

# Breath of Fresh Air

Volume 11, No. 1

Information, news and advice for improving asthma well-being

Summer 2008

## National Asthma Guidelines: A Stepped Approach to Asthma Therapy

In the last issue of *Breath of Fresh Air*, we discussed the subject of asthma control. The goal of asthma care is to ensure that your asthma is well-controlled, by which we mean infrequent symptoms (day and night), the ability to exercise without limitation due to your breathing, good lung function (as measured, for instance, with a peak flow meter), and rare exacerbations of your asthma (“asthma attacks”). In this article we review how to go about achieving this goal—in accordance with the recommendations of the Expert Panel of the National Asthma Education and Prevention Program in their most recent (3rd) set of guidelines, released in August, 2007.



The National Guidelines lay out a six-step approach to treating asthma, from occasional use of quick-acting bronchodilators like albuterol (Pro-Air, Proventil, or Ventolin) for intermittent asthma to daily use of oral corticosteroids like prednisone for severe persistent asthma refractory to all other therapies. However, their treatment recommendations do not begin with medications. First, they explore other important strategies for bringing asthma under control, aspects of care that go hand-in-hand with the pharmacologic treatments of asthma.

- 1) **Make sure that the diagnosis of asthma is correct.** Other diseases of the chest can cause wheezing, cough, and shortness of breath. If you have emphysema or recurrent bouts of bronchitis or heart failure, you will need a different approach to treatment than what is outlined in the recommendations of the Expert Panel.
- 2) **Make frequent assessments of your asthma control.** Asthma can be a dynamic condition, varying from season to season, one location to another, or changing simply as a result of growing older. The treatments appropriate for the way your asthma used to be may no longer be appropriate for your asthma as it is now. Be attentive to your asthma symptoms and keep in touch with your doctor about your asthma.
- 3) **Avoid those things that make your asthma worse.** It makes no sense to take more and more medications for your asthma while sleeping with the pet cat to which you are allergic. Your child’s asthma control will improve if he/she is no longer exposed to second-hand cigarette smoke; and your asthma will likewise improve if you quit smoking cigarettes. By identifying those things that aggravate your asthma and making an effort to avoid them as much as possible, especially in your home, you can often achieve better asthma control without escalating your medication use.
- 4) **Attend to medical conditions that may adversely impact your asthma.** Asthma may not be your only medical problem. To get your asthma under good control it may be important to address these other conditions simultaneously. Common examples include sinusitis, allergic rhinitis, gastroesophageal reflux disease, obesity, depression, anemia, and many other common problems.
- 5) **Be prepared to deal with an asthma attack, should one occur.** Your medical treatment is meant to prevent asthma attacks, but it may fail to do so, even under the best of circumstances. It is estimated that as many as 20% of persons with asthma will have suffered an asthmatic attack requiring urgent care within the past year. So be prepared: know what works and what doesn’t work in reversing an asthma attack, and know when to get help in treating your asthma attack. We will address this particular topic of asthma care in more detail in the next issue of *Breath of Fresh Air*.

In choosing medications to treat asthma, you and your doctor will want to find the least amount of medication needed to keep you symptom free and safe from asthmatic attacks. In the lingo of

*continued on page 3*

## News About Asthma

### **Safety of montelukast (Singulair):**

The Food and Drug Administration is currently investigating reports that the asthma medication, montelukast (Singulair), may cause mood changes and abnormal behavior, including thoughts of suicide and even attempts at suicide.

How is it possible that one of the most widely prescribed medications in pediatric medicine might now, 10 years after it first became available to treat asthma (and later, allergic rhinitis), have concerns raised about its potential for causing depression and ideas of suicide?

Millions of people have been prescribed Singulair. Imagine that a child with asthma and allergies starts taking Singulair on the recommendation of his pediatrician. Soon thereafter he seems to become a different person—moody, irritable, and withdrawn. He stops attending classes regularly and spends time alone in his room. One day he tells his parents that he hates his life and wants to kill himself. Alarmed, the parents report this worrisome behavior to their child's doctor, who in turn wonders whether the Singulair that she had recently prescribed might be the cause. She asks the parents to have their child stop taking the Singulair and then reports this story to Merck (the manufacturer of Singulair) or directly to the Food and Drug Administration (FDA) as a possible "adverse event" related to Singulair.

The FDA is currently investigating "a very limited number" of such reports (although the particular story above is purely fictional). They are charged with the task of determining whether Singulair was the *cause* of this child's behavioral change or whether it would have occurred anyway, even if he had not been prescribed Singulair, and that the two events (starting to take Singulair and feeling suicidal) are purely coincidental.

Merck has reviewed the results of carefully monitored research studies in which some patients received Singulair and others received placebo. Among more than 11,000 people in these clinical trials, there were no reports of suicidal thoughts and no suicides. Merck also reviewed adverse events reported in studies of more than 7,000 people in which some patients received Singulair whereas other patients received different asthma therapies (like inhaled steroids and long-acting bronchodilators). They found in this latter group of studies that more patients (three) attempted suicide while taking other therapies than attempted suicide while

taking Singulair (one patient). Merck has noted that these studies were not specifically designed to investigate rates of suicide among study participants.

The review by the FDA will likely take several months. They will need to determine whether children receiving Singulair have had more bouts of depression and suicidal thoughts than occur in the general public or among people with asthma and allergies in general. They will explore details of the individual cases reported to them, to determine whether depression or other psychiatric instability might have preceded use of Singulair. And they will consider whether there is any plausible biochemical explanation that might link depression with a leukotriene blocking drug.

In the meantime, as you discuss medication concerns with your doctor—about Singulair or the other leukotriene modifying drugs, zafirlukast (Accolate) and zileuton (Zyflo), you can be reassured by the facts that the reports described above are exceedingly rare and that, if necessary, alternative, effective medications are available to treat asthma and allergy.

### **New formulation for an inhaled steroid:**

The inhaled corticosteroid mometasone (Asmanex) has recently been released at a lower dose (110 micrograms per inhalation) and has received Food and Drug Administration approval for use in children as young as 4 years of age. It had previously been available only at a dose of 220 mcg per inhalation. It is also approved for once daily dosing in mild asthma.

Inhaled steroids have been a mainstay of asthma therapy for several decades now, including among young children. Many asthma physicians believe that their widespread use can be credited with the dramatic decline in emergency room visits and hospitalizations for asthma that has been observed among children receiving good asthma care.

National and international guidelines based on the recommendations of asthma

*continued on page 4*

## **Breath of Fresh Air**

Editor-in-chief

Christopher H. Fanta, M. D.

**Breath of Fresh Air** is published quarterly by the Partners Asthma Center, 75 Francis Street, Boston, MA 02115. ~~We gratefully acknowledge Glaxo Smith Kline for their generous contribution toward publication of this newsletter.~~

© 2008 Partners Asthma Center.

Requests for permission to reprint should be addressed to the above.

Telephone: (617) 732-4353 Fax: (617) 732-7421

Internet: <http://www.asthma.partners.org>

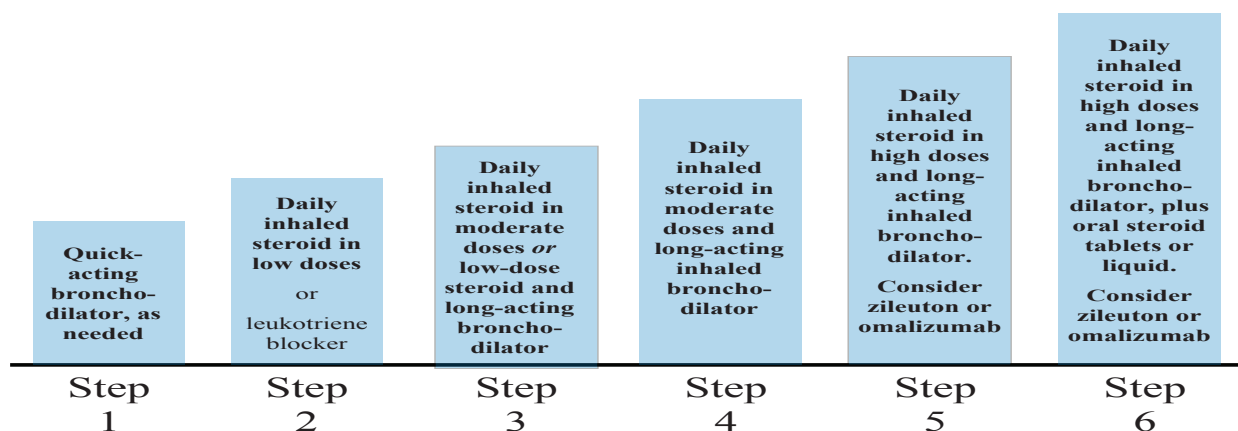
E-mail: [asthma@partners.org](mailto:asthma@partners.org)

*Stepped Approach, from page 1*

the current asthma *Guidelines*, the goals of asthma therapy are to achieve current control and reduce future risk. If you are feeling well and have had at most one serious asthmatic attack over the past year, your current asthma therapy may be sufficient. If you are frequently using your quick-relief bronchodilator, are waking at night with asthmatic symptoms, have a low peak flow value, or are limited in your activities because of your asthma, then it is probably time to “step-up” your asthma therapy. By “stepping-up,” we mean taking a more powerful medication or combination of medications likely to bring your asthma under good control. Here (with some minor Partners Asthma Center modifications) is how the national Expert Panel views the process of “stepping up” asthma medications ... in 6 steps.

- Step 1:** Use your quick-acting inhaled bronchodilator, such as albuterol, metaproterenol (Alupent), levalbuterol (Xopenex), or pirbuterol (Maxair), as needed for relief of symptoms and, if needed, prior to exercise.
- Step 2:** Add daily use of an inhaled corticosteroid, such as beclomethasone (Qvar), budesonide (Pulmicort), fluticasone (Flovent), mometasone (Asmanex), and others, in addition to your quick-acting bronchodilator taken as needed. You can use a low dose of inhaled corticosteroid and some can be taken once daily. An alternative option is a leukotriene blocker, such as montelukast (Singulair) or zafirlukast (Accolate).
- Step 3:** Two options are offered at this step: increase the dose of your daily steroid inhaler (using a higher strength inhaler or taking more puffs per day) *or* continue a low dose of inhaled steroid and add a long-acting inhaled bronchodilator like formoterol (Foradil) or salmeterol (Serevent). Two combination inhalers are available that combine an inhaled steroid and long-acting bronchodilator into one device: Advair (fluticasone plus salmeterol) and Symbicort (budesonide plus formoterol). Another option for stepping up care at this level is to add a leukotriene blocker (Singulair or Accolate) to an inhaled steroid.
- Step 4:** Daily use of both an inhaled steroid (now at moderate doses) and a long-acting inhaled bronchodilator is recommended. Convenient examples are the combination inhalers, Symbicort 160/4.5 taken two puffs twice daily or Advair 250/50 taken one inhalation twice daily.
- Step 5:** Persistent asthma of this severity requires high doses of inhaled steroids plus a long-acting inhaled bronchodilator. Other options that might be tried as well include the oral leukotriene modifier called zileuton (Zyflo) and the anti-IgE monoclonal antibody, omalizumab (Xolair), given as injections to patients with documented severe allergic asthma.
- Step 6:** Everything in Step 5 remains appropriate for Step 6, plus use of oral steroids such as prednisone or prednisolone taken daily or perhaps every other day. Also appropriate for patients at this level of asthma severity: consultation with an asthma expert.

### Step-Care Approach to Asthma Treatment (in Adults and Children 12 years and Older)



*News About Asthma, from page 2*

experts recommend the use of inhaled steroids in children of *any age* when other medications are inadequate to control symptoms. At the same time, the FDA can give their approval to use of medications in certain age groups only after extensive clinical trials have been completed *in that particular age group* to demonstrate the medication's safety and effectiveness. It is up to the individual pharmaceutical companies as to whether they wish to invest the millions of dol-

lars needed to conduct the clinical trials necessary to obtain FDA approval to market their drug for this age group. On the other hand, doctors are free to prescribe inhaled steroids to children of any age, based on their belief in their safety and usefulness, given all the evidence available at the present time.

The current FDA-approved age limits for inhaled steroids are shown in the accompanying table.

Generic name	Brand name	Age (yrs) at which the medication is approved for use by the FDA
Beclomethasone	Qvar	≥5
Budesonide	Pulmicort by dry-powder inhaler	≥6
	Pulmicort by nebulizer solution	1-8
	Symbicort (budesonide combined with formoterol)	≥12
Flunisolide	Aerobid	≥6
Fluticasone	Flovent	≥4
	Advair (fluticasone combined with salmeterol) by metered-dose inhaler	≥12
	Advair (by dry-powder inhaler)	≥4
Mometasone	Asmanex	≥4

### Cetirizine (Zyrtec) made available OTC-

Antihistamines block the action of the chemical, histamine. Histamine plays a big part in allergic reactions, including contributing to itching (skin, nose, and eyes) and a watery discharge (eyes and nose). If you have seasonal or year-round allergies, histamine is there, released when you are around the allergens to which you are allergic, making you miserable.

Many antihistamines have been developed to counteract these effects of histamine. For many years, antihistamines have been available for purchase without a prescription (“over-the-counter” or OTC). Although you may not know their generic names, like diphenhydramine, chlorpheniramine, or brompheniramine, you will probably recognize some of their many brand names, such as Benadryl Allergy, Robitussin Allergy & Cough Liquid, or Dimetapp Cold & Allergy Elixir). These older, “first-generation” antihistamines work well but have as their major side effects the following: 1) tendency to cause drowsiness; and 2) possible drying of airway secretions, leading to thick plugs of mucus in the bronchial tubes. It is for this latter reason that so many over-the-counter cold remedies, which contain “first-generation” antihistamines, contain the warning that people with asthma should consult with their doctor before use.

Enter the “second-generation” antihistamines, designed to block histamine without causing drowsiness or drying of bronchial mucus. Currently available second-generation antihistamines are cetirizine (Zyrtec), desloratadine (Clarinex), fexofenadine (Allegra), and loratadine (Claritin). Six years ago, loratadine was made available at pharmacies without a prescription; now cetirizine has likewise been approved for sale over-the-counter. OTC cetirizine (Zyrtec) comes as tablets, chewable tablets, and syrup and is approved for use in children 2 years and older. Some people find that, despite its “second-generation” status, cetirizine still makes them a bit sleepy and so prefer to take this antihistamine once daily at bedtime. (Fexofenadine is not available over-the-counter, but within the past year generic fexofenadine became available, in addition to fexofenadine marketed under the brand name, Allegra.)

One more thing about “second-generation” antihistamines now available without a prescription. Both OTC loratadine and OTC cetirizine can be purchased combined with the decongestant, pseudoephedrine (Sudafed). They are sold as Claritin-D, Zyrtec-D, Alavert-D, and others, where “D” is meant to indicate “decongestant.” Each tablet contains 120 mg of pseudoephedrine. Claritin-D 24 hour contains 240 mg of pseudoephedrine.



*Asthma or Bronchitis?* continued from page 6

To complicate matters, viral respiratory tract infections can – and often do – cause asthma attacks. What starts as a simple head cold then settles in the chest, and quickly you may experience a full-blown asthma attack as a result. “Is it asthma or bronchitis?” you ask your doctor; and the answer may be, “Yes, both.”

So how can your doctor (and you) know when those symptoms of cough, chest tightness, and shortness of breath are an asthma attack or a bronchial infection? The best answer, we think, is to measure your breathing: pulmonary function testing. Most times healthy people with chest colds (“acute bronchitis”) will have normal lung function. They cough miser-

ably, they have mucus in their large bronchial tubes, and they feel poorly, but they do not have narrowing of the thousands of small bronchial tubes throughout the lungs (as occurs in asthma), and their breathing tests remain normal. On the other hand, an asthma attack, whether caused by an allergen, an infection, or something else, will be associated with reduced lung function. It will be difficult to empty air quickly through the bronchial tubes, and your peak flow or your FEV<sub>1</sub> on a spirometry test will be reduced. And in that case, your doctor will know that chicken soup and acetaminophen or ibuprofen for a viral chest infection or antibiotics for a bacterial infection will not be enough to get you better. You will need to get treatment for an asthma attack.

Acute bronchitis	Asthma attack
Viral or bacterial infection	Allergic-type inflammation
Often with fever	Often without fever
Some chest rattling	Widespread wheezing
Typically lasts a week or two	May last hours or only a few days
Sputum may be clear or dark	Sputum may be clear or yellow-green
Generally normal breathing test results	Reduced lung function



## News from Partners Asthma Center

### *New Physician at the Partners North Shore office:*

We are pleased to welcome Eyal Oren, M.D., as a new member of Partners Asthma Center. Dr. Oren is an internist and allergist, trained in Medicine at Georgetown Hospital in Washington, D.C. and in Allergy and Immunology at the Massachusetts General Hospital.

He joins Partners Asthma Center at North Shore Medical Center as a member of Asthma and Allergy Affiliates. He has a general interest in asthma and allergy and special expertise in food and bee-sting allergies. Other members of Asthma and Allergy Affiliates of the North Shore are Drs. James MacLean, Jeanne Gose, Andrew Ober, and Cristina Palumbo.



## Is It Asthma or Bronchitis (or Maybe Both)?

Was there ever a time when you had cough and chest congestion and possibly some shortness of breath, and you wondered whether you were suffering from an asthma attack or a bout of bronchitis? Sometimes it is hard to distinguish the two conditions, and they can both occur at the same time, confusing matters even more. Here's how your doctor might think about the problem.

Bronchitis is a general term meaning inflammation ("-itis") of your bronchial tubes. Most often we use the term to describe an infection of the bronchial tubes, typically caused by a virus, sometimes by bacteria. A viral infection causing just a sore throat and stuffy or runny nose is frequently referred to as a "head cold" or "upper respiratory tract infection (URI)." A more serious viral or bacterial infection that settles deep into the chest, with congestion, rattling with breathing, and often a cough productive of sputum, is a "chest cold" or acute bronchitis. Clues to the fact that a germ (virus or bacterium) is causing the illness might include fever and a generalized ill feeling. Most viral respiratory tract infections, including viral bronchitis, last a week or two, then resolve.

Bacterial bronchitis may linger longer if untreated with antibiotics. (The productive cough and chest congestion that occurs daily for months and years, the result of cigarette smoking, is referred to as "chronic bronchitis.")

An asthma attack is likewise characterized by inflammation of the bronchial tubes—with mucus production, chest congestion, and shortness of breath. Asthma attacks are typically accompanied by wheezing in the chest, a sound that may or may not be distinguishable from the rattling of mucus in the chest during a bout of bronchitis. A variety of triggers may set off an asthmatic attack, including exposure to allergens, exercising in cold air, strong fumes, and certain medications – none of which would likely prompt a fever or generalized flu-like malaise. Like bouts of bronchitis, asthma attacks can linger for a week or two, but they often are much briefer, particularly if treated appropriately with medications to reverse the attack. The color of the mucus that is expectorated is not a reliable distinguishing factor between acute bronchitis and an asthmatic attack.

*continued on page 5 inside*



### **Breath of Fresh Air**

Partners Asthma Center  
75 Francis Street  
Boston, MA 02115  
1-800-9PARTNERS

---

Non-Profit  
Organization  
U. S. Postage  
**PAID**  
Permit #187  
Burlington, MA

---

### *INSIDE*

- ◆ National Asthma Guidelines:  
A Stepped Approach to  
Asthma Therapy
- ◆ News About Asthma:
  - Singulaire Safety
  - Age Guidelines for  
~~Child Medications~~
  - Antihistamines OTC
- ◆ New Doctor at North Shore
- ◆ Is It Asthma or Bronchitis (or  
Maybe Both?)