ButeykoClinic.com

Chronic hyperventilation-asthma, snoring & sleep apnoea

Patrick McKeown, author of

"Sleep with Buteyko"

&*"Buteyko meets Dr Mew"*

Rhinitis/mouth breathing & snoring/ sleep apnea

"Men and women with nasal obstruction, especially chronic night time symptoms of rhinitis, are significantly more likely to be habitual snorers, and a proportion also may have frequent episodes of apnea, indicative of severe sleep-disordered breathing."

Young et al. Nasal obstruction as a risk factor for sleep-disordered breathing. *Journal of allergy and clinical immunology.* 1997 Feb;99(2):S757-62.

"Open-mouth breathing during sleep is a risk factor for obstructive sleep apnea (OSA) and is associated with increased disease severity and upper airway collapsibility. Results suggest that the more elongated and narrow upper airway during open-mouth breathing may aggravate the collapsibility of the upper airway and, thus, negatively affect OSA severity."

Kim EJ, Choi JH, Kim KW, Kim TH, Lee SH, Lee HM, Shin C, Lee KY, Lee SH.
The impacts of open-mouth breathing on upper airway space in obstructive sleep apnea: 3-D MDCT analysis. European Otorhinoaryngol. 2010 Oct 19.

"Nocturnal nasal congestion is a strong independent risk factor for habitual snoring, including snoring without frank sleep apnea."

Young et al. Chronic nasal congestion at night is a risk factor for snoring in a population-based cohort study. *Internal Medicine* 2001 Jun 25;161(12):1514-9.

"Patients with complaints of snoring or sleep apnea can easily breathe through the mouth during sleep, and that chronic nasal obstruction may induce obstructive sleep apnea."

Ohki M et al. Relationship between oral breathing and nasal obstruction in patients with obstructive sleep apnea.

Acta Otolaryngology Suppl. 1996;523:228-30

"In predisposed individuals, OSA, sleep fragmentation, and the sequelae of disturbed sleep often result from nasal obstruction. Since breathing through the nose appears to be the preferred route during sleep, nasal obstruction frequently leads to nocturnal mouth breathing, snoring, and ultimately to OSA."

Scharf MB, Cohen AP *Diagnostic and treatment implications of nasal obstruction in snoring and obstructive sleep apnea*. Allergy Asthma and Immunology. 1998 Oct;81(4): 279-87; quiz 287-90.

"The presence of nasal obstruction will most likely have an impact on the severity of sleep-disordered breathing. Identification of nasal obstruction is important in the diagnostic work-up of patients suffering from snoring and sleep apnea."

Pevernagie DA et al Sleep, breathing and the nose *Sleep Medicine reviews*. 2005 Dec; 9(6):437-51

"Nasal congestion, which is one of the most bothersome and prevalent symptoms of AR, is thought to be the leading symptom responsible for rhinitis-related sleep problems."

Storms W, *Allergic rhinitis-induced nasal congestion: its impact on sleep quality.* Prim Care Respir J. 2008 Mar;17(1):7-18.

"Rhinitis alone is associated with mild OSA, but commonly causes microarousals and sleep fragmentation. Reduction of nasal inflammation improves sleep quality and subsequent daytime sleepiness and fatigue."

Staevska MT et al. Rhinitis and sleep apnea.

Allergy Asthma Report 2004 May;4(3):193-9.

Rhinitis and children's sleep

"Allergic symptoms, daytime mouth breathing, shaking the child for apnea, restless sleep and hyperactivity were significant and independent risk factors and sleep-related symptoms for Habitual Snoring."

Sahin U et al. Habitual snoring in primary school children: prevalence and association with sleep-related disorders and school performance. *Medical Principals and Practice.* 2009;18(6):458-65.

"Allergic rhinitis is more than just sneezing and an itchy nose. Complications of this disease are numerous and can have a significant impact, both mentally and physically. Mental functions such as learning, sleep and activity levels can deteriorate, and the eustachian tubes, sinuses and airway functions can be affected."

Borres MP. *Allergic rhinitis: more than just a stuffy nose*. Acta Paediatr. 2009 Jul;98(7):1088-92. Epub 2009 Apr 17.

Children who mouth breathe:

"a mouth breather lowers the tongue position to facilitate the flow of air in to the expanding lungs. The resultant effect is maldevelopment of the jaw in particular and deformity of the face in general. Setting of the teeth on the jaw is also affected. All these make the face look negative."

Care of nasal airway to prevent orthodontic problems in children

J Indian Med association 2007 Nov; 105 (11):640,642)

David (photo courtesy Dr John Mew)

Ten-year-old boy is a nose breather and has a good-looking, broad face with everything in proportion.

David's story

On the boy's fourteenth birthday, he was given a gerbil as a present. Soon after, his nose began to block, causing him to breathe through his mouth.

David aged 17 years

"Oral breathing in children may lead to the development of facial structural abnormalities associated with SDB. We postulate that the switch to oronasal breathing that occurs with chronic nasal conditions is a final common pathway for SDB."

Rappai M et al. The nose and sleep-disordered breathing: what we know and what we do not know. *Chest* 2003 Dec;124(6):2309-23.

Rhinitis, snoring and ADHD

"Most children with ADHD displayed symptoms and skin prick test results consistent with allergic rhinitis. Nasal obstruction and other symptoms of allergic rhinitis could explain some of the cognitive patterns observed in ADHD, which might result from sleep disturbance known to occur with allergic rhinitis."

Brawley A, et al. *Allergic rhinitis in children with attention-deficit/hyperactivity disorder.* Ann Allergy Asthma Immunol 2004 Jun;92(6):663-7.

"Children who mouth breathe typically do not sleep well, causing them to be tired during the day and possibly unable to concentrate on academics. If the child becomes frustrated in school, he or she may exhibit behavioural problems."

Dr Yosh Jefferson "*Mouth breathing leads to problems with behaviour, sleep, health.*" *Published April 18th 2010 in ADHD*

"Sleep disturbances, poor school performance, and hyperactivity are all mental complications seen in many children related to their nasal allergies."

Blaiss MS.Pediatric allergic rhinitis: physical and mental complications. *REVUE DU PRATICIEN*. 1996 Apr 15;46(8):975-9.

"Atopy was the strongest risk factor for habitual snoring in Singapore, and the effect was cumulative. Children attending psychiatric services in Singapore may also have sleep disorders, the highest prevalence being in children with attention deficit hyperactivity disorder."

Chng SY. Sleep disorders in children: the Singapore perspective. *Ann Acad Med Singapore*. 2008 Aug;37(8):706-9.

"Sleep quality can be significantly impacted by nasal congestion, a common symptom related to allergic rhinitis (AR). This may lead to decreased learning ability, productivity at work or school, and a reduced quality of life."

Davies et al A practical approach to allergic rhinitis and sleep disturbance management. *Allergy and Asthma proceedings* 2006 May-Jun;27(3):224-30.

"Inattention and hyperactivity among general paediatric patients are associated with increased daytime sleepiness and-especially in young boys-snoring and other symptoms of SDB. If sleepiness and SDB do influence daytime behaviour, the current results suggest a major public health impact."

Chervin rd et al. Inattention, hyperactivity, and symptoms of sleep-disordered breathing. *Pediatrics* 2002 Mar;109(3):449-56.

Poor Awareness

"The vast majority of health care professionals are unaware of the negative impact of upper airway obstruction (mouth breathing) on normal facial growth and physiologic health."

General dentist: Mouth breathing: adverse effects on facial growth, health, academics and behaviour. JeffersonY, 2010 Jan- Feb; 58 (1): 18-25

Asthma & sleep apnea – the link

"approximately 74% of asthmatics experience nocturnal symptoms of airflow obstruction secondary to reactive airways disease."

Bonekat HW, Hardin KA, *Severe upper airway obstruction during sleep.* Clin Rev Allergy Immunol. 2003 Oct;25(2):191-210.

88% of patients in the severe asthma group, 58% of patients in the moderate asthma group, and 31% of patients in the controls without asthma group had more than 15 apnoeic events per hour.

Julien JY, Martin JG, Ernst P, Olivenstein R, Hamid Q, Lemi?re C, Pepe C, Naor N, Olha A, Kimoff RJ.*Prevalence of obstructive sleep apnea-hypopnea in severe versus moderate asthma.* J Allergy Clin Immunol. 2009 Aug;124(2):371-6. Epub 2009 Jun 26.

"Obstructive sleep apnea-hypopnea was significantly more prevalent among patients with severe compared with moderate asthma, and more prevalent for both asthma groups than controls without asthma."

Julien JY, Martin JG, Ernst P, Olivenstein R, Hamid Q, Lemi?re C, Pepe C, Naor N, Olha A, Kimoff RJ.*Prevalence of obstructive sleep apnea-hypopnea in severe versus moderate asthma.* J Allergy Clin Immunol. 2009 Aug;124(2):371-6. Epub 2009 Jun 26.

"Study showed an unexpectedly high prevalence of OSA among patients with unstable asthma receiving long-term chronic or frequent burst of oral corticosteroid therapy."

Tov N, Solomonov A, Rubin AH, Harlev D, Yigla M *Difficult-to-control asthma and obstructive sleep apnea.* J Asthma. 2003 Dec;40(8):865-71

"Association of Obstructive Sleep Apnea Risk With Asthma Control in Adults," which found from a study of 472 asthmatic patients that poorly controlled asthma resulted in a threefold increase in the risk of obstructive sleep apnea.

Teodorescu M, Polomis DA, Hall SV, Teodorescu MC, Gangnon RE, Peterson AG, Xie A, Sorkness CA, Jarjour NN. *Association of obstructive sleep apnea risk with asthma control in adults.* Chest. 2010 Sep;138(3):543-50

Sleeping position

During a study of 574 patients with OSAS, researchers found that there were at least double the amount of apneas/ hypopneas when patients slept on their back rather than their sides. *"Body position during sleep has a profound effect on the frequency and severity of breathing abnormalities in OSA patients."*

Oksenberg A, Silverberg DS, Arons E, Radwan H. *Positional vs nonpositional obstructive sleep apnea patients: anthropomorphic, nocturnal polysomnographic, and multiple sleep latency test data.* Chest. 1997 Sep;112(3):629-39.

2,077 OSA patients over a period of ten years, it was found that 53.8% had at least twice as many breathing abnormalities while sleeping in the supine (back) position compared with sleeping on their side.

Oksenberg A, Arons E, Greenberg-Dotan S, Nasser K, Radwan H. *[The significance of body posture on breathing abnormalities during sleep: data analysis of 2077 obstructive sleep apnea patients].* [Article in Hebrew] Harefuah. 2009 May;148(5):304-9, 351, 350.

"Even in patients with severe OSA who have a high number of apneic events in the supine and lateral posture, the apneic events occurring in the supine position are more severe than those occurring while sleeping in the lateral position. Thus, it is not only the number of apneic events that worsen in the supine sleep position but, probably no less important, the nature of the apneic events themselves."

Oksenberg A, Khamaysi I, Silverberg DS, Tarasiuk A. *Association of body position with severity of apneic events in patients with severe nonpositional obstructive sleep apnea.* Chest. 2000 Oct;118 (4):1018-24.

About the Buteyko Method?

- Discovered in 1952 by Russian Dr Konstantin Buteyko
- Buteyko discovered the disease of "Over breathing"
- Brought to the West in early 1990s.
- More popular as a treatment for asthma, rhinitis, snoring, sleep apnoea
- Six published trials for asthma, including inclusion in British Thoracic Society guidelines 2008

"Noisy and deep" breathing of an asthmatic had always been considered an outcome of the disease. Nobody could even suspect that "deep breathing" was the cause of bronchial asthma, and increased depth of breathing could provoke the appearance of the symptoms of the disease".

K P Buteyko MD

More specifically: over-breathing /chronic hyperventilation

- Breathing a volume of air greater than metabolic requirements. In other words, breathing too much.
- During prolonged overbreathing, the respiratory centre in the brain is reset to maintain the habit.
- Prolonged hyperventilation (for more than 24 hours) seems to sensitize the brain, leading to a more prolonged hyperventilation.

What causes overbreathing?

- Processed foods / overeating
- Lack of exercise
- Stress
- Belief good to big breathe
- High temperatures of houses
- Public speaking- school teachers, sales etc.
- Asthma – (symptoms- vicious circle)

Overbreathing traits

- Breathing through the mouth
- Hearing breathing during rest
- Sigh regularly
- Regular sniffing
- Irregular breathing
- Taking large breaths prior to talking
- Yawning with big breaths
- Upper chest movement
- Noticeable breathing movement

What happens when you breathe too much?

- Airways constrict- asthma, snoring, rhinitis, sleep apnoea

- Blood vessels constrict/ Release of oxygen from red blood cells is reduced- fatigue, poor concentration, anxiety, stress, depression, ADHD

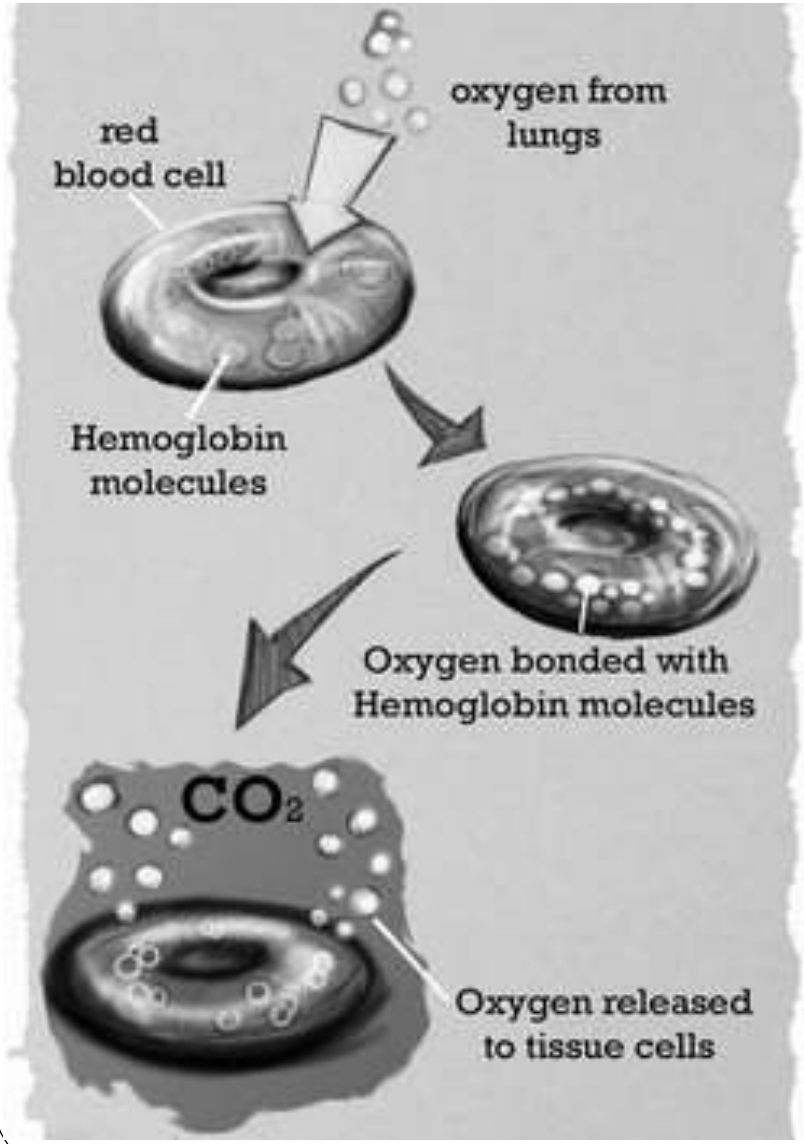
What is snoring?

Snoring is noisy breathing during sleep caused by the exchange of a large volume of air through a narrowed space, which in turn causes the tissues of the nose and throat to vibrate.

What is obstructive sleep apnoea?

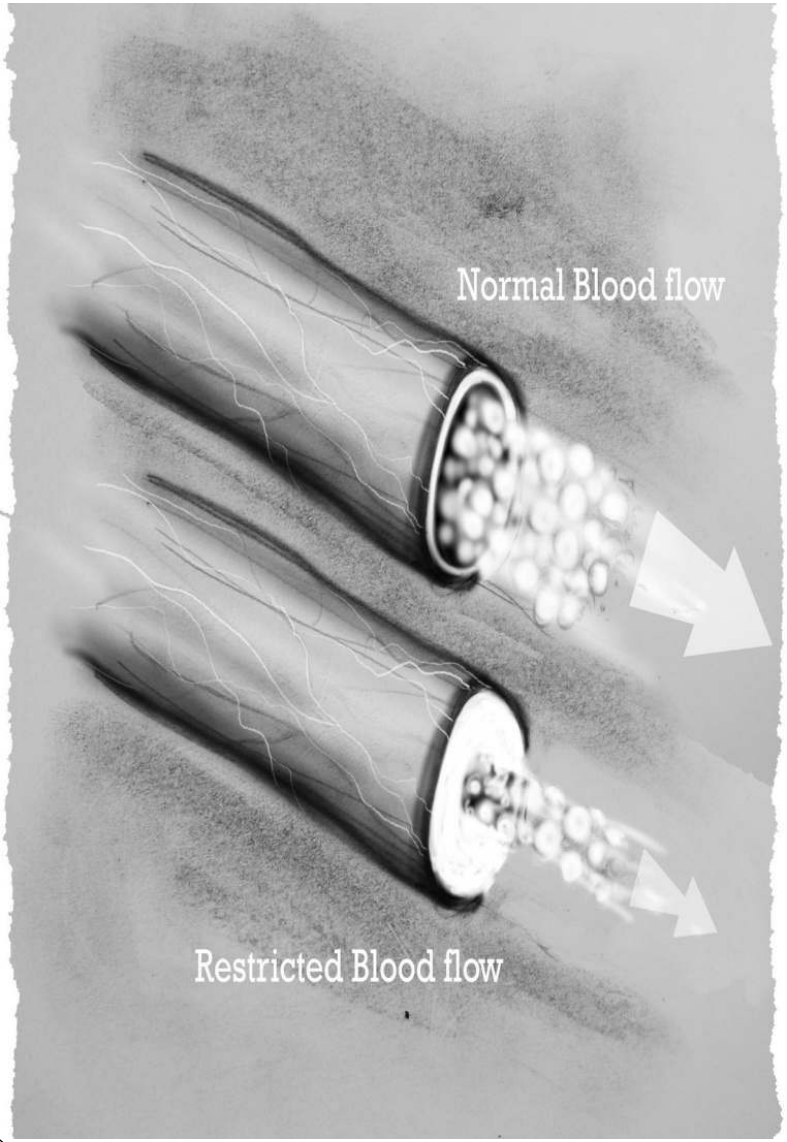
Obstructive sleep apnea is the cessation of breathing during sleep due to obstruction of the upper airway and is influenced by narrow airways, nasal obstruction and negative pressure created during large volume breathing.

The Bohr effect



- Heavy breathing causes a loss of carbon dioxide from the lungs, blood, tissues and cells.
- This results in less oxygen being released from the blood into the tissues and organs.
- The heavier you breathe, the more your body is being starved of oxygen.

Blood vessel constriction



"Every 1 mmHg drop of arterial CO_2 reduces blood flow to the brain by 2%."

Haughe et al 1980 cited in Multidisiplinary approaches to breathing pattern disorders by Leon Chaitow, Dinah Bradley and Christopher Gilbert

The extent of blood vessel constriction depends on genetic predisposition but has been estimated by Gibbs (1992) to be as much as 50% for those with anxiety and panic attacks. This finding is also supported by Ball & Shekhar (1997).

Cited in Anxiety Free: Stop worrying and quieten your mind by Patrick McKeown

"breathing too much makes the human brain abnormally excited due to reduced CO2 concentrations. As a result, the brain gets literally out of control due to appearance of spontaneous and asynchronous ('self-generated') thoughts." Balestrino and Somjen (1988) in their summary directly claimed that, "*The brain, by regulating breathing, controls its own excitability*."

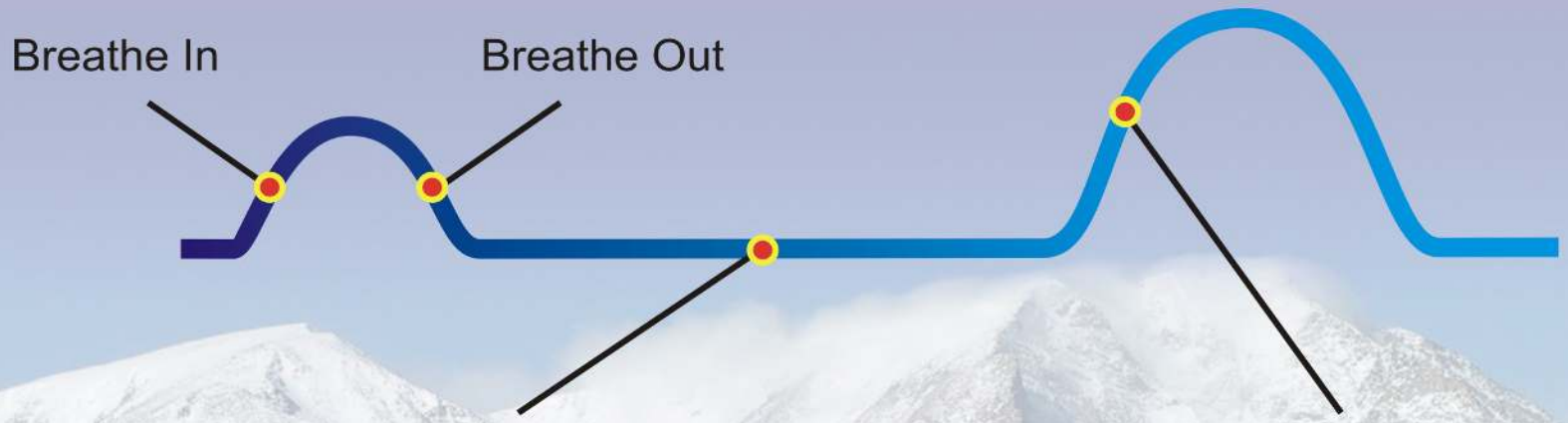
Cited in Anxiety Free: Stop worrying and quieten your mind

Buteyko Method teaches how to;

- Unblock the nose
- Switch from mouth to nasal breathing
- Correct breathing volume to more normal levels using breathing exercises aimed at promoting hypoventilation
- Various guidelines regarding physical exercise, diet, stress and sleeping.

Unblocking The Nose

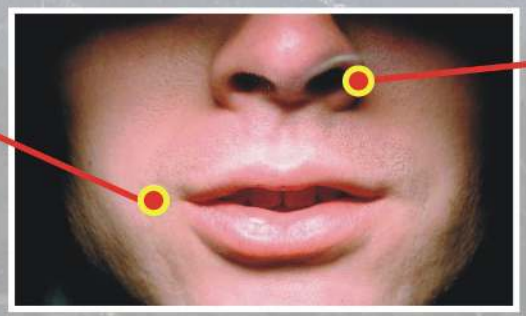
The nose gets blocked due to over-breathing
- that is why we have the mouth open in the first place



Hold breath for as long as possible
Nod head up and down

Take breath in and calm
breathing as quickly as possible

MOUTH OPEN
Big Space



NOSTRILS
Smaller Space

How to Close Your Mouth during sleep

- Wear 3M one inch Micropore tape across your lips
- Tear off about six inches or so
- Fold tab at top of tape, to make removal easier
- Close your mouth and apply tape horizontally
- To see a video of correct sleep – look at

www.youtube.com/buteykodvd

What is normal sleep?

Normal sleep

Healthy non-snorers breathe quietly through their nose. Their sleep is deep and undisturbed, and they wake up refreshed.

Not normal sleep

People who breathe heavily during the night experience a wide array of symptoms, such as snoring, sleep apnoea, disrupted sleep, insomnia, needing to use the toilet, and waking up fatigued with a dry mouth and a possible blocked nose.

To experience a good nights sleep with no snoring, it is essential to breathe quietly and through the nose!

Reflection

- Would you snore if your breathing was quite, gentle, calm, relaxed and easy?

- Would there be less negative pressure on the airways to close (OSA) if breathing was quite, gentle, calm, relaxed and easy?

Expected results from Buteyko Method

- 75% less snoring in two weeks
- Deeper sleep!
- Improved energy levels

Irish Independent article
Friday Aug 19 2011

"I find now that I'm sleeping better and I have the energy to exercise which hopefully will help me lose the weight which contributed to the sleep apnoea in the first place.

"Thanks to identifying the problem and getting help, I feel like I've kicked snoring and changed my life. I'd advise anyone else to do the same."


"That's all Folks"

USA Buteyko educators

www.ButeykoClinic.com

www.Buteykoeducators.org

www.Buteykonyc.com

www.Correctbreathing.com

www.ButeykoClinic.us

Video segments

www.Snoring.ie

www.youtube.com/Buteykodvd

Books by Patrick McKeown; available from Amazon.com or Buteykoclinic.com

"Sleep with Buteyko"

"Buteyko meets Dr Mew"

"Close Your Mouth"