

THE COACH'S ASTHMA CLIPBOARD PROGRAM

# WINNING WITH ASTHMA



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[www.WinningWithAsthma.org](http://www.WinningWithAsthma.org)

**Asthma Foundations of Australia**

[www.asthmaaustralia.org.au](http://www.asthmaaustralia.org.au)

1-800-645-130

**National Athletic Trainers' Association**

<http://www.nata.org>

214-637-6282

2952 Stemmons Freeway, Ste. 200

Dallas, TX 75247

**Centers for Disease Control and Prevention (CDC)**

<http://www.cdc.gov/asthma/default.htm>

**National Heart Lung and Blood Institute (NHLBI)**

[http://www.nhlbi.nih.gov/health/dci/Diseases/Asthma/Asthma\\_WhatIs.html](http://www.nhlbi.nih.gov/health/dci/Diseases/Asthma/Asthma_WhatIs.html)

**National Asthma Education and Prevention Program (NAEPP)**

"Guidelines for Diagnosis and Management of Asthma; Expert Panel Report 2"

<http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>

**The Physician and Sports Medicine Online**

<http://www.physsportsmed.com/index.html>

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THE COACH'S ASTHMA CLIPBOARD PROGRAM

[www.WinningWithAsthma.org](http://www.WinningWithAsthma.org)



*On a team of 15, you can expect at least one player to have asthma. Every year thousands of athletes with asthma successfully participate in a variety of athletic events. This program was created so coaches could learn about asthma, how it affects an athlete's ability to compete, and how a coach can help athletes manage their symptoms while playing their very best.*

*Good luck and have a healthy successful season!*

This Winning With Asthma Educational Booklet corresponds to the online educational program, [www.WinningWithAsthma.org](http://www.WinningWithAsthma.org).

# ASTHMA BASICS

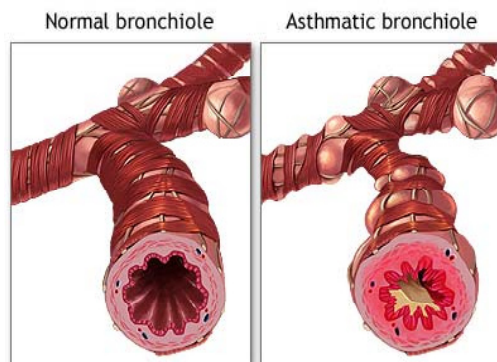
## Did you know?

- On a team of 15 players, you can anticipate at least one athlete will have asthma.
- Asthma is one of the most common chronic childhood diseases.
- Asthma is the leading cause of missed school days due to chronic disease.
- People with asthma can participate in almost any sport or exercise when their asthma is well controlled.
- Asthma is a serious chronic disease, and, while there is no cure, it can be controlled with proper management.

## Physiology of Asthma

When we breathe, air (oxygen) moves easily in and out of our lungs. To get oxygen into our blood and tissues, it travels down to many small airways called bronchial tubes.

The inside walls of these bronchial tubes are lined with cells that produce mucus - a sticky liquid that helps carry pollutants and foreign substances out of the lungs. Smooth bands of muscle wrap around and surround the outside of the bronchial walls (airways). When these muscles are relaxed, oxygen moves easily in and out.



ADAM.

## Resources & References

### Minnesota Department of Health: Asthma Program

<http://www.health.state.mn.us/asthma>

651-201-5909 or 1-877-925-4189

85 East Seventh Place

PO Box 64882

St. Paul, MN 55164-0882

*Managing Asthma in Minnesota Schools: A Comprehensive Resource & Training Manual for School Personnel*

[www.health.state.mn.us/divs/hpcd/cdee/asthma/School.html](http://www.health.state.mn.us/divs/hpcd/cdee/asthma/School.html)



### Utah Department of Health, Asthma Program

<http://health.utah.gov/asthma>

*Utah Asthma School Resource Manual*

<http://health.utah.gov/asthma/schools.html>

801-538-6141

PO Box 142106

Salt Lake City, Utah 84106

### National Jewish Medical & Research Center

[www.nationaljewish.org](http://www.nationaljewish.org)

1-800-NJC-9555

1400 Jackson Street

Denver, CO 80206

## GLOSSARY

**spacer** - A device that attaches to an inhaler that helps direct the medication into the lungs. A spacer does not have a valve and is not as effective as a holding chamber.

**trigger/triggers** - A substance or environmental condition that cause asthma symptoms to appear. Exercise and strong emotions can also be defined as triggers.

**wheezing/wheeze** - The whistling sound which occurs when air moves through narrowed or tightened airways. May be heard on exhalation. Wheezing is a classic symptom of asthma.



## ASTHMA BASICS

When a person has asthma, there is usually some underlying swelling and an overproduction of the sticky mucus in the airways. When this happens, it makes the size of the airway opening (the lumen) smaller and there is less space for oxygen to get through.

For many people with asthma, exposure to specific allergens and irritants, or even aerobic activity, can cause the muscles around the airways to contract and symptoms to begin. When the muscles contract around the airways, it is called bronchospasm. When these muscles contract, the airway passages also narrow, making breathing more difficult and causing the athlete to begin experiencing an asthma attack.

### Signs & Symptoms

Asthma affects people in different ways and not every athlete will have the same signs and symptoms.

*The most common symptoms to watch for include:*

- *Coughing, especially at night*
- *Wheezing or breaths that sound high pitched when exhaling*
- *Chest pain or tightness*
- *Shortness of, or gasping for breath*
- *Excessive fatigue*

## ASTHMA BASICS



### Triggers: what can cause an asthma attack?

Exposure to certain allergens, irritants, or activities that cause rapid breathing (aerobic activity) can trigger an asthma attack. An athlete may know what triggers his/her asthma, and efforts should be made to avoid exposure to those triggers when possible.

#### *Common triggers include:*

- Animal dander from warm-blooded, feathery and/or furry pets (Example: cats or dogs)
- Dust mites
- Environmental/secondhand tobacco smoke
- Air pollution (poor air quality)
- Chemicals or strong smells (Example: perfume or cologne, cleaning solutions)
- Aerobic exercise or any activity that causes a person to breathe rapidly
- Strong emotions (Example: laughing, crying, or emotional stress)
- Breathing in cold air

## GLOSSARY

**holding chamber** – A small chamber connected to a metered-dose inhaler (MDI) in order to take inhaled medications. The chamber allows the person with asthma to inhale medication more deeply into the airways. Holding chambers have valves that prevent the medication from escaping until the person with asthma breathes in.

**inhaled corticosteroid** – Steroidal anti-inflammatory medication useful for people who have asthma. The medication is breathed in through the mouth into the lungs. Also called "ICS". Not the same as anabolic steroids.

**inhaler/metered-dose inhaler (MDI)** – A device used to deliver a variety of commonly prescribed asthma medications which help ease breathing by opening the airways.

**irritant** - Any substance which causes swelling of the respiratory system. An irritant may trigger asthma symptoms, but they may not be considered an allergen. Examples of irritants include tobacco smoke, chemicals, pesticides, or air pollution.

**long-term or controller medication** - These kinds of medications provide long-term relief by acting in a preventive way to make airways less sensitive, minimizing or reducing symptoms before they appear.

**mucus** - Often called phlegm or sputum, this sticky fluid is produced by the membranes lining the airways. Exposure to certain triggers can increase mucus production. Excessive amounts of mucus make breathing more difficult.

**nebulizer** - A small, portable machine used to deliver certain asthma medications.

**peak flow meter (PFM)** - A small, portable hand-held device which measures how well the lungs are able to expel air, allowing people with asthma to detect airway narrowing and adjust medications accordingly.

**quick relief or rescue medication** - Medicine taken to relieve asthma symptoms. Called "quick relief" because they can act immediately to reduce symptoms that appear suddenly.



## GLOSSARY

**asthma episode/attack/exacerbation** - A time when asthma symptoms flare up or intensify, requiring immediate adjustments in treatment and medication to get symptoms under control. Asthma episodes may occur suddenly, with few warning signs, or build slowly over a period of hours or even days.

**asthma management** - Managing, preventing, treating and controlling factors (environmental, medications, etc.) that affect a person's asthma.

**bronchial tubes (bronchus)** - The major airways of the respiratory system that carry air from the trachea (windpipe) to the microscopic air sacs (alveoli) in the lungs.

**bronchiole** - Any of the fine, thin-walled, tubular extensions of a bronchus. Part of the respiratory system.

**bronchodilator** - A medication used by people who have asthma to relax bronchial muscles, and, in turn, open up the bronchial tubes.

**bronchospasm; bronchoconstriction** - The tightening of the airways that occurs with asthma. Caused when the muscles around the bronchial tubes contract in response to specific triggers.

**controller or long-term acting medication** - The standard treatment of asthma for most patients who have "chronic" asthma and need daily medication. These kinds of medications provide long-term relief by acting in a preventive way to make airways less sensitive, minimizing or reducing symptoms before they appear.

**corticosteroid** - Steroidal anti-inflammatory medication useful for people who have asthma. Considered the most effective "controller" medication available today. Delivered as an inhaler or in pill or liquid form. Not the same as anabolic steroids.

**dander** - Scaly or shedded dry skin that comes from animals or bird feathers. Dander may be a cause of an allergic response in some people.

**exercise induced asthma (EIA)** - Asthma symptoms which appear during or following exercise. Symptoms may be minimal or severe enough to require emergency treatment. Some people who have chronic asthma have exercise as a trigger. Some people only develop bronchoconstriction (asthma symptoms) when they exercise.

## MEDICATIONS

### Medications:

There is not a cure for asthma and we really do not know what causes it. However, we do know that with the right treatment, an athlete can be active and play sports just like anyone else. Normally, asthma can be controlled by avoiding triggers and using proper medications. Generally there are two types of asthma medications:

- Long-term or controller medications
- Quick-relief or rescue medications

Both types of medications are important to help athletes keep their asthma under control, but each type is used for different purposes. Many athletes with asthma need to take both types of medications, depending on how severe their asthma is.

### Daily controller medications

#### Most common forms:

- Metered dose inhalers (MDI)
- Diskus
- Dry powder inhaler



Long-term daily controller medications treat the main problem of asthma -- airway swelling or inflammation. Controller medications are taken at least once daily and help prevent asthma attacks from happening long term. These medications reduce the swelling, prevent excess mucus from developing, and help prevent the muscles from contracting around the airways. These medications also help make the airways less "twitchy" or irritated.

## MEDICATIONS

### Rescue medications

#### Most common forms:

- Metered-dose inhaler (MDI)
- Nebulizer
- Autohaler or breath activated

Rescue medications relax the muscles around the airways, making it easier to breathe right away. These medications give temporary relief and their effects can last up to 4 hours. Rescue medications do not treat the swelling or mucus in the airways. When they wear off, the muscle tightening can return. Rescue medications work quickly, usually within 5 minutes if taken right away.



These are also the medications some athletes will take as a preventative treatment before they start any aerobic activity.\*

#### General instructions for taking rescue medications:

- Take 1 puff, hold breath for 10 seconds and exhale.
- Wait 1-2 minutes and repeat above step.

\*If the athlete's health care provider has directed the athlete to take rescue medication prior to activity, take the medication 10-15 minutes before starting the warm up routine.

## GLOSSARY

**airways** - Passages in the lungs that move air in and out of the body. Sometimes called bronchiole tubes, bronchi or respiratory system.

**albuterol** (Beta 2 agonist or albuterol sulfate) - The most commonly seen rescue or quick relief medication used to reduce asthma bronchospasm, or as a preventative medication for exercise induced asthma. Most often used as an inhaler or with a nebulizer.

**aerobic activity** - Any activity that causes increased intake of oxygen into the lungs.

**air quality index (AQI)** - A report of daily outdoor air quality conditions. In Minnesota and Utah, four pollutants are used to calculate the AQI: ground-level ozone, sulfur dioxide, carbon monoxide and fine particles (PM2.5).

**allergen** - A substance which causes an allergic response in sensitive individuals. Allergens can be either natural (e.g., pollen, dust) or man made (e.g., perfume, cleaning agents).

**allergy/allergies** - An overreaction by the body's immune system to a specific foreign substance (allergen). An allergy occurs only in people sensitive to a particular allergen(s).

**allergic reaction** - Response in sensitive people to specific allergens. An allergic reaction can occur in different parts of the body. Common areas include the skin, the eyes, the respiratory system and the gastrointestinal tract. Symptoms often include itching, sneezing, runny nose, coughing, wheezing or shortness of breath.

**asthma** - A chronic disease of the lungs. Symptoms may include wheezing, coughing, feeling of "tightness" in the chest, difficulty breathing, itching neck, throat and ears. Symptoms vary greatly from person to person. Individuals with asthma may also experience "ups and downs" with symptoms. Symptoms can be well managed for most people who have asthma. Certain substances or conditions may trigger asthma symptoms.

**asthma action plan (AAP)** - A document outlining an individual treatment plan for a person who has asthma; developed in consultation with the health care provider, family members and caregivers. Effective action plans help patients control their asthma and live healthy active lives.

## TALKING WITH PARENTS AND ATHLETES

### How to talk with parents and athletes about asthma:

Before the first practice of the season, clarify with parents and athletes how to assist in managing the athlete's asthma.

#### *Things to remember:*

- Asthma Action Plans (AAP)
  - ❖ Each athlete with asthma should have an asthma action plan developed by his or her primary care provider.
- Inhalers/medication
  - ❖ It is not okay to share inhalers. Each athlete with asthma should have his or her own inhaler. (And if possible a holding chamber.)
- Open communication
  - ❖ It is important that both athletes and parents are open about their needs and how best to manage their asthma.
- Support
  - ❖ Be open and express your support.
  - ❖ Do not leave an athlete having an asthma attack alone.
  - ❖ Never encourage an athlete to "tough it out" and don't allow others to tease the athlete.
  - ❖ Never encourage a child who is wheezing to continue the activity.
  - ❖ Help athletes enjoy the game/sport by eliminating negative stigmas.

#### *Coaches pre-season asthma checklist:*

- Communicate to parents and athletes the importance of communicating their asthma needs.
- Ask for copies of asthma action plans from each athlete with asthma.
- Check with athletes with asthma to be sure that they have a full rescue (quick relief) medication inhaler available at all times.

## MEDICATIONS

### Tools to use when taking medications:

**Asthma Action Plan:** A document outlining an individual treatment plan for someone with asthma; developed in consultation with the health care provider, family members, and caregivers. Effective action plans help patients control their asthma and live healthy, active lives.



#### **Holding chamber**

**or spacer:** A small chamber connected to a metered-dose-inhaler (MDI) in order to take inhaled medications. It is used to slow down the medication so the athlete can inhale it deeply into the lungs. Holding chambers have valves that prevent the medication from escaping until the person with asthma breathes in.

**Peak Flow Meter (PFM):** A small, portable hand-held device which measures how well the lungs are able to expel air, allowing people with asthma to detect airway narrowing and adjust medications as needed.

**Nebulizer:** A small, portable machine sometimes used to deliver certain asthma medications.

### A coach's checklist

- Check that players have brought the correct medication and that the canister is full.
- An athlete should take his or her rescue inhaler during an asthma attack, using a device called a holding chamber. (Note: Not all athletes will have a holding chamber to administer medications.)
- Both rescue and long-term medications come in inhaler devices. Be sure athletes are using their rescue medication while at practice or during the games. (Refer to pictures on page 5-6).
- Controller medications also come in inhaler canisters (similar to those of rescue medications) but should not be used during an asthma attack.
- Medications should never be shared.

### Before you play:

Monitor outdoor air quality/pollution.

- People with asthma are more sensitive to air quality, and it can be a trigger for an asthma episode/attack. The Air Quality Index (AQI) is a tool that can help you understand whether the air quality is good or bad on any particular day. When the AQI exceeds 100, athletes may experience problems breathing. To check the local AQI or sign up to receive e-mail notification when air quality alerts are released, go to: <http://aqi.pca.state.mn.us/hourly/>

Warm up approximately 15 minutes.

- Can include walking, jogging, or short sprints.
- It is important to wear a scarf or mask during cold air days to warm the air before it reaches the lungs.
  - ❖ Athletes with asthma who play sports in cold weather, such as hockey, skiing, and ice skating, should take extra precautions. Warming up before participating in athletic events helps prevent asthma attacks due to breathing cold air.

Winter or cold-weather sports:

- Athletes with asthma should warm up *longer, for* 30-60 minutes.
- Wear a mask or scarf to warm cold air before breathing it.
- Take asthma rescue medication 15-30 minutes before skiing, snowboarding, ice skating, etc.

Cool down a *minimum* of 10 minutes.

## WHEN TO CALL 911

There are certain symptoms which coaches should not attempt to deal with. When one or any combination of these symptoms occur, call 911 immediately, and continue to care for the athlete until medical assistance arrives.

### Call 911 immediately if:

- The athlete's lips or nail beds are blue.
- The athlete is having difficulty talking, walking, or drinking liquids.
- Rescue or quick relief medications are not working, are unavailable, or have been taken too recently to use again.
- The athlete's nostrils are flaring out.
- You see neck, throat, or chest retractions.
  - ❖ *This is a sucking in of the skin between the ribs or at the base of the neck as the muscles try to help pull air in.*
- The athlete is in obvious distress.
- There is a change in the athlete's level of consciousness or he/she is showing signs of confusion.
- The athlete's condition is rapidly deteriorating.
- You are not sure what to do!

***Do not hesitate to call 911!***

## EXERCISE INDUCED ASTHMA (EIA)

### Exercise Induced Asthma (EIA)

#### *What is it?*

When athletes who have asthma begin to exercise, they tend to breathe faster and deeper through their mouths. The air simultaneously cools and dries the airways. Because the air bypasses the warming, humidifying, and filtering effects of the nose, airborne pollutants, pollens, and other allergens are able to penetrate deeper into the lungs. This is thought to irritate and tighten the airways of athletes who have asthma.

#### *How do you know if you have exercise induced asthma?*

For some people, exercise induced asthma occurs within three to eight minutes of starting activity or exercise. For others, exercise induced asthma occurs after stopping exercise, but often the exercise induced asthma starts during exercise and worsens when exercise stops.

#### *Other things to remember:*

- Participation in any sport often requires use of rescue or quick-relief medications and close monitoring. Good warm-up and cool-down periods are also helpful.
- Everyone can benefit from physical exercise. When asthma is well controlled, people with exercise induced asthma should be able to participate in any sport.
- While playing cold air sports, airways can tighten even quicker because of the cold air. Extra precautions should be taken. It is recommended that cold weather sport athletes wear a mask or scarf to warm the cold air.

## EXERCISE INDUCED ASTHMA (EIA)



### *What can a coach do to assist athletes with EIA?*

- Ensure athletes with asthma take their rescue (quick relief) inhaler before starting aerobic activity (as directed by their health care provider) and again if they start to experience asthma symptoms during the athletic event.
- If an athlete begins to experience an asthma attack, check the athlete's Asthma Action Plan (AAP), or refer to the "What to do during an asthma attack" steps on page 11.
- Have athletes warm up for 15-20 minutes doing light, intermittent exercises.

### *Winter or cold-weather sports, follow these suggestions:*

- Have athletes with asthma warm up *longer*, for 30-60 minutes.
- Wear a mask or scarf to warm cold air before breathing it.
- Take asthma medications 15-30 minutes before skiing, snowboarding, ice skating, etc.

## WHAT TO DO DURING AN ASTHMA ATTACK

### What to do during an asthma attack:

1. Have the athlete STOP whatever activity he or she is doing.
  - If the athlete is a young child and the parent is at the event, send another player to go get the parent.
  - Do not, under any circumstances, leave the athlete alone.
  - If an athlete's Asthma Action Plan (AAP) is available, begin following it immediately. (Encourage athletes that do not have an AAP to consult their health care provider to create one.)
2. Administer rescue or quick relief medication (inhaler):
  - Instruct the athlete to take his/her rescue inhaler using a holding chamber, if available.
  - Take a puff, hold breath for 10 seconds, exhale, and wait 1-2 minutes. Repeat one more time.
  - Have the athlete sit up and breathe in slowly through his/her nose and out through pursed lips. It reassures the athlete if the coach does this with them.
  - Provide sips of room temperature water to the athlete.
3. Repeat step 2 if symptoms continue or return.
4. When the symptoms are completely gone, the athlete can return to playing.
  - If symptoms recur after the athlete resumes playing, repeat steps above.
  - The athlete should not be allowed to resume playing for the remainder of the game.

The athlete should see his or her health care provider as soon as possible if symptoms continue or begin again.

***Remember - do not panic. Remain calm and reassure your player that he or she will be okay.***