Breath of Fresh Air

Volume 6, No. 2 *Information, news and advice for improving asthma well-being* **Spring 2001**

"Should I Have Allergy Skin Tests?" (Part One of Two Parts)

Many people know exactly what it is that sets off their asthma. Perhaps their asthma worsens whenever they do vigorous exercise, especially if the air that they are breathing is cold; perhaps it is exposure to second-hand smoke at a party; perhaps it is visiting the neighbor's apartment and sharing the couch with his/her pet cat.

On the other hand, some people are uncertain as to what are their asthma "triggers." It seems as though their asthma is bothersome much of the time, but it is not at all clear what is causing the symptoms. Perhaps nighttime is particularly bad, and you wonder if there might be something in the bedroom to which you are allergic. Perhaps the early fall is a difficult season for you, and you wonder whether you are allergic to mold from damp fallen leaves or perhaps to something dispersed into the air indoors when the forced hot air heating first comes on.

It may be possible to sort out your asthma "triggers" simply by careful detective work. Keeping a diary of when your asthma worsens and of what events and exposures preceded the asthma symptoms may suffice. In that way you may find that your asthma gets better whenever you are away from home (and your pet dog) for several days; or that you have trouble breathing whenever you take certain medications (for example, ibuprofen for headache). However, even after careful self-monitoring, you may be left wondering about your allergic triggers. In that circumstance, allergy testing may help.

Two types of allergy tests

There are two types of tests that your physician can recommend to help identify your allergic sensitivities. One type is a blood test, measuring allergic antibodies in your blood to specific allergens to which you may be sensitive. Persons without these allergic sensitivities will not have these specific allergic antibody proteins in their blood. This blood test is called a RAST (for radioallergosorbent test), referring to the chemical process by which these antibodies are identified in the blood.

The other type of test is allergy skin tests. Your allergic sensitivity is tested by pricking into the skin a small amount of the substance to which you may be allergic. Normally, the body makes no reaction to this chemical. However, if you are allergic to it, the skin reacts by making a localized red, itchy reaction, called a hive. The hive appears within minutes of the allergy skin test and lasts up to approximately 24 hours.

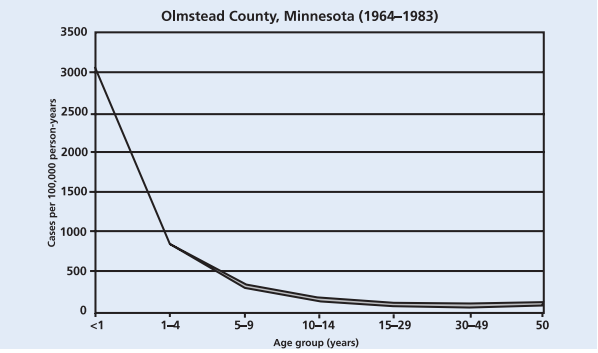
If you think about it, neither of these two tests answers exactly the question that we would like answered. We would like to know if *breathing in* certain substances causes our asthma to worsen. The most exact test would be to measure your breathing before and after inhaling a small amount of the particular substance in question. However, such a test, which is done in certain experimental settings and is called an "inhalation challenge," is time consuming, potentially dangerous (were it to provoke a severe asthmatic attack), and tests only one substance at a time. RASTs and allergy skin tests are used as a substitute for inhalation challenges. The assumption — which mostly holds true — is that if you have asthma and have allergic antibodies in your blood to a certain allergen or make a hive when that allergen is injected superficially into your skin, then were you to breathe that allergen onto your bronchial tubes, you would also make an allergic reaction there, causing you to have narrowing of your bronchial

. . . continued on page 4

Q. Can Asthma Begin at *My* Age?

A. The simple answer to this question is, "yes," the symptoms of asthma can come on at any age. Several years ago researchers in Olmsted County, Minnesota investigated at what age persons in their community had the new onset of asthma symptoms. As can be seen in the graphic display below, they found that asthma most often began in early childhood. Most persons with asthma are diagnosed with asthma by age 4. However, throughout adulthood new cases of asthma continue to appear, even into late adulthood.

New Diagnosis of Asthma by Age



At the Partners Asthma Center we often see persons who first complain of cough and wheeze and shortness of breath in their 20s and 30s and 40s. Sometimes they have just experienced their first asthmatic attack at this age. As we talk further, we often find that they have had "allergies" for many years. As a child they had "hay fever" or eczema, or they found themselves allergic when around cats or dogs or horses. Perhaps they remember always having had a cough when growing up and having had lingering "bronchial colds" all winter long. In other words, we suspect that they may have had an allergic tendency inherited at birth and manifesting in various ways throughout life. Now, in adulthood, it is manifesting as allergy of the bronchial tubes — or asthma. And perhaps the ever present cough and chest congestion of childhood were in fact early signs of asthma, undiagnosed at the time and then forgotten for many years. We know that children often "outgrow" their asthma, only to have it return later in life. Very mild asthma may be undiagnosed in childhood and seem to appear for the first time with an "attack" of symptoms in adulthood.

But can asthma develop as an adult "out of the blue," without any previous personal or family tendency toward allergies and with no suggestion of asthmatic symptoms as a child? Again, the answer is yes. Consider, for example, the person who develops asthma at the workplace, called "occupational asthma." He (or she) begins working, say, at a lumber mill and day after day breathes fine particles of wood dust onto his bronchial tubes. After several months or years, he begins to develop a cough at the end of the workday, which at first goes away during the weekends off from work. Eventually the cough is followed by wheezing and shortness of breath and lasts all week long. Then, not only is sawdust a cause of his symptoms, but also exercise, cold air, strong fumes, and all of the usual "triggers" of asthma also bring on his symptoms. He has developed typical asthma as a result of his work exposures, and it may or may not go away when he leaves his job for good.

Work exposures are one example of environmental stimuli that can interact with an inherited tendency toward asthma to produce the usual signs and symptoms of asthma in adulthood. Cigarette smoking may be another example. Obesity seems to be yet another factor, although by what mechanism obesity predisposes to the new onset of asthma is uncertain. Among postmenopausal women, treatment with estrogens (hormone replacement therapy) has been identified as another risk factor for developing asthma.

What seems clear is that asthma is a complex disease (or perhaps even a group of different diseases with very similar manifestations) that depends for its expression on an interplay of our genetic predispositions and our environmental exposures. When the precise combination of these two come together, asthmatic symptoms can develop — regardless of how old we are.

Breath of Fresh Air

Editor-in-chief Christopher H. Fanta, M. D.

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Telephone: (617) 732-7420 **Fax:** (617) 732-7421
Internet: http://www.asthma.partners.org
E-mail: asthma@partners.org

News About Asthma

Tracking dust mite exposure

An ingenious experiment was reported at a national meeting of allergists and immunologists in March. Researchers in Sydney, Australia asked 10 subjects to wear a nasal filter for one hour during each of seven activities: in the morning at home, driving to work, at work in the morning and in the afternoon, driving home from work, in the evening at home, and while lying in bed. They then analyzed the nasal filters for the amount of dust mite antigen accumulated during each of these activities.

They found that the highest levels of dust mite exposure were in the home, particularly when lying in bed. The amount of dust mite accumulated while lying in bed was eight times greater than while driving to work in the morning and 50% greater than while at home in the evening. Based on these results and other similar evidence, in trying to reduce our dust mite exposure, it makes sense to focus our efforts on our beds and bedrooms.

Preventing asthma

In another experiment reported at this same meeting, researchers attempted to prevent the development of asthma by reducing allergic exposures in infancy. Infants at risk for developing allergic disease based on their family histories had strict allergy avoidance measures instituted in their first year of life. Specifically, they were either breast fed by their mothers who maintained a low allergen diet, or they received special hypoallergenic formula feedings. Efforts were also made in their homes to reduce their exposure to dust mites. Parents of a parallel group of infants also at risk for developing allergic disease followed standard advice and took no special environmental protective measures.

What were their findings? They observed fewer signs of allergy (based on blood and skin tests) and fewer symptoms of asthma at age 8 years in the children whose parents had taken special allergy avoidance measures in their first year of life. These results are preliminary and involve only a small number of children. Nonetheless, they give hope that identifying environmental risk factors for the development of asthma and reducing our exposure to them may help to turn the tide of the current asthma epidemic. This sort of approach — risk factor avoidance or modification — has already proved highly successful in reducing the prevalence of coronary artery disease in this country.

News from Partners Asthma Center

Eve Dakin, secretary to Partners Asthma Center at the Center for Chest Diseases at Brigham and Women's Hospital, was recipient this year of a Partners in Excellence Award for her excellence in clinical service. The award gave recognition to her good-humored disposition, her always present willingness to help both patients and health care providers, and her hard work and commitment to our medical practice. Eve has been part of our group for 14 years. We feel lucky to have her, and cheer her for this well-deserved award.

New Asthma Medication

An inhaled steroid and a long acting inhaled bronchodilator are now available in a single inhalational device. The steroid fluticasone (brand name: Flovent®) and the bronchodilator salmeterol (Servent®) are both effective preventative medications when taken twice daily. They are now combined into a dry powder inhaler, called the Advair® Diskus®, that delivers full doses of both medications when taken as one inhalation twice daily. Three different concentrations of the inhaled steroid are delivered in this combination. They are 100, 250, and 500 micrograms of fluticasone (in each inhalation), meant to be the equivalent of 2 puffs from the Flovent® 44, 110, and 220 microgram metered dose inhalers, respectively.

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Allergy Skin Tests . . . *continued from page 1*

tubes and asthma symptoms.

With RASTs and allergy skin tests, you can have your allergic sensitivities to multiple allergens tested all at one time. At Partners Asthma Center, our usual panel of allergy skin tests assesses 30 different substances, including cats and dogs, house dust mites, cockroach, common molds, and pollens from regional trees, grasses, and weeds.

Allergy tests cannot diagnose asthma

Allergy testing is not useful in diagnosing asthma. You can have asthma but negative skin tests (no reactions to common allergens found), and you can have many positive skin test reactions but no asthma. Someone with hay fever and nasal allergies might have many allergic reactions but not have asthma. Also, allergy skin tests only identify your sensitivity to allergens, particularly inhaled allergens. Irritants (like diesel exhaust and second-hand cigarette smoke) and other non-allergic triggers (such as exercise or viral respiratory infections) cannot be tested in this way. Many people are interested in whether certain foods might make their asthma worse. Allergy testing is generally not very helpful in this regard. Making a hive to a small amount of strawberry injected into your skin is not an accurate predictor of whether eating strawberries might make your asthma worse.

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Asthma Support Group

The Partners Asthma Center Support Group will travel to different practice sites this Fall. We will continue to meet on **the last Tuesday of every month but at a new time, from 6:30 to 8:00 p.m.** Each session will begin with a brief informative presentation followed by an open discussion and sharing of ideas and experiences about asthma. Please note the new locations for the upcoming Support Group sessions.

Date	Location	Topic
Sep. 25:	**Ambulatory Care Center** ***850 Boylston St. (Rte. 9)*** ***Suite 437***	**The Weezing Child**
Oct. 30:	**Brigham and Women's at Newton Corner** ***272 Centre St.*** ***Newton Corner***	**Is Asthma Different in Women?**
Nov. 27:	**Faulkner Hospital** ***1153 Centre Street*** ***Jamaica Plain*** ***Suite 4930***	**Gastroesophageal Reflux and Asthma**

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Spotlight

Donald President can't remember a time when he didn't have asthma. He was told that his asthma began at age 2, and his earliest memories, from about age 5, include frequent trips to Children's Hospital in Boston. Even though the treatment at the time was injections with adrenaline, he doesn't remember the experiences as terrifying or painful. His mother and aunt would accompany him to the hospital, and the hospital staff all knew him well. He frequently had to stay overnight, in part because of frequent pneumonias, but the nurses were kind and "made it real nice; everyone was very friendly," he recalls.

"And if you do come into an asthma attack, don't panic. Breathe slow. Try to take nice, slow breaths; it actually helps you out."

At age 8 he had surgery on his lungs, removing an area of infection that wouldn't heal. His asthma did not improve after the surgery, and he was tried on many different medications. Marax® and Tedral® are two that he recalls. These were combination bronchodilators, including some ephedrine, which tended to make one jittery and agitated . One day he recalls having hallucinations while on the medicines. "One night my mother left the *Bible* by the bedside, and while I was looking, the cover was growing!

"My mother would limit my play time. I'd sit out front and watch while other kids played." His friends would understand that he had asthma and couldn't participate; he remembers that they would give him more of a hard time about his skin condition, eczema, than about his asthma. He took allergy shots for a number of years, and they seemed to help. Asked why he stopped, he said "I became a teenager." Driving a car and being popular with his peers became more important than regular medical treatment for his asthma.

Despite the handicap of his asthma, he has made physical fitness an important part of his life. He participated in gymnastics in high school and worked out at a gym. A nurse taught him how to pace himself and to breathe deeply from his diaphragm. He is now an avid dancer — mostly hip hop — and if you could watch him dance, you'd know that his asthma has to be under good control. He is a blur of continuous movement on the dance floor. "It's adrenaline", he says, that keeps him going.

There was a period of approximately nine years after becoming an adult when Mr. President had no insurance. He was no longer covered by his mother's insurance and had none of his own. He relied on over-the-counter Primatene® Mist® , but after a time it would seem to stop working. He recalls many nights sitting up in a chair all night, hoping that his breathing would get better by morning. If it didn't, off to the emergency room he would go. Then came the free-care policy developed by the Commonwealth of Massachusetts in collaboration with area hospitals, making it possible for him to get regular medical care and free asthma medications. He now is a patient at Partners Asthma Center, and it has been several years since his last hospitalization for asthma.

He has the following advice to share. "You must know your limitations. Not everybody else's limitations, *your*s. No matter if you're in a crowd of people, if you feel yourself starting to get tired real quick, you need to slow down regardless of what everybody else says. Basically, you're saving yourself an asthma attack.

"And if you do come into an asthma attack, don't panic. Breathe slow. Try to take nice, slow breaths; it actually helps you out." He recalls times when he tried to pull in air too hard and seemed to get in only a teaspoonful of air to breathe.

And his parting advice: "Make sure that you take your medicines before you leave the house, and have a good day!"

If because of your financial situation you think that you might qualify for free medical care, contact the Free Care office at the Brigham and Women's Hospital. Call 617-732-5964 for more information.

Computerized Asthma Questionnaire at Partners Asthma Center

Partners Asthma Center is embarking on a research project to learn more about what makes for good asthma control. Among our goals at the Asthma Center is helping persons with asthma to feel well and also to have as good lung capacity as possible. We are interested in the relationship between these two goals. Is it possible to have good pulmonary function but not feel that your asthma is well controlled? Is it possible to feel good about your asthma control but have impaired breathing capacity? And if so, why?

Dr. Marilyn Moy is leading a research effort to answer these questions. Her project involves the following: completing a questionnaire about your asthma and your health in general; and having your lung function measured (our usual breathing test or "spirometry"). The questionnaire has been entered onto a computer and can be answered on a touch screen monitor, the sort of screen that you use when you get money from an automated teller machine (ATM). Completing the questionnaire will take no more than 10–15 minutes.

Our anticipation is that your asthma control may change over time. We will ask you to complete an update of the questionnaire each time you come to the office (but no more than 4 times/year). Your responses will be entirely confidential. Our interest in collecting this information is to learn more about asthma control among our patients in general; it is not a form of record keeping meant to keep tabs on you as an individual. It will not in any way intrude on your privacy.

This project will be conducted at the Brigham and Women's Hospital office of Partners Asthma Center at the Center for Chest Diseases (15 Francis Street). If you have asthma, you will be invited to particpate but you are under no obligation to do so. If you would enjoy being part of asthma research designed to improve asthma care in the long run, we would welcome your participation. If you would rather not participate, you should decline. Doing so will have absolutely no impact on the care that you receive.

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Partners Asthma Center
Brigham and Women's Hospital
Massachusetts General Hospital
Faulkner Hospital
75 Francis Street
Boston, MA 02115
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