

# Breath of Fresh Air

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Information, news and advice for improving asthma well-being

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## Breathing Techniques in Asthma: Buteyko and Beyond

If you've ever suffered an asthma attack, you already know a great deal about breathing and asthma. When you feel unable to get enough air, you find yourself breathing rapidly. It is a different sensation than the rapid breathing that occurs when your lungs are working normally and you've just run up three flights of stairs. During an asthma attack, because of narrowing of the breathing tubes you have to work extra hard to pull air in, and emptying your lungs is abnormally slow. Often you have to take a breath in before you have fully emptied out the air inhaled on previous breaths. Add to this the potential for panic — air hunger is frightening — and breathing may become even more rapid.

Here's a question for the scientists among us. If a person with asthma could breathe more slowly, would the asthma get better; or is it the other way around, if the asthma got better, one would start breathing more slowly? A young doctor in Russia in the early 1950s, Dr. Konstantin Buteyko, observed the relationship between rapid breathing and more severe disease in a variety of conditions and wondered whether teaching patients to breathe more slowly and less deeply might help these conditions, including asthma. He encouraged his asthmatic patients to take shallow breaths and extend the time between breaths. As much as a patient could, he was encouraged to breathe through his nose, even using the technique of taping the mouth at night with a porous adhesive tape. This approach was applied not as a method to treat asthmatic attacks so much as an everyday breathing technique to help reduce the severity of asthmatic symptoms on

a daily basis. It became known as the Buteyko breathing technique.

### Buteyko breathing technique

The Buteyko technique became popularized 20 years ago in Australia (after an Australian businessman traveling in Russia found it helpful for his asthma). It has experienced a recent resurgence of interest thanks to videos dem-

onstrating the technique that are available on the Internet ([www.youtube.com](http://www.youtube.com), search "Applying the Buteyko Method ButeykoDVD") and a *New York Times* "Personal Health" feature article written by Jane Brody

(Nov. 2, 2009). The Buteyko Institute of Breathing and Health is a commercial operation with an attractive website ([www.buteyko.info](http://www.buteyko.info)) and multiple practice centers operating throughout the country. But does breathing training help to improve asthma control?

There is some scientific rationale to Dr. Buteyko's advice. Rapid breathing is associated with low levels of carbon dioxide in the blood and in the bronchial tubes; low levels of carbon dioxide promote constriction of the bronchial tube muscles (and narrowing of the breathing passageways) whereas high levels of carbon dioxide foster dilation of these muscles. And breathing through one's nose is a good strategy to warm, humidify, and filter the inspired air before it reaches the bronchial tubes. Still, does slow, shallow breathing and nasal breathing at night help to control asthma? One could argue that slow and shallow breaths might be harmful. Taking a deep breath helps to relax the bronchial muscles in asthma; shallow breaths can lead

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to greater tightening of the muscles by allowing tighter chemical bonds within the muscle fibers. And does breathing through one's nose at night really make a difference?

### Scientific evaluation

Your doctor at Partners Asthma Center tries to keep an open mind when thinking about alternative and complementary strategies for treating asthma, but he or she will always be drawn back to the scientific method. What does a balanced study using the scientific method say about the Buteyko breathing technique. There are many aspects to Buteyko teachings, including diet, posture, and relaxation techniques. The scientific method seeks to dissect out the impact of particular components and test their effect, using measurable outcomes. Here are two examples, neither of which supported the Buteyko approach. In a randomized, controlled study of teaching slower breathing (increased breathhold times) to patients with asthma, the blood carbon dioxide in patients who received the training did not in fact increase toward normal, as predicted by Buteyko. In fact, just the opposite was observed. Another recently published experiment (in *Respiratory Medicine*, June, 2009) found that mouth taping at night (to encourage nasal breathing) was of no benefit in improving asthma control. And a summary analysis by the highly reputable Cochrane Database group that reviewed the scientific literature published up until 2000 found unconvincing the evidence of benefit from breathing training exercises. They concluded: "No reliable conclusions can be drawn concerning the use of breathing exercises for asthma in clinical practice."

### The "medical anecdote"

And so we are left with the evidence of the "medical anecdote," the story about the benefit (or harm) of something that one individual received as treatment. In the case of Jane Brody's article in the *New York Times*, it was the story of her friend, a maker of

musical instruments, whose severe asthma dramatically improved after a series of lessons in shallow breathing from a Buteyko practitioner. There is a danger, of course, in generalizing from one person's experience. Was the improvement in asthma control that he experienced due to the breathing technique that he was taught or some other change in his life that might have been taking place at the same time? Cause and effect, or coincidence? Another medical anecdote, published in the *Medical Journal of Australia*, told the opposite story in an article entitled, "Severe allergen-induced asthma despite the use of Buteyko breathing technique."

Medical anecdotes represent shaky ground for doctors (and their patients). On the one hand, they are often compelling and memorable stories, far easier to remember than dry medical statistics, and they may teach an important truth pertinent to other persons with the same condition. On the other hand, they may represent unique experiences, filtered through the distorting lens of "well-wishers" and "eternal optimists," providing false hope and wasteful expense, based at best on pseudo-science and at worst on commercial exploitation (as was the case for laetrile, promoted as a cure for cancer in the 1960s, until it was shown to be chemically related to a natural extract of avocados and of no benefit in the treatment of cancer). As any watcher of late-night television "info-mercials" knows, attractive product promotions combined with testimonials of effectiveness do not make a reliable and worthwhile product. When it comes to your health, a spoonful of skepticism may be good medicine.

## Breath of Fresh Air

Editor-in-chief

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## Partners Asthma Center's 20th Anniversary Gala

On October 1, 2009 we celebrated the 20<sup>th</sup> Anniversary of the founding of our Asthma Center. In 1989 allergists and pulmonologists specializing in asthma care began a collaboration, initially known as the Longwood Medical Area Adult Asthma Center, that has grown to include 5 hospitals (Brigham and Women's, Massachusetts General, Faulkner, and Newton-Wellesley Hospitals and North Shore Medical Center) and more than 50 physicians. To celebrate our 20<sup>th</sup> Anniversary, we held a Dinner-Dance and Silent Auction at the Marriott Hotel in Newton.

The following patients at Partners Asthma Center were honored as our 2009 Asthma Awardees for their outstanding achievements: Bernadette Izzard-Stinson, police officer in Boston; Shannon Silvia, student and competitive figure skater; and Maureen Delpero, Professor of Early Childhood Education.

Our Partners Asthma Center 2009 Honoree was the Honorable Jeffrey Sánchez, Massachusetts

State Representative (15<sup>th</sup> Suffolk District) and Chair of the Joint Committee on Public Health. Mallika Marshall, HealthWatch Reporter for WBZ 4 News and primary care physician at Massachusetts General Hospital, kindly served as our Mistress of Ceremonies.

This year we presented a special award, the Lifetime Achievement in Asthma Award, to Dr. Albert Sheffer, allergist at Partners Asthma Center. We sought to give recognition to his decades-long devotion to the care of patients with asthma and allergies, as well as his scientific research and his national and international leadership in developing guidelines for the treatment of asthma.

Many people contributed to the success of our celebration. We give particular thanks to our patients who served on the event planning committee and worked tirelessly to ensure a successful evening: Emilia Fusco and Denyce Smith.



*Dr. Sheffer receiving the Lifetime Achievement Award*

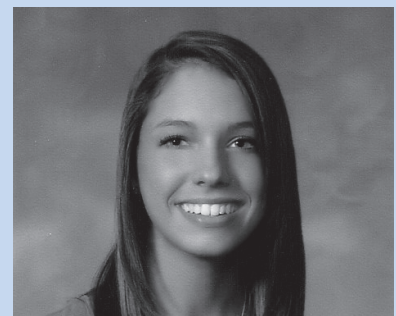
### Our 2009 Asthma Outstanding Achievement Awardees:



Maureen Delpero



Bernadette Izzard-Stinson



Shannon Silvia

## News about Asthma

### Out with the old

In December, 2008, albuterol with chlorofluorocarbon propellants (CFCs) was taken off the market, at the mandate of the Food and Drug Administration. Only albuterol inhalers containing hydrofluoroalkane propellants (HFAs) could be sold. These are the brand name al-

buterol inhalers called ProAir, Proventil, and Ventolin; there is no generic albuterol-HFA inhaler yet available.

Other manufacturers of medications delivered from inhalers using CFCs are now facing the same challenge. Make their medication available using an environmentally safe propellant such

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*News about Asthma, from p. 3*

as HFAs or cease manufacturing their product. Some have chosen the latter course. Thus, the manufacturers of the following asthma medications have announced that they will no longer produce their CFC-containing product and have not been able to create an alternative. When the current supply is consumed, no more of the medication will be available in metered-dose inhaler form. These include the quick-acting bronchodilator, metaproterenol (Alupent); the inhaled steroid, triamcinolone (Azmacort); and the mast cell stabilizers, cromolyn (Intal) and nedocromil (Tilade). Alternative quick-acting bronchodilators and inhaled steroids are available. Of interest, there exist no alternative medications in the class considered mast cell stabilizers. Cromolyn (Intal) is still available as a liquid for nebulization.

### **Preliminary approval for bronchial thermoplasty**

In October an advisory panel recommended to the Food and Drug Administration that it approve use of bronchial thermoplasty for the treatment of severe, persistent asthma. Bronchial thermoplasty involves a medical device used to reduce the mass of muscle in the muscle bundles surrounding the bronchial tubes. In a series of three outpatient bronchoscopies separated by three weeks, radiofrequency energy is applied to the bronchial tubes (and surrounding muscles) via a catheter with an electrode basket at the end.

One of the physicians at Partners Asthma Center (Dr. Michael Wechsler) participated in one of the research experiments that convinced the advisory panel to recommend approval for this procedure. In the experiment one group of patients received bronchial thermoplasty and the other group received pretend (sham) procedures (in which catheters were introduced into the bronchial tubes during bronchoscopy but no radiofrequency energy was administered). Overall, patients who received bronchial thermoplasty felt better, had fewer severe exacer-

bations after completion of treatment; fewer emergency room visits; and fewer days missed from work or school. The advisory panel recommended that FDA approval for bronchial thermoplasty be made contingent on long-term follow-up of treated patients to assess the duration of benefit and long-term safety; and that patients not receive a second series of thermoplasty treatments until more information is available about the safety and effectiveness of re-treatment.

### **Potential concern about heart disease and strokes associated with omalizumab (Xolair)**

To test the long-term safety of the anti-asthma medication, omalizumab (Xolair), its manufacturers (Genentech and Novartis) are conducting a five-year study comparing the outcomes in approximately 5000 patients receiving omalizumab injections and 2500 similar patients not receiving them. The study has not yet been completed. However, an interim safety report found that patients in the omalizumab-treated group had more adverse events involving heart, brain, and blood vessels than did the control group. These events included ischemic heart disease, cardiac arrhythmias, cardiomyopathy and heart failure, pulmonary hypertension, strokes, and blood clots.

The study is continuing, and the FDA has not issued any warnings about the medication's safety. They continue to review details of this preliminary safety report. It is possible, for instance, that patients who received omalizumab had a greater risk for heart and brain disease when they entered the study than did patients who did not receive the drug. It remains uncertain as to whether the medication *caused* these harmful effects. If you wish to read more about this issue, an FDA website for healthcare professionals is accessible to you at:

<http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm172218.htm>.

## New Physician Members of Partners Asthma Center

It is with great pride that Partners Asthma Center welcomes the following new members to its ranks:



**R. Scott Harris, M.D.**  
Pulmonary Medicine  
Massachusetts General Hospital  
Cox 2  
(617) 726-1721



**Aran Kadar, M.D.,**  
Pulmonary Medicine  
Newton-Wellesley Hospital  
3 North  
(617) 243-6640



**Shamsah Kazani, M.D.,**  
Pulmonary Medicine  
Brigham and Women's Hospital  
20 Patriot's Place, Foxboro  
(508) 718-4010



**Tanya Laidlaw, M.D.,**  
Pediatric and Adult Allergy, Brigham and  
Women's Hospital  
850 Boylston Street, Suite 540  
(617) 732-9850



**Angela Rogers, M.D.,**  
Pulmonary Medicine  
Brigham and Women's Hospital  
(not currently seeing patients in the office)



**Sunita Sharma, M.D.,**  
Pulmonary Medicine  
Brigham and Women's Hospital  
(not currently seeing patients in the office)

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- Send us an e-mail at [asthma@partners.org](mailto:asthma@partners.org). Send your name, postal address, and e-mail address and indicate that you would like to receive an electronic version of *Breath of Fresh Air*; or
- Go to our website, [www.asthma.partners.org](http://www.asthma.partners.org), and sign up at the Constant Contact link; or
- Complete a written file card at your next office visit and hand it to the office secretary.

*All of us at Partners Asthma Center take this opportunity to wish you a  
Healthy, Happy, and Wheeze-Free New Year.*



### *Breath of Fresh Air*

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