



## Basic Facts About Asthma

### What Asthma Is

Asthma is a disease that affects your lungs. It is the most common long-term disease of children. It causes repeated episodes of wheezing, breathlessness, chest tightness, and nighttime or early morning coughing. It is with you all the time, but you may have asthma attacks only when something bothers your lungs.

We know that family history contributes to susceptibility, but in most cases we don't know what causes asthma to develop, and we don't know how to cure asthma. You can control your asthma by knowing the warning signs of an attack, avoiding things that trigger an attack, and following the advice of your doctor. When you control your asthma, you won't have symptoms like wheezing or coughing, you'll sleep better, you won't miss work or school, you'll be able to take part in all physical activities, and you won't have to visit the hospital.

### Effects of Asthma

In 2001, 20.3 million Americans had asthma, and 12 million had had an asthma attack in the previous year. If a person has a parent with asthma, he or she is three to six times more likely to develop asthma than is a person who does not have a parent with asthma.

### How Asthma Is Diagnosed

Asthma can be difficult to diagnose, especially in children under 5 years old. Regular physical exams that include checks of lung function and for allergies can help make the right diagnosis.

A health-care provider trying to diagnose asthma will ask you questions about coughing, especially coughing at night, and whether breathing problems are worse after physical activity or during a particular time of year. Providers also ask about other symptoms, such as chest tightness, wheezing, and colds that last more than 10 days.

Also, a provider will ask about your family history of asthma, allergy and other breathing problems, and your home environment. He or she also will ask about lost school or work days and limits on your activity.

Testing of lung function, called spirometry, is another way to diagnose asthma. A spirometer is a piece of equipment that measures the largest amount of air you can exhale after taking a very deep breath. Airflow can be measured before and after you use an asthma medication.

### What An Asthma Attack Is

Airways are the paths that carry air to the lungs. As the air moves through the lungs, the airways become smaller, like branches of a tree. During an attack, the sides of the airways in your lungs become inflamed and swollen. Muscles around the airways tighten, and less air passes in and out of the lungs. Excess mucus forms in the airways, clogging them even more. The attack, also called an episode, can include coughing, chest tightness, wheezing, and trouble breathing.

### Causes Of An Asthma Attack

Environmental exposures, such as house dust mites and environmental tobacco smoke, are important triggers of an attack. Some of these triggers are listed in the box below.

### How Asthma Is Treated

You can control your asthma and avoid an attack by taking your medicine as prescribed and avoiding the triggers that can cause an attack. It's just as important that you remove the triggers in your environment that you know make your asthma worse.

Medicine for asthma is different for each person. It can be inhaled or taken as a pill and comes in two types—quick-relief and long-term control. Quick-relief medicines control the symptoms of an asthma attack. If you are using your quick-relief medicines more and more you should visit your health-care provider to change your asthma management plan. Long-term control medicines make you have fewer and milder attacks, but they don't help you if you're having an attack.

Asthma medicine can have side effects. Most are mild and go away on their own. Ask your health-care provider about the side effects of your medicines.

## Asthma FAQ

(continued from previous page)

The important thing to remember is that you can control your asthma. With your health-care provider's help, make your own asthma management plan so you know what to do based on your own symptoms. Decide who should have a copy of your plan and where he or she should keep it. You can learn more about asthma management plans from the American Academy of Family Physicians (<http://familydoctor.org/x2272.xml>). And remember to take your long-term control medicine even when you don't have symptoms.

### Important Asthma Triggers

#### *Environmental Tobacco Smoke, Also Known As Secondhand Smoke*

Parents, friends, and relatives of children with asthma should try to stop smoking. Until they can successfully quit, they should smoke only outdoors, not in the home or in the family car. They should not allow others to smoke in the home, and should make sure the child's school is smoke-free.

#### *Dust Mites*

Mattress covers and pillow case covers provide a barrier between house dust mites and the person with asthma. Down-filled pillows, quilts, or comforters should not be used and stuffed animals and clutter should be removed from bedrooms.

#### *Outdoor Air Pollution*

Pollution caused by industrial emissions and automobile exhaust can cause an asthma episode. In large cities that have air pollution problems the number of emergency department visits for asthma episodes goes up when the air quality is very poor.

#### *Cockroach Allergen*

You may find cockroaches any place where food is eaten and crumbs are left behind. Decreasing exposure to cockroaches in the home can help reduce asthma attacks. Remove as many water and food sources as you can because cockroaches need food and water to survive. Vacuum or sweep these areas at least every 2-3 days. You can also use roach traps or gels to decrease the number of cockroaches in your home.

#### *Pets*

Furry pets may trigger an attack. The simplest solution to this situation is to find another home for the pet. However, some pet owners may be too attached to their pets or unable to locate a safe new home for the animal. Any animal causing an allergic reaction should not be allowed in the bedroom. Pets should be kept outside as much as possible and bathed weekly. People with asthma are not allergic to their pet's fur, so trimming the pet's fur will not help your asthma. Frequent vacuuming will reduce the presence of the allergen. If the room has a hard surface floor, it should be damp mopped weekly.

#### *Mold*

When mold is inhaled, it can cause asthma attacks. Eliminating mold throughout the home can help control asthma attacks. Keep humidity levels between 35% and 50%. In hot, humid climates, this may require the use of air conditioning and/or dehumidifiers. Fixing water leaks and cleaning up any mold in the home can also help.

#### *Other Triggers*

Strenuous physical exercise; adverse weather conditions like freezing temperatures, high humidity, and thunderstorms; and some foods and food additives and drugs can trigger asthma episodes. Strong emotional states also can lead to hyperventilation and an asthma episode. People with asthma should learn if these things trigger their episodes and avoid them when possible.

*For more information, please contact:*

CDC/National Center for Environmental Health  
Division of Environmental Hazards and Health Effects  
Phone: 1-888-232-6789; E-mail: [EHHEinq@cdc.gov](mailto:EHHEinq@cdc.gov)  
Web site: <http://www.cdc.gov/asthma>

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**DEPARTMENT OF HEALTH AND HUMAN SERVICES**  
**CENTERS FOR DISEASE CONTROL AND PREVENTION**  
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## ASTHMA FACTS

**Asthma is a rapidly growing public health problem. According to the Centers for Disease Control and Prevention:**

- More than 22 million people, including 6.8 million children, have asthma.
  - \* Asthma prevalence is higher among families with lower incomes.
- 12 million people report having an asthma attack in the past year.
- Asthma accounts for nearly 15 million outpatient clinic visits, and nearly 2 million emergency department visits each year.
- African Americans continue to have higher rates of asthma emergency department visits, hospitalizations, and deaths than do Caucasians:
  - \* The rate of emergency department visits is 350% higher.
  - \* The hospitalization rate is 240% higher.
  - \* The asthma death rate is 200% higher.
- Approximately 2 million Hispanics in the U.S. have asthma and Puerto Ricans are disproportionately impacted:
  - \* The rate of asthma among Puerto Ricans is 125% higher than non-Hispanic white people and 80% higher than non-Hispanic black people.
  - \* The prevalence of asthma attacks is highest among Puerto Ricans.

### **Asthma in Children:**

- Asthma is a serious chronic illness among children and youth.
- Asthma is the third-ranking cause of hospitalization among children under 15.
- Asthma in children is the cause of seven million physician visits and nearly 200,000 hospitalizations.
- An average of one out of every 13 school-aged child has asthma.
- 13 million school days are missed each year due to asthma.

### **The Cost of Asthma:**

- Annual expenditures for health and lost productivity due to asthma are estimated at \$19.7 billion, according to the National Heart Lung and Blood Institute.



# ASTHMA FACTS

## **Asthma and the Environment**

Research by EPA and others has shown that:

- Dust mites, molds, cockroaches, pet dander, and secondhand smoke trigger asthma attacks.
- Exposure to secondhand smoke can cause asthma in pre-school aged children.
- Exposure to dust mites can cause asthma.
- Ozone and particle pollution can cause asthma attacks.
  - \* When ozone levels are high, more people with asthma have attacks that require a doctor's attention.
  - \* Ozone makes people more sensitive to asthma triggers such as pet dander, pollen, dust mites, and mold.

# Breathing Difficulties Related to Physical Activity for Students With Asthma: Exercise-Induced Asthma

Information for Physical Educators, Coaches and Trainers

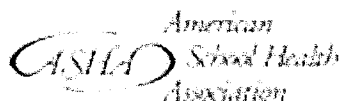
## First Aid for Exercise-Induced Asthma

If, during physical activity, you notice that a student is having difficulty breathing, coughing frequently, or wheezing (noisy when breathing out), it may be asthma:

- **STOP** the student's activity and encourage the student to sit and rest.
- **Call 911** immediately if student requests or is in severe distress—struggling to breathe, lips blue, unable to walk or talk.
- Follow the designated **asthma management plan** (individual student plan, if available, or school protocol).
- Follow the school protocol to **notify the school nurse** (or other designated staff) if medication is not available or if symptoms are not resolved within 5 to 10 minutes after using the inhaler.
- **Never** let a child with breathing problems leave the gym or field **alone**.
- If symptoms resolve, permit students to **resume activity** when they are ready, according to their asthma management plan.
- Follow the school protocol to **inform parents** of the event and document actions taken.



Allergy & Asthma Network  
Mothers of Asthmatics



This guidance sheet was developed as a partnership activity facilitated by the NAEPP, coordinated by the NHLBI of the NIH/DHHS

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## **Ways To Help Students with Asthma Participate in Physical Activity**

### **Identify Students with Asthma in Your Class or on Your Team**

- Ask your school nurse or use student health information to identify those students who have a diagnosis of asthma or a history of asthma symptoms with physical activity.
- Ask the school nurse for a copy of each student's asthma management plan. Keep the copies easily available for all on-site and off-site activities.
- Discuss with students (and parents, if appropriate), the individual student's triggers, signs and symptoms that relate to physical activity.
- Take appropriate steps to inform a student's parents/guardians if the student frequently experiences asthma symptoms with physical activity. The student's asthma management plan may need to be re-evaluated by the student's physician because most students with asthma should be able to participate fully in physical activities, most of the time.
- Help students and the school nurse make sure that the students' prescribed asthma medicines are available for use, according to their asthma management plans, before physical activity and as needed for acute symptoms,

### **Encourage Students to Prepare for Physical Exercise**

- Students who have been prescribed pre-exercise treatment (usually an inhaled quick relief bronchodilator) should take their medicine 5 to 10 minutes prior to exercise
- Encourage a period of warm up activity before exertion (e.g., walking, flexibility exercises, or other low intensity activities).
- Check the student's asthma management plan for information about his or her triggers, and help the student avoid them when possible. Each student with asthma is sensitive to different factors in the environment, called triggers. Common triggers include dust, pollen, mold, air pollution, and smoke. Cold, dry air can also trigger asthma; wearing a scarf or cold air mask will help because it warms and humidifies the air before it reaches the airways.

### **Consider Modified Exercise as Needed**

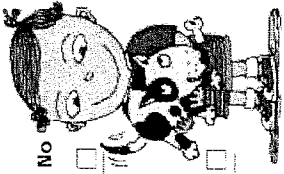
- If a student has obvious wheeze, breathing difficulty, or measures a low peak flow rate prior to exercise, have the student treat his/her symptoms according to the asthma management plan. The treatment is usually with prescribed inhaled quick-relief bronchodilator. Physical activity may then be either resumed, modified or halted, depending on the student's response to treatment.
- When a student is having mild symptoms or when triggers are present, consider modifying the intensity, location, or duration of physical activity. Very intense, continuous activity is more likely to cause asthma symptoms than intermittent or very light or non aerobic exercise (e.g., walking, some field events, or weight training). There is no perfect physical activity for people with exercise-induced asthma. All sports are tolerated well when a student's asthma is under control.
- When environmental conditions are bad (e.g., ozone alerts, high pollen counts, freshly cut or sprayed fields) students with asthma may need to avoid being physically active outdoors.

# Kids' Asthma Check

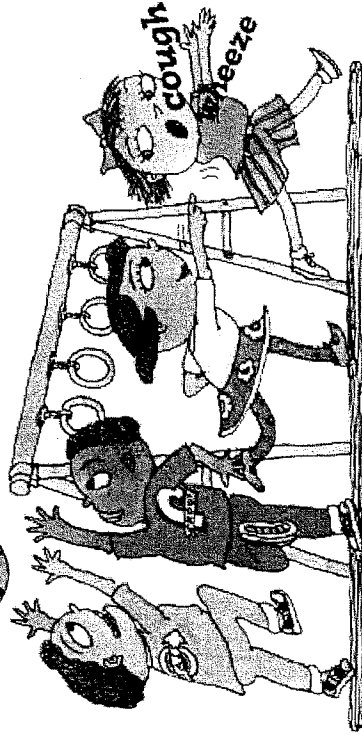
## Here's What To Do

Sometimes asthma stops kids from having fun. It can make it hard to do well in school or to sleep without waking up and coughing. If you've been told you have asthma or if you have trouble breathing when you run or play hard, take this Asthma Check from the American College of Allergy, Asthma & Immunology (ACAAI). Just answer yes or no to these questions.

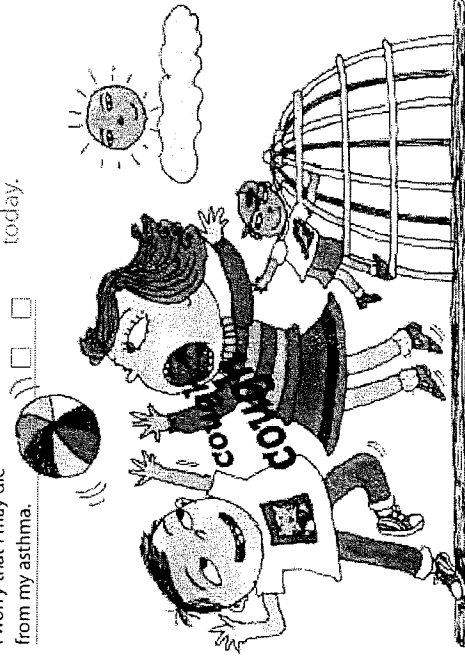
- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| 1. When I walk or play hard with friends, I have trouble breathing or I cough.     | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. When I walk up hills or stairs, I have trouble breathing or I cough.            | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. I don't like to run or play sports because I have trouble breathing or I cough. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Sometimes I wake up at night with coughing or trouble breathing.                | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Sometimes I have trouble taking a deep breath.                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Sometimes I make wheezing sounds in my chest.                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Sometimes my chest feels tight or hurts.  | <input type="checkbox"/> | <input type="checkbox"/> |



- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| 8. Sometimes I cough a lot.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Being outdoors or around dust or pets makes my breathing worse.                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. It's hard to breathe in cold weather.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. It's hard to breathe when people smoke or there are strong odors.                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Colds make me cough or wheeze.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. I went to the doctor's office or emergency room for asthma or trouble breathing this year. | <input type="checkbox"/> | <input type="checkbox"/> |



- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| 14. I stayed in the hospital overnight for asthma or trouble breathing this year. | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. I've been told that I have asthma.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Sometimes my asthma medicine makes me feel bad.                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. I only take medicine when I don't feel well.                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. I can't do some things because of my asthma.                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. I get scared because of my asthma.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. I worry that I may die from my asthma.  | <input type="checkbox"/> | <input type="checkbox"/> |



Kids: Show your answers to your parents.

Parents: Talk to your child's physician about "yes" answers today.