consciousness, faintness, dizziness, unsteadiness, impairment of concentration and memory, feelings of unreality, "losing mind", paresthesia, numbness, tingling and coldness of fingers, face and feet |
| **Musculoskeletal:** |   | tremors and coarse twitching movements, diffuse or localised myalgia and arthralgia, carpopedal spasm and generalised tetany (infrequent) |
| **Cardiovascular:** |   | palpitations, skipped beats, tachycardia, atypical chest pains, sharp precordial twinges, dull precordial or lower costal ache, variable features of vasomotor instability |
| **Gastrointestinal:** |   | oral dryness, globus, dysphagia, left upper quadrant or epigastric distress, aerophagy, belching, bloating, flatulence |
| **Psychic:** |   | variable anxiety, tension and apprehension, inappropriate pseudocalmness (hysterical subjects) |
| **General:** |   | sleep apnoea, snoring, easy fatigability, generalised weakness, irritability and chronic exhaustion, frightening dreams |
| **Dental:** |   | narrowed upper jaw, overcrowding, tooth decay and gum disorders |

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