

## WELLNESS UPDATE, 2002, #1

### ASTHMA AND ATHLETES

Asthma is the most common chronic health problem among American children, yet many young athletes aren't aware they may have it. Surveys indicate that 12 - 23 percent of high school and college athletes may have exercise-induced asthma. **Young people should learn to control their asthma, not avoid physical activity out of fear of suffering an asthma attack.** They, and their coaches, do need to know some basic information in order to effectively deal with this condition.

**Young people should learn to control their asthma, not avoid physical activity out of fear of suffering an asthma attack.**

#### ASTHMA FACTS

Asthma is a lung disease that is usually chronic and can be life-threatening, if not managed properly. With proper management, most people can lead a normal, active life. **The more obvious signs of asthma include:**

- 1) wheezing, or a whistle-like sound when exhaling,
- 2) shortness of breath,
- 3) tightness in the chest, and/or,
- 4) a chronic cough while at rest or after exercise.

Other symptoms in young athletes are: tiring easily, a large variance in performances, running with one hand on the chest, complaints of chest pain or pounding headaches, and a shaky, pale appearance following exercise - even after a rest period. **It is important for student-athletes with asthma to work with their physician, school nurse, athletic trainer, coach, and family in learning to recognize the early warning signs of asthma attacks and how such attacks should be managed.**

The cause of asthma attacks can vary greatly. Some of the factors which may trigger an asthma attack include: colds or other respiratory infections; allergic reactions to pollen, mold, animal dander, feathers, dust, or food; vigorous, aerobic exercise; exposure to cold or sudden temperature changes; air pollution, fumes, or strong odors; cigarette smoke; excitement; or stress. **Coaches and physical educators should be aware different factors trigger asthma in different people.**

When the lungs of a person suffering from asthma react negatively to an irritant, the muscles in the walls of the airways tighten and constrict the airways; the cells of the airways begin to produce a thick, sticky mucous that clogs the airways; and, the irritation causes the airways to swell, resulting in further constriction.

## EXERCISE AND ASTHMA

**Medical experts in the area of asthma state it is unnecessary and counterproductive to limit the activity of most asthmatics**, although limitations may be the best course of action for some. Research indicates that asthmatics do experience cardiovascular benefits from regular, aerobic exercise. **Most people who have mild to moderate asthma can participate or excel in sports, if their asthma is properly managed.**

**Most people who have mild to moderate asthma can participate or excel in sports, if their asthma is properly managed.**

Activities which require vigorous exercise (heart rate above 170 beats per minute) lasting longer than five minutes without any breaks generally cause an asthmatic to be more prone to an asthma attack. **Often an exercise-induced asthma (EIA) attack doesn't occur during exercise, but within 5 to 10 minutes following exercise. Aerobic exercise in a cool, dry environment is much more likely to stimulate exercise-induced asthma than exercising in a warm, humid environment.** Activities that are considered high risk for the onset of exercise-induced asthma are cross-country skiing, ice skating, hockey, basketball, football, middle- to long-distance running (especially in cool, dry weather), soccer, and cycling. **Swimming, baseball, running sprints, wrestling, strength training, golf, and tennis seem to present a much lower risk of exercise-induced asthma.** It is important to point out that many medical experts believe that if an asthmatic person understands how to effectively manage their disease, **no activity should be off-limits to most asthmatics.**

**No activity should be off-limits to most asthmatics, although swimming, baseball, running sprints, wrestling, strength training, golf, and tennis seem to present a much lower risk of exercise-induced asthma.**

Some suggestions for making workouts more comfortable for asthmatics are:

- 1) Consult with your physician before beginning an exercise program.
- 2) Take all asthma medications as prescribed by your physician.
- 3) Perform a 5- to 10-minute warm-up before vigorous exercise. Past experience may warrant a longer warm-up period.
- 4) Work out slowly for the first 10 - 15 minutes, keeping your heart rate below 140 beats per minute.
- 5) When trying new physical activities, increase duration and intensity slowly.
- 6) During cold winter months, limit outdoor exercise, or try breathing through a scarf or mask. (Cold, dry air greatly increases the risk of an exercise-induced asthma episode.)
- 7) Exercising in a warm, humid environment, such as a heated swimming pool, usually reduces the risk of exercise-induced asthma.

- 8) Limit exercise when air pollutants or pollen levels are highest, ie. rush hours and early morning hours.
- 9) Perform a graduated 10- to 30-minute cool-down after vigorous exercise. This allows the temperature changes in the airways to occur gradually and reduces the risk of exercise-induced asthma.
- 10) Avoid strenuous exercise when suffering from a cold or other respiratory infections.

## **MANAGEMENT OF ASTHMA**

Asthma attacks may range from mild to severe. They may begin suddenly, or take days to develop. Mild attacks, in which easy breathing is restored within a few minutes to a few hours, are most common. **Proper management of exercise-induced asthma includes a physician's examination prior to beginning an exercise routine, proper use of prescribed medications, knowledge of the conditions which may trigger an asthma attack, the warning signs signaling the onset of asthma, and the most effective way to treat an asthma attack, should one occur.**

**Proper management of exercise-induced asthma includes a physician's examination prior to beginning an exercise routine.**

The following guidelines may be helpful when dealing with an asthma attack .

- 1) Visit the school nurse to determine proper procedure for handling and reporting an asthma attack.
- 2) Ask the person if they could be having an asthma attack.
- 3) Help the person assume a comfortable position with the shoulders relaxed. Leaning forward with the elbows on the knees may be helpful. Encourage the person to breathe through pursed lips.
- 4) Be calm and reassure the person that you understand and know how to help. Reducing his/her anxiety is very important.
- 5) Encourage the person to take proper medication, if medication has been prescribed by his/her physician.
- 6) Encourage the person to drink fluids which are neither too hot or too cold.
- 7) If medications do not appear to be working effectively, notify the nurse, parent, or guardian.

## **IF THE FOLLOWING SYMPTOMS OCCUR, SEEK MEDICAL ATTENTION IMMEDIATELY!**

- 1) The person may become breathless and have difficulty talking.
- 2) The person's neck muscles may become tighter with each breath.
- 3) The person's lips and nail beds may turn grayish or bluish in color.
- 4) The person experiences chest retractions (chest skin sucked in).

**A SEVERE ASTHMA EPISODE IS A MEDICAL EMERGENCY!**

**Questions and comments about exercise-induced asthma or other areas of student-athlete wellness are welcomed and encouraged. They should be directed to Alan Beste, ATC, Administrative Assistant, Iowa High School Athletic Association, PO Box 10, Boone, Iowa 50036. (515)432-2011, <abeste@iahsaa.org>.**

**SOURCES:** American Lung Association of Iowa, assorted pamphlets and materials; Afrasiabi, Rahmat, MD & Spector, Sheldon, MD. "Exercise-Induced Asthma: It Needn't Sideline Your Patients," The Physician and Sports Medicine, Volume 19, Number 5, May, 1991; Arnheim, Daniel, D. Modern Principles of Athletic Training, Times Mirror/Mosby College Publishing, St. Louis, 1989; Goldberg, Ellie, M.Ed. "Exercise And Asthma," Sidelines, Volume 2, Number 4, Summer 1993, National Youth Sports Foundation For The Prevention Of Athletic Injuries, Needham, MA; Gong, Henry, MD. "Breathing Easy: Exercise Despite Asthma," The Physician and Sports Medicine, Volume 20, Number 3, March, 1992; Horswill, Craig, Ph.D. & Calhoun, William, MD. "Exercise-Induced Asthma in the Wrestler," Wrestling USA, November, 1990; Meyers, Lou. "Athletes and Asthma," Drug-Free Athlete Sport & Fitness, September, 1991; Wagner, Jon, Pharm. D. "Exercise-Induced Asthma," Drug-Free Athlete Sport & Fitness, June, 1993; Your Child And Asthma, National Jewish Center For Immunology and Respiratory Medicine, Denver, Colorado, 1992; Understanding Asthma, National Jewish Center For Immunology and Respiratory Medicine, Denver, Colorado, 1992; Roselund, Dawn. "Helping Your Athletes With Asthma," American Coaching Effectiveness Program, Champaign, IL; Rund, Douglas, MD. "Asthma," The Physician and Sports Medicine, Volume 18, Number 1, January, 1990; Stamford, Byrant, Ph.D. "Exercise-Induced Asthma," The Physician and Sports Medicine, Volume 19, Number 8, August, 1991; Wiener, Chalres, MD. "Exercise-Induced Asthma," Athletic Training, Spring, 1989.

# EXERCISE INDUCED ASTHMA

## GENERAL INFORMATION

- Asthma is one of the most common chronic health problems among children. Exercise-induced asthma (EIA) is a condition in which the airways constrict during, or following, vigorous exercise. A variety of factors may trigger an EIA attack. These factors include, but are not limited to:
  - Respiratory infections, colds
  - Allergies to pollen, mold, or dust
  - Excitement, stress
  - Exposure to cold air or sudden temperature changes
  - Air pollution, fumes, or strong odors
  - Vigorous, aerobic exercise

## HOW ASTHMA AFFECTS THE LUNGS

- Breathing difficulty is caused by three types of reactions in the air passages of the lungs:
  - Inside walls of the airways swell up
  - Muscles in the walls of the airways tighten and constrict
  - Swollen walls produce excess mucus which clogs the airways
- The child struggles to breathe because there is difficulty getting air in and out of the lungs.

## ASTHMA AND EXERCISE

- Consult your physician before beginning an exercise program.
- Take all asthma medications as prescribed by your physicians.
- Starting about 30-60 minutes before vigorous exercise, perform a 10-15 minute warm up. Past experience, may warrant a longer warm up period.
- Begin working out slowly for the first 5-10 minutes, keeping the heart rate at about 50%-60% of the target heart rate.
- Perform a graduated 10-30 minute cool down after vigorous exercise. This allows the temperature changes in the airways to occur gradually and reduces the risk of EIA.
- When trying new activities, increase duration and intensity slowly.
- During cold winter months, limit outdoor exercise, or try breathing through a foam nylon mask. (Cold air greatly increases the risk of an EIA attack.
- Exercising in a warm, humid environment, such as a swimming pool, usually reduces the risk of an EIA attack.

## SYMPTOMS

### ***Signs & Symptoms of Asthma***

- A distinct change in breathing
  - wheezing and shortness of breath
  - fast, noisy breathing or panting
  - flared nostrils
  - the notch of the Adam's apple may sink in
- Chest tightness and/or coughing

### ***Signs & Symptoms of a Serious EIA Attack***

- Breathlessness may cause the athlete to talk in one-to-two word phrases, or not talk at all.
- The neck muscles may tighten with each breath.
- The athlete may have an increased breathing rate while resting.
- The lips and nail beds may have a grayish or bluish color.
- The athlete may exhibit chest retractions (chest skin sucked in).

**THESE SIGNS & SYMPTOMS REQUIRE IMMEDIATE MEDICAL ATTENTION!**

## FIRST AID IN CASE OF BREATHING DIFFICULTY

- Ask the student if they are having an asthma episode.
- STAY CALM, reassure the student by your tone of voice and your attitude of being able to manage the situation.
- Help the student to assume a comfortable position with shoulders relaxed. Leaning forward with elbows on knees may be helpful.
- Encourage the student to use pursed-lip breathing.
- If you can find out what triggered the asthma episode, remove it - or the student - from the area.
- Encourage the student to take appropriate medication if his or her doctor has prescribed medicine for a time of breathing difficulty. (Check with the school nurse for proper school procedure.)
- Drinking liquids that are neither too hot or too cold may be helpful.
- If there is no improvement, notify the school nurse, parent or guardian. Follow established emergency procedures.

For more information contact:

American Lung Association of Iowa  
1025 Ashworth Rd, Ste 410 • West Des Moines, IA 50265-6600  
1-877-92-LUNGS