Breath of Fresh Air

Volume 6, No. 4 *Information, news and advice for improving asthma well-being* **Fall 2001**

Exercise and Asthma

On March 14, 2001 Drs. Kenan Haver and Jonathan Arm of Partners Asthma Center, in collaboration with the American Lung Association of Massachusetts, organized a one-day symposium on Athletes with Asthma. The program included presentations by a physician (Dr. Arm), an athletic trainer (Jim Rogers, Director of Special Projects for Temple University Sports Medicine Center), and athletes themselves. Proceeds from the program were donated to Community Rowing, Inc., the Boston Urban Asthma Coalition, and the Flying Fish Asthma Education/Swimming Program. The three articles on exercise and asthma in this issue of *Breath of Fresh Air* are derived from these presentations.

Introduction

It is estimated that asthma affects 15 million Americans, including nearly 6 million children in this country. It need not, however, prevent full, active lives, including participation in athletics at any level of competition. At the summer Olympics in 1996, as many as 20% of the competing athletes carried a diagnosis of asthma. The important point to remember is that with careful preparation and appropriate medication, most persons with asthma should be able to exercise as much and as vigorously as they would like.

Exercise and Asthma (Part 1): The Physician's Perspective

Asthma is an inflammatory condition affecting the bronchial tubes, the passageways that conduct air in and out of the lungs. A property characteristic of these inflamed airways is their twitchiness or abnormal sensitivity. When stimulated by any of a variety of different "triggers," asthmatic airways narrow, making it difficult to breathe through this system of narrowed tubes. One of the stimuli that will reliably cause asthmatic bronchial tubes to narrow is cooling and drying of the walls of these tubes. The rapid, deep breathing that occurs with exercise brings large volumes of air deep into the lungs and causes just this sort of cooling and drying of the airway walls to take place. Exercise is a characteristic trigger of airway narrowing in all persons with asthma. Some people identify exercise as their only or most important trigger and are said to have "exercise-induced asthma."

In persons with asthma, exercise can cause shortness of breath, tightness in the chest, cough, and wheezing. Exercise-induced coughing is particularly common. Symptoms may begin during exercise or may come on a few minutes after exercise has stopped. Athletes often report three patterns to their symptoms. 1) With a short period of exercise (5–10 minutes), they experience symptoms starting approximately 5 minutes after stopping exercise. 2) With longer periods of exercise, symptoms may begin 15–20 minutes into a long run or row or swim. 3) In persons with poorly controlled asthma, shortness of breath may begin within minutes of starting exercise, preventing one from continuing.

Some forms of exercise seem to bring on asthma more than others, but there is a common factor to all forms of exercise: the colder and drier the air that one breathes, and the harder one breathes during exercising, the greater the airway narrowing caused by the exercise. Equally important is the state of the

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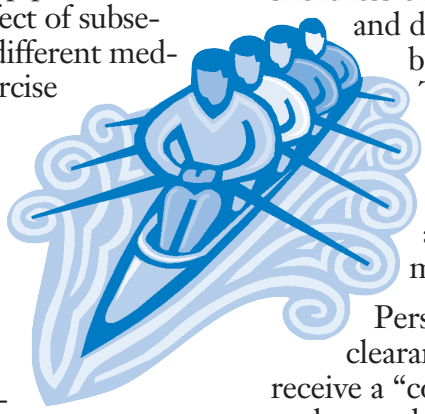
asthmatic inflammation of the airways: if you try to exercise during your allergy season, or while you have a respiratory tract infection, or in conditions of heavy air pollution, your airways are likely to be more sensitive and your asthma worse even though the level of exercise that you attempt does not change.

There are several things that you can do to help you to exercise with a minimal effect on your breathing. Avoiding cold, wintery days will help; for instance, you may try running indoors in the winter. A warm-up period of light exercise will reduce the effect of subsequent intense exercise. Several different medications can be taken before exercise to prevent airway narrowing. Most widely used are the bronchodilator inhalers, such as albuterol (Ventolin® or Proventil®). The long-acting bronchodilators, salmeterol (Serevent®) and formoterol (Foradil®) are effective in this way for several hours after a single dose. Cromolyn (Intal®) and nedocromil (Tilade®) can also prevent exercise-induced asthma when taken 20 minutes before exercise. Equally important is reducing the underlying inflammation of the bronchial tubes. Regular use of anti-inflammatory medications can make asthmatic airways less vulnerable to exercise as a trigger of spasm and narrowing.



Remember that managing exercise-induced asthma is not simply a matter of managing the symptoms brought on by exercise. It is about overall asthma control. As outlined by the National Institutes of Health in their Expert Panel's Guidelines for the Diagnosis and Management of Asthma, your asthma is under good control if: you are free of troublesome symptoms of asthma; you do not experience exacerbations of your asthma requiring emergency care; your lung function (e.g., peak flow) is normal or nearly normal; and you are not limited in your physical activities because of your asthma.

Exercise and Asthma (Part 2): The Trainer's Perspective

Athletic trainers are taught to prevent, recognize, and treat sports injuries to muscles, bones, and joints. They rarely think of asthma as a potentially serious condition or consider the danger posed by a severe attack of asthma. Several years ago in Philadelphia the evening news ran the story of a high-school student who died while playing a game on his high-school basketball team. He complained of shortness of breath, was taken out of the game, and died from his inability to breathe before he could get to the hospital. The shock of this report was a "wake-up call." Anyone involved in organized sports — as teacher or trainer or coach — needs to know about asthma and take its management very seriously.

Persons with asthma seeking medical clearance to participate in sports should receive a "conditional clearance." It should be understood that the athlete will always have his quick-acting, "rescue" bronchodilator with him. He/she should have it with him in class as well as on a cross-country run. No inhaler, no participation in sports that day. The National Federation of High School Sports has given their approval for athletes with asthma to carry with them and to use bronchodilator inhalers during sports competitions.

In addition, the athlete's asthma must be stable on the current treatment program. "Stable" means no more than three rescue treatments of bronchodilator per week.

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Breath of Fresh Air

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News About Asthma

Inhaled Steroids and Bone Density

Potentially harmful long-term effects of inhaled anti-inflammatory steroids remain a concern, especially in light of the known adverse effects of steroids taken in tablet form (such as prednisone or Medrol®). An important study, conducted at the Asthma Research Center at Brigham and Women's Hospital, was recently published in the prestigious medical journal, *New England Journal of Medicine*. The lead author was Dr. Elliot Israel of Partners Asthma Center. In this study, Dr. Israel and his co-investigators explored whether inhaled steroids might accelerate the natural loss of bone mass found in adult pre-menopausal women.

The study followed approximately 100 pre-menopausal asthmatic women for three years, regularly measuring the density of their bones at the hip and spine by X-ray technique. All of the patients were treated with the inhaled steroid, triamcinolone (Azmacort®), and they were excluded from the study if they needed more than very infrequent and brief treatment with steroid tablets.

The investigators found that enough of the inhaled steroid is absorbed into the bloodstream and carried to the bones that a small effect could be seen on bone density over the three-year period. Compared to asthmatic women not taking inhaled steroids, those taking inhaled steroids had slightly greater bone loss at the hip (but no difference seen in the spine). The more inhaled steroid taken, the greater the loss of bone. The concern raised by this study relates to the millions of asthmatic women taking inhaled steroids for control of their asthma. The steroids may predispose to the development of osteoporosis in later years.

When you talk about inhaled steroids and your bones with your doctor, consider the following:

- inhaled steroids remain the most effective preventive medication for control of asthma. They have been proven to improve symptoms, reduce asthma attacks, and to protect against hospitalizations for asthma and even death from asthma.
- preventing asthma attacks means avoiding steroid tablets, which have a much greater effect on the bones (and eyes, skin, muscles, blood sugar, etc.) than the inhaled form.
- you and your doctor can work together to find the lowest dose of inhaled steroids that controls your asthma and prevents attacks. Avoiding things that worsen your asthma and taking non-steroid medications can help to achieve this goal.
- keeping your bones strong is important and achievable. You can test your bone density with a simple, painless X-ray and you can strengthen your bones with calcium, vitamin D, exercise, and a variety of very effective bone-building medications.

News about Partners Asthma Center

Partners in Excellence Award

Elaine Carter, R.N., Asthma Nurse at Partners Asthma Center, received an individual Partners in Excellence Award for outstanding Quality Treatment and Service at a ceremony at Brigham and Women's Hospital on December 13. The award recognizes her devoted care given to patients at multiple Asthma Center practice sites across the

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Partners HealthCare network. She has also played a key role in developing and supporting the Partners asthma disease management program, called Partners in Asthma Care, currently being implemented at four neighborhood health centers.

Expansion of Partners Asthma Center

Partners Asthma Center currently includes sites at Brigham and Women's Hospital, Massachusetts General Hospital, Faulkner Hospital, and — for pediatric asthma care — Newton-Wellesley Hospital. The New Year will bring expansion to include asthma specialist care at Newton-Wellesley Hospital (adult asthma care) and North Shore Medical Center. More details will appear in the next issue of *Breath of Fresh Air*.

Best of Breath of Fresh Air

Did you miss prior issues of *Breath of Fresh Air?* Are there articles that you remember and would like to re-read — or share with a friend? If so, the new year brings good news. You will soon have available: Partners Asthma Center's *Best of Breath of Fresh Air: The First Five Years (1995-2000)*. In it we will publish a compilation of feature articles, news about asthma, questions & answers, and spotlight features from past issues. We will make these books available to you free of charge at the Asthma Center. Stay tuned.

PARTNERS ASTHMA CENTER

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Asthma Support Group

The Partners Asthma Center Support Group will resume meeting in Year 2002. We will continue to meet on the last Tuesday of every month but at a new time: from 7:00 to 8:30 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 locations for the upcoming Asthma Support Group sessions.

Date:	*Location*	*Topic*
Jan. 29:	*Faulkner Hospital* *1153 Centre Street* *Jamaica Plain* *Suite 4930*	*Alternative Therapies for Asthma*
Feb. 26:	*Brigham and Women's Hospital* *75 Francis Street* *Boston* *Tower 4A*	*Oh, My Runny, Stuffy, Totally Blocked Nose!*
Mar. 26:	*Faulkner Hospital* *1153 Centre Street* *Jamaica Plain* *Suite 4930*	*Measuring Peak Flow: What Good Is It?*

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During a sporting event, the athlete can use his/her bronchodilator preventively (before the event) and once during the event. Need for a second rescue treatment during a gym class or competitive meet in the absence of a physician's supervision should disqualify the athlete from participating further. Good communication between player and coach is crucial. Most asthmatic attacks start the night before the athletic activity, if not sooner. If the athlete is honest with his coach and tells him when his asthma is acting up, the coach can modify the exercise that day as necessary, and the risk of a dangerous attack can be avoided.

Peak flow meters are the most underrated instruments at a trainer's disposal. They should be part of every trainer's first aid kit. It's not acceptable to have an athlete recover on the sidelines from an asthmatic attack, then send him/her back in to continue playing when the athlete reports, "I feel O.K. again." We know how to examine an ankle injury and to assess whether it is safe for the athlete to run on it again. For a person with asthma, a peak flow measurement should be part of the assessment. If the athlete's peak flow is still significantly reduced from his normal baseline, he should not resume practice or competition. Remember that a serious asthma attack can occur even in someone with generally mild, well-controlled asthma.

The peak flow meter can also pick up undiagnosed asthma. A professional football player was having difficulty performing up to par in training camp. He weighed 275 pounds, could bench press 500 pounds of lead weight, but just could not play at the anticipated level. When his peak flow was measured, it was only 320 liters/min! He had unrecognized, untreated asthma. He said, "I thought everyone hurt the same way when they sprinted." When he got proper medical care for his asthma, his level of performance improved dramatically; he is now all-pro in the National Football League.

What can a trainer do to help an athlete who is having an asthma attack? The athlete should stop exercising immediately and rest quietly. He/she should use a quick-acting inhaled bronchodilator. And don't be afraid to call emergency help (#911) if the athlete is not improving.

Exercise and Asthma (Part 3): The Athlete's Perspective

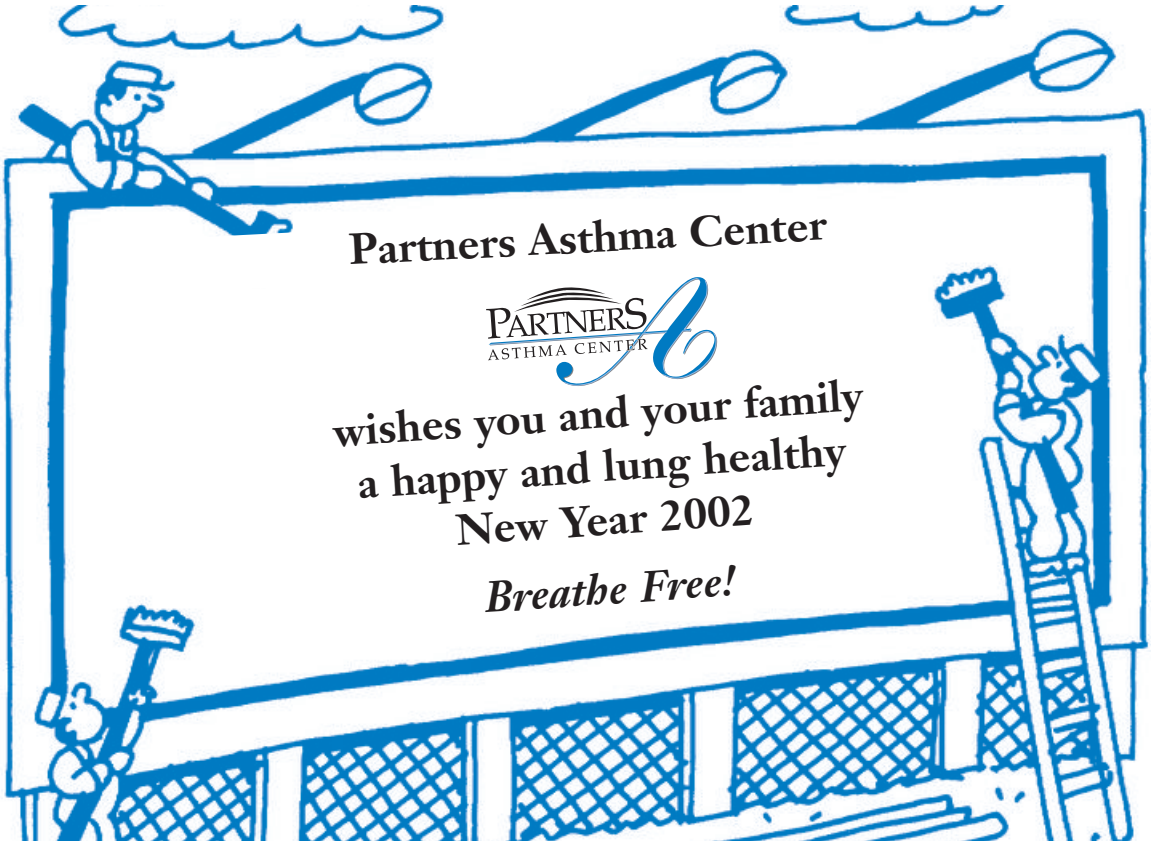
My asthma was diagnosed when I was 5 years old. I remember having allergy skin tests and being allergic to everything. I was sick a lot growing up. I was the skinny, little girl who couldn't do anything.

I'm lucky because I've gotten good medical care for my asthma. And I take it seriously. I have to use multiple inhalers, but it has been worth it. I do kick-boxing, spring track, and last year I was on the high-school gymnastics team. I run 2–5 miles a day.

I always take my bronchodilator inhaler with me on a run. Even if I have to shove it down into my Spandex shorts, it's always there. Anyone with asthma who does sports and doesn't have an inhaler handy is a fool. Coaches now know more about asthma, and they trust me to take care of myself. When my father was growing up with his asthma, he was basically told to sit on the couch and not to move!

Sometimes, a coach who is ignorant about asthma will accuse an athlete of being "hysterical," of not having a real, physical limitation. But asthma is not a lack of mental toughness, it's a breathing problem. For me, it feels as though a very heavy weight has been placed on my chest. I can't pull in a deep enough breath, and I can't get the weight off. There's just not enough air to breathe.

I don't believe that anyone should say: "I can't do it because I have asthma." Sure, if your asthma is acting up, you need to take it easy. That's different. But just the fact that you have asthma shouldn't prevent you from doing any sport or physical activity that you want to do.



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