



# Sports Shorts

## Guidelines for Pediatricians

This information is available on the Ohio Chapter, American Academy of Pediatrics' Web site at [www.ohioaap.org](http://www.ohioaap.org)

# Asthma and the School-Age Athlete

**Background:** Asthma affects nearly 9 million children in the United States. It is a chronic inflammatory disease with significant ethnic and racial disparity in prevalence and severity. Obesity in children has been associated with an increased prevalence of asthma, so a discussion of healthy choices regarding nutrition and exercise is important for every child. Exercise-induced asthma is less likely when asthma symptoms are kept under good control.

### Diagnosis:

**A. History.** History alone has poor sensitivity and specificity in the diagnosis of asthma. Uncontrolled asthma should be suspected in children with increased cough, shortness of breath, chest pain or chest tightness shortly after beginning exercise. Exercise-induced bronchospasm (EIB) should be suspected if symptoms begin following strenuous activity for 10 minutes or after exercise has been discontinued.

**B. Physical examination.** The physical examination may be completely normal at rest. Evaluation for signs of atopic disease and other airway diseases, as well as BMI for age, can reveal EIB risk factors.

**C. Pulmonary function testing.** Pre- and postbronchodilator spirometry is a useful tool in establishing the diagnosis of asthma and in evaluating its severity. An exercise challenge can provoke bronchospasm and assist in establishing the diagnosis when other tests are normal. Exercise challenges may be performed in the pulmonary function laboratory, on the field (free run challenge) or by reproducing the activity that provoked the symptoms. During the exercise challenge expiratory airflow measurements, (PEFR or FEV<sub>1</sub>) are performed every 5 minutes for 20-30 minutes. A > 15% drop in PEFR or FEV<sub>1</sub> is consistent with a diagnosis of EIB.

**The national Expert Panel Guidelines on asthma (EPR 3) recommend that parents, coaches & teachers of children with asthma should be advised:**

- that exercise may trigger asthma symptoms
- that the child is able to participate in activity
- that the child may need inhaled medication before exercise

Asthma action plans are recommended for all children with asthma that addresses use of controller medication, rescue treatment and prophylaxis. Management of asthma exacerbations and emergencies is part of the asthma action plan. Sample asthma action plans can be obtained at [www.nhlbi.nih.gov/guidelines/asthma/](http://www.nhlbi.nih.gov/guidelines/asthma/)

### Individualized Asthma Action Plan contains:

#### I. Pharmacologic treatment:

##### A. Controller therapy:

- Long-term control if appropriate (frequent or severe exercise-related asthma symptoms may be indicative of poorly controlled asthma)

**B. Rescue treatment:** Should be immediately available to all athletes with asthma

##### C. Prophylaxis: may include

- SABA (Short acting B<sub>2</sub> agonist) immediately prior to, or as close to, time of exercise as possible
- Nedocromil or Cromolyn – not as effective as SABA; may be helpful as adjunct to SABA for some patients
- Montelukast given daily may attenuate EIB in up to 50% of affected asthmatics

**Note:** Competitive athletes must disclose their medications and adhere to the standards set by their sports governing body. A complete list of approved and prohibited medications can be obtained from the U.S. Anti-doping Agency Drug Reference Line at 1-800-233-0393.

#### Tips:

1. When exercise in cold air or triggers during allergy season induce asthma symptoms, long-term controller medications may need to be adjusted.
2. Athletes should be partners in their asthma management. Even during periods of good symptom control they should have their rescue inhalers immediately available to them.
3. Athletes should be engaged in discussion about the advantages of optimal nutrition and avoidance of exposure to smoke. This is particularly important for athletes where specific weight requirements are mandated.

#### References:

Expert Panel Recommendations on Asthma (EPR 3)  
<http://www.nhlbi.nih.gov/guidelines/asthma>

Plaut, T.F. One Minute Asthma, 8th edition, Pedipress Inc., Amherst, Mass 2008.

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*Sports Shorts is provided by the Home and School Health Committee of the Ohio Chapter, American Academy of Pediatrics.*



# Sports Shorts

## Guidelines for Parents, Coaches, Athletes

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# Asthma and the School-Age Athlete

**Background:** Asthma is common, affecting 9 million children in the United States. It is likely that every coach and teacher will encounter an asthmatic child. Well-controlled asthma should allow a child's participation in sports. Those who interact with asthmatic children should be aware of the child's asthma status, their capacity to participate and the medications required to ensure full participation.

**Common Asthma Triggers during Sports:** Exercise, particularly in cold, dry air, is a common trigger. Stress of competition, sports requiring increased intensity and endurance, upper respiratory tract infections and allergic stuffiness can also trigger asthma.

### Considerations:

**Environment:** High levels of pollution, smog, pollen in the air, as well as cold, dry air can be a problem for asthmatics. A scarf or covering that surrounds the nose and mouth with warm, expired air may minimize cold air irritation.

**Sport:** High intensity and high endurance sports have been associated with increased asthma symptoms.

**Level of competition:** Competitive athletes have been shown to have increased symptoms during periods of increased competition.

**Cross training:** Cross training is an option for asthmatic athletes who are recovering from a respiratory illness or asthma attack. By choosing an activity less likely to produce asthma symptoms, the athlete can gradually be reintroduced to his or her previous level of activity.

**Smoking:** Smoke increases the frequency and severity of asthma symptoms. Athletes with asthma should avoid all exposure to smoke of any type.

### Signs and symptoms of an asthma attack:

- Increased cough
- Wheeze/ noisy breathing
- Shortness of breath
- Rapid breathing
- Difficulty walking or talking
- Inpulling between ribs and above breastbone
- Blue lips, tongue and/or fingertips

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**Asthma Action Plan:** This plan is developed with your health-care provider and gives specific information about the names, dosages and when each medication should be used. In your asthma control plan you will find how to handle an asthma attack, when to increase or add to your usual medications and when to call your provider or go to the emergency room.

### Responding to an Asthma Attack:

- A) Stop the activity.
- B) Stay calm.
- C) Know your Asthma Action Plan.
  - a) Remember to take your controller medications as prescribed by your health-care provider.
  - b) Always have your rescue medication immediately available and know how and when to use it.
- D) Call 911 if severe distress or medication is not helping.

### Tips:

1. Asthma alone does not preclude participation in sports activities for most students.
2. Work with your health-care provider for good long-term asthma control and an asthma action plan.
3. Rescue medication should always be available for athletes with asthma.
4. To help improve asthma, control modifiable triggers wherever possible. Consider gradual warmup exercises prior to participation, using sprinting, stretching or jogging. Try using a scarf or face mask to block cold air whenever possible. For pollen sensitive students, consider an OSHA rated N-95 filter mask to block pollen as one means to improve day-to-day control.

*\*Note: Athletes should notify their coaches of all medications taken immediately prior to or during an athletic event. Competitive athletes must disclose their medications and adhere to the standards set by their sports governing body. A complete list of approved and prohibited medications can be obtained from the U.S. Anti-doping Agency Drug Reference Line at 1-800-233-0393.*

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