

Asthma and Allergy  
Foundation of America

Ready? Set? Go with Asthma!

**Exercise-Induced Asthma**





Asthma and Allergy  
Foundation of America



This program was developed by  
the Asthma and Allergy Foundation of America  
through funding from the  
American Legion Child Welfare Foundation



# Ready?

**You can help your students with asthma succeed by:**

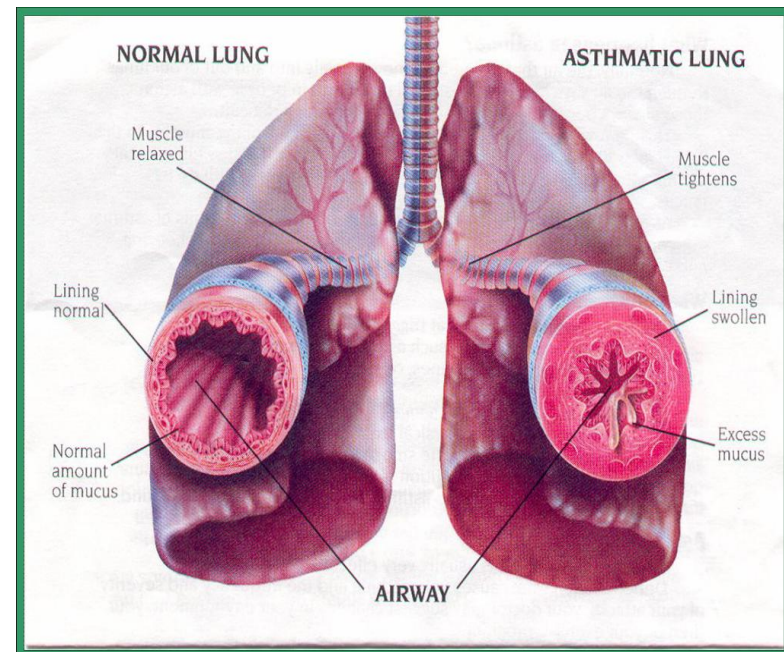
- Understanding asthma
- Sharing your positive attitude
- Communicating well with the rest of the team



# What is Asthma

Airways become smaller or narrower, due to:

- Underlying inflammation or swelling
- Increased mucus production and
- Contraction of muscles around the airways, or bronchospasm



# Asthma Symptoms

Symptoms may include:

- Coughing
- Wheezing
- Chest tightness
- Shortness of breath
- Excessive fatigue



# Diagnosing Asthma

A healthcare professional makes an asthma diagnosis after:

- Taking a complete history
- Performing a physical exam
- Having the student perform breathing tests



# Asthma Triggers: Allergens

## Allergens:

- Animal dander from feathered or furry pets
- Cockroach droppings
- Dust mites
- Molds
- Pollen



# Asthma Triggers: Irritants

## Irritants:

- Environmental tobacco smoke or second hand smoke
- Air pollution
- Chemicals and strong smells





# Additional Triggers

- Weather changes
- Upper respiratory infections
- Cold air
- Strong emotions
- **Exercise**



# Exercise Induced Asthma (EIA)

- Is a narrowing of the airways that occurs 5-20 minutes after activity
- Is present in the vast majority of individuals with asthma



# What Happens in EIA

- Breathing in cool, dry, and unfiltered air through the mouth
- Airways narrow, reducing the air flow
- Harder to move air in and out of the lungs
- Coughing, wheezing, and difficulty breathing



# Duration of EIA Symptoms

- Symptoms begin during exercise and usually worsen 5-20 minutes *after* stopping activity
- Some people experience a “late-phase reaction” 4-12 hours after exercising. Symptoms usually less severe.



# Recommended Activities

**Sports or activities that call for short bursts of activity such as**

- Baseball
- Downhill skiing
- Football
- Golf
- Some track and field events
- Swimming
- Tennis
- Volleyball
- Wrestling



# Students with Asthma Can Excel

- At least one in six U.S. athletes at the 1996 Olympic Games had a history of asthma
- Out of 699 athletes, 117 (16.7%) were found to have a history of asthma, or to have used asthma medications, or both
- At the 1998 Winter Olympics in Nagano, Japan, 22.4% of the 196 U.S. athletes had asthma



# SET?

Are you set to learn about asthma medicines and monitoring?

- Managing asthma is a team effort and includes **YOU**
- Effective communication, medicines, and monitoring are the key components to success
- Every student with asthma should provide you with their asthma action plan



# Long-Term Control Medicines

- Also called “controllers”
- Prevent lung inflammation, but will *not* help during an asthma attack
- Must be taken for several days before positive effects are noted





# Quick-Relief Medicines

- Sometimes called “rescue medicines”
- Relax the muscles around the airways and decrease the narrowing of the airways
- Provide immediate relief lasting several hours
- Used to treat asthma attacks
- Used to prevent and treat EIA



# Quick-Relief Inhaler Use

- Use 10-15 minutes before warm-up as a pre-treatment
- Take 1 puff, hold breath 10 seconds, exhale
- Wait 1-2 minutes and repeat as noted on the student's asthma action plan



# Helpful Medicine Tips

There are 3 ways to track how much medicine is left:

- Use inhaler with a built-in dose counter
- Mark each time the inhaler is used using a card/pencil
- Scratch off a number each time the inhaler is used with self-adhesive “Scratch-a-Dose™” labels



# Peak Flow Meters

- Portable hand-held devices that measure how well air moves out of the airways
- Valuable tool used to communicate the severity of an episode
- Peak flow reading less than 80% of the student's personal best is a call for action



# GO with Asthma!

- Ensure student has taken asthma medicine
- Warm-up and Cool down periods
- Hydrate before, during and after exercise
- Check pollen and air quality
- Cold Weather



# Warm-up and Cool-down Periods

- Help prevent asthma attacks
- Prevent the air in the lungs from quickly changing temperature
- Hydrate before, during and after exercise



# Air Quality and Pollen Counts

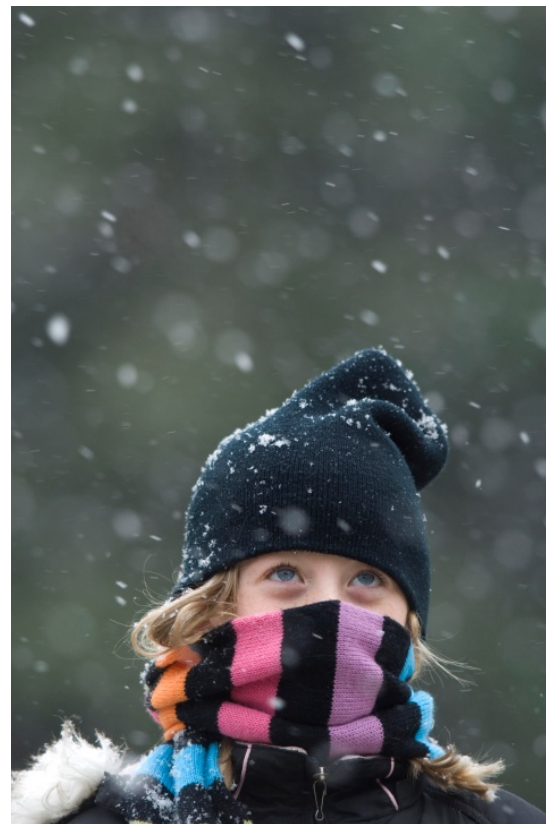
- Some students may have difficulty being active on days when there is poor air quality or high pollen counts.
- To check **pollen** in your area, visit [www.aafa.org](http://www.aafa.org), enter your zip code and click “pollen”
- To check **air quality** visit [www.airnow.gov](http://www.airnow.gov)
- Avoid outdoor activities on high pollen or poor air quality days, if possible.



# Cold Weather

**When it is cold outside, ask students with asthma to:**

- Warm up longer
- Wear masks or scarves to warm air





# Asthma Attacks

If one or more of the following symptoms are present the student is having an asthma attack:

- Coughing or wheezing
- Difficulty breathing, shortness of breath
- Difficulty in talking and walking due to shortness of breath
- Chest tightness



# In an Emergency

- Ask the student to stop the activity and sit down (not recline)
- Follow the emergency plan on that student's asthma action plan
- Ask someone to contact the parents/guardians and call for help while you stay with the child



# Remember to...

- Keep a copy of each student's asthma action plan *with you at all times*
- Encourage students to label their medicines, spacers and peak flow meters
- Remind students to pre-treat, warm-up and cool-down
- Discourage sharing of inhalers
- Make sure inhalers are not empty
- Ensure that rescue inhalers are available



# Remember to...

- Help peers to be supportive
- Maintain open communication with parents/guardians, staff, school nurse and other healthcare professionals



# Communication is the Key

Common concerns about students with asthma include:

- Leaving their inhalers at home
- Not having/following their asthma action plan
- Claiming to have asthma episodes with no visible signs

Each one of these issues must be addressed by communicating with the students' parents/guardians.



# ***You are now ready and set to help your students go with asthma!***

Jerome “The Bus” Bettis, says,

*“I look at my asthma like the team I’m going to play against on Sunday. I train and I prepare to win. Today I’m proof that if you manage your asthma right, it doesn’t have to get in the way of your game.”*



# For more information

## Contact

**Asthma and Allergy Foundation of  
America**

**1-800-7-ASTHMA**

**[www.aafa.org](http://www.aafa.org)**



Asthma and Allergy  
Foundation of America

Ready? Set? Go with Asthma!

# Ready? Set? Go with Asthma!

## Exercise-Induced Asthma

### *Power Point Talking Points*

#### **Slide 4: What is Asthma?**

Students with asthma have a chronic lung condition that causes their airways to become smaller or narrower, due to:

- underlying inflammation or swelling
- increased mucus production, and
- contraction of muscles around the airways, or bronchospasm.

The ongoing inflammation causes airways to be extra-sensitive or “twitchy”.

#### **Slide 5: Asthma Symptoms**

Remember – asthma is different for everyone!

Symptoms, or combinations of symptoms, you may notice include:

- coughing
- wheezing
- chest tightness
- shortness of breath
- excessive fatigue or
- nausea/vomiting.

The most frequent symptom in EIA, and maybe the only one you’ll notice in some students, is coughing.

These symptoms may range from mild to severe. For some students, symptoms may go away in 20 or 30 minutes after they stop exercising and takes their prescribed medicine. For others, the symptoms may last for several hours. Students with more severe symptoms may require further treatment of their asthma attack in an emergency department.

#### **Slide 6: Diagnosing Asthma**

A healthcare professional makes an asthma diagnosis after taking a complete history, performing a physical exam, and having the student perform breathing tests known as spirometry, or additional tests as needed, while at rest and perhaps, after exercising using a treadmill or cycle.

Once diagnosed with asthma, a healthcare professional should teach the student the proper techniques for using asthma medicine and tools (such as an inhaler with or without a spacer and a peak flow meter). The student should receive a written asthma action plan from his or her healthcare provider to be shared with the appropriate school personnel.



We don't fully understand why some students have asthma, but we do know that there is a genetic component. The good news is that asthma is controllable. Every student's asthma symptoms and triggers are different...and there can be changes from season to season.

### **Slide 7: Asthma Triggers: Allergens**

Triggers are things that cause symptoms of asthma, which can lead to an asthma attack or episode. These include allergens which are things you are allergic to such as:

- animal dander from feathered or furry pets,
- cockroach droppings,
- dust mites,
- molds, and
- tree, grass and weed pollens

### **Slide 8: Asthma Triggers: Irritants**

Other triggers include irritants, such as environmental tobacco smoke, air pollution, chemicals and strong smells.

Environmental tobacco smoke or second hand smoke – which increase the number of asthma episodes and the severity of symptoms in an estimated 200,000 to 1 million children annually.

Air pollution – a potent mix of ground level ozone, sulfur dioxide, particulate matter and nitrogen oxide

Chemicals or strong smells, including paint/cleaning solutions, chalk dust, lawn and turf treatments, gasoline fumes

### **Slide 9: Additional Triggers**

Additional Triggers:

- weather changes
- upper respiratory infections, such as the common cold or flu
- cold air
- strong emotions, like crying and even laughter, and
- what concerns you most – exercise

A newly-mowed field, freshly-sprayed turf or a just-refinished gym floor may mean you need to temporarily change the location of practice or physical education class.

### **Slide 10: Exercise Induced Asthma (EIA)**

Even though exercise is important for everyone, it can cause asthma symptoms in the vast majority of individuals with asthma and...12% of those who are undiagnosed with asthma will experience symptoms. It's important for every school staff member to recognize symptoms that occur with exercise **{exercise-induced asthma (EIA)}** and know how to help.

EIA, also sometimes called exercise-induced bronchospasm (EIB), is a narrowing of the airways that occurs 5-20 minutes after activity.

### **Slide 11: What happens in EIA**

Exercise-induced asthma (EIA) occurs when students are breathing faster to meet their bodies' oxygen needs during intense exercise. Since most people tend to breathe through their mouth when exercising, air doesn't have a chance to be warmed and humidified by the nose before it goes into the lungs. This results in cool, dry and unfiltered air reaching the lungs. This cool blast of air can cause the already "twitchy" airways to narrow, called bronchospasm. This causes the student to struggle to move air in and out of lungs. The airways react by producing more mucus and become inflamed and swollen, which further reduces the flow of air.

The result is a student, who is coughing, wheezing, and can't breathe or participate in activities.

Exercise that exposes the student to cold air, such as ice hockey, is more likely to trigger asthma symptoms than exercise involving warm and humid air, such as swimming.

### **Slide 12: Duration of EIA Symptoms**

Symptoms may begin during exercise and will usually worsen 5-20 minutes *after* your student stops the activity.

Some individuals may experience a "late-phase reaction" 4-12 hours after exercising. These symptoms are usually less severe, but may last up to 24 hours.

Students who are experiencing minor symptoms or are recovering from a recent asthma attack or episode/ illness may require exercise/activity modification. You may need to be creative to include these students, but participating at *any* level is better than being left out.

### **Slide 13: Recommended Activities**

Sports or activities that call for short bursts of activity are least likely to cause asthma symptoms. When there are built-in rest periods, like those available in baseball, football, wrestling, volleyball, softball, tennis, downhill skiing (using a scarf to warm the air), golf, and some track and field events, the student can regain breathing control. Swimming is a frequently preferred activity because of the emphasis on building the upper-body and the airways benefit from the super moistened air... unless the student is chlorine-sensitive.

Activities that call for prolonged activity like basketball, soccer, rugby, long-distance running and field hockey are more likely to cause asthma attacks.

#### **Slide 14: Students with Asthma can Excel**

Students with asthma can excel – in fact, according to a study, at least one in six U.S. athletes at the 1996 Olympic Games had a history of asthma. Although 4-7% of the general population is reported to have asthma, the number of Olympic athletes who reported asthma was considerably higher. Out of 699 athletes, 117 (16.7%) were found to have a history of asthma, or to have used asthma medications, or both.

At the 1998 Winter Olympics in Nagano, Japan, 22.4% of the 196 U.S. athletes had asthma.

As you can see – individuals with asthma can succeed. Your students should have great expectations – they can control their asthma so they can sleep through the night, have minimal side-effects from medications, experience few, if any, attacks and... play and exercise. You can help your students lead healthier lives! Are you ready?

#### **Slide 15: Set?**

Are you set to learn about asthma medicines and monitoring?

There is no cure for asthma, but it can be managed by a team that includes the parents/guardians, the student, healthcare professionals, additional school staff, and . . . You.

You also have the power to encourage students to accept inhaler use with no comments or teasing by their peers. Effective communication, medicines, and monitoring are the key components to success.

Every student with asthma should provide you with a copy of AAFA's Student Asthma Action Card or your school's approved asthma action plan which has been completed with a healthcare professional. A copy of this action plan, which contains potentially life-saving information, should be on file at school *and* with you on a clipboard at all times.

#### **Slide 16: Long-Term Control Medicines**

Your students may need one of two types of medicines. The first are long-term control medicines.

These are also called "controllers." They are powerful in preventing the inflammation associated with asthma, but will *not* help during an episode. Corticosteroids are just one of several groups of medicines under the "long-term control" category and they are the source of much misunderstanding. These steroids are NOT the same as the anabolic steroids that are abused by some athletes.

Long-term control medicines must be taken for several days before positive effects are noted. They must be taken consistently and as prescribed, for maximum benefit. Unfortunately, sometimes students stop taking them because they do not see an immediate benefit from their use.

#### **Slide 17: Quick-Relief Medicines**

The second type of asthma medicine is quick-relief medicines. They are sometimes called rescue medicines and provide immediate relief which lasts for several hours. They relax the muscles around the airways and decrease the narrowing of the airways, which contributes to the wheezing, coughing and tightness of an asthma episode. They are also important as a pre-treatment or prevention before a physical activity or exercise begins.

Overuse and incorrect use are major concerns for students who may use their quick-relievers more than prescribed. Some may need to take long-term control medicines to avoid over using their quick-relief medicines. Students should have convenient access to their asthma medicines before, during and after school.

Make sure all medicines have the students' names on them. Don't allow them to be shared.

### **Slide 18: Quick-Relief Inhaler Use**

Have the student:

- use his/her quick-relief inhaler 10-15 minutes before warm-up as a pre-treatment
- take 1 puff, hold breath 10 seconds, then exhale
- wait 1-2 minutes and repeat as noted in their asthma action plan.

Some students have been taught by their healthcare professionals to place the inhaler in their mouths while others hold the inhaler opening two-fingers width away from the mouth.

Still other students may use a spacer or holding chamber which traps the puff of medication until the student inhales it. This ensures that they inhale all of the medicine into their lungs.

### **Slide 19: Helpful Medicine Tips**

An inhaler is only helpful if it contains medicine and also if it's available immediately!

It's easy with some inhalers – they have built-in dose counters. But, for the inhalers that do not have dose counters, there are two ways to track how much medicine is left. The student can bring his inhaler in a plastic bag with a card/pencil and mark each time the inhaler is used (i.e., 1111 and at five put a strike mark across). Or, there are self-adhesive "Scratch-a-Dose™" labels that can be applied to the inhaler so the student can scratch off a number each time it is used. Check the Resource List for information on this product.

### **Slide 20: Peak Flow Meters**

Some students may have **peak flow meters**, portable hand-held devices that measure how well air moves out of the airways. These handy devices help monitor the students' asthma. They also are valuable tools to help you when you are trying to communicate the severity of an episode to a parent, guardian or healthcare professional.

A student's "personal best" and the numbers that indicate when he or she is getting in the "yellow - caution zone" or "red - danger zones" should be noted in the asthma action plan. In general, a peak flow reading less than 80% of the student's personal best is a call for action. Refer to the student's asthma action plan for specific instructions on what to do if the student is in the yellow or red zone.

### **Slide 21: GO with Asthma!**

GO with Asthma!

You're now ready and set with basic asthma information. Here are tips on how to help your students go!

Your first priority should be to create a system that allows you to quickly check with students that they have taken their pre-treatment medicine.

Also, make sure students are warming up and cooling down properly, drinking plenty of fluids before, during, and after exercise. When appropriate, check the pollen and air quality levels, and take precautions during cold weather.

### **Slide 22: Warm-up and Cool-down Periods**

Did you know warm-up and cool-down periods, (sometimes called warm-down periods) do more than protect muscles?

They are also helpful in preventing asthma attacks. The warm-up and cool-down periods should help prevent the air in the lungs from quickly changing from cool to warm, or warm back down to cool.

It's important for all students, but particularly those with asthma to drink plenty of fluids before, during, and after exercise.

### **Slide 23: Air Quality and Pollen Counts**

Certain students may have more difficulty being active on days when there is poor air quality (high levels of pollution) or pollen counts are high. To check pollen in your area, visit [www.aafa.org](http://www.aafa.org) and fill in your zip code, then click on "pollen."

To check the air quality visit AirNow, a division of the Environmental Protection Agency at [www.airnow.gov](http://www.airnow.gov). If possible, avoid outdoor activities on high pollen or poor air quality days,

### **Slide 24: Cold Weather**

When it is cold outside, ask students with asthma to:

- warm up longer
- wear masks or scarves to warm the air they are breathing in

In extreme cold weather, consider scheduling alternate indoor activities.

### **Slide 25: Asthma Attacks**

A student may still have an asthma attack even though he/she pre-treated and warmed-up. Remember that asthma attacks are never the same for any two students.

If your student has one or more of the following symptoms you need to stay calm and follow his/her emergency plan immediately:

coughing or wheezing

- difficulty breathing, shortness of breath
- difficulty in talking and walking due to shortness of breath
- chest tightness or pain

### **Slide 26: In an Emergency**

In an emergency you should:

- ask the student to stop the activity and sit down (not recline)
- follow the emergency plan on that student's asthma action plan
- ask someone to contact the parents/guardians and call for help while you stay with the child

Call 911 if:

- If there is no improvement after 15 minutes
- Lips and/or fingernails are blue.

After the emergency has passed:

- Follow up with parents or guardians to prevent future episodes,
- Discuss with your team if any changes need to take place for the future.

### **Slide 27: Remember to...**

Emergencies are rare and with a positive, supportive attitude and the spirit of teamwork, your students with asthma will enjoy the physical and social benefits of being active.

Remember to:

- keep a copy of each student's asthma action plan with you at all times
- encourage students to label their meds, spacers and peak flow meters
- remind students to pre-treat and warm-up

- discourage sharing of inhalers
- make sure inhalers are not empty

Most important of all is to ensure that the student's rescue inhaler is available at all times.

**Slide 28: Remember to...**

Also, remember to:

- help peers to be supportive and
- maintain open communication with parents/guardians, staff and healthcare professionals.

**Slide 29: Communication is the Key**

Communication is the key to helping each student with asthma excel, especially in the situations below which were noted in a survey of PE instructors. Their primary concerns were students who:

left their inhalers at home

- did not have/follow their asthma action plan
- claimed to be experiencing asthma episodes, but did not seem to have visible signs.

Instructors and coaches cannot risk ignoring any student who reports breathing difficulties even if the student is perceived to be "faking it" to avoid an exercise/activity.

Each one of these issues *must* be addressed by communicating with the students' parents/guardians. We've made it easier for you by including a time-saving form in the Resource Section of this program.

**Slide 30: You are now ready and set to help your students GO with Asthma!**

Jerome "The Bus" Bettis, says, "I look at my asthma like the team I'm going to play against on Sunday. I train and I prepare to win. Today I'm proof that if you manage your asthma right, it doesn't have to get in the way of your game."

Asthma should not interfere with your students' games... or lives either.

**You are now ready and set to help your students go with asthma!**