

## Asthma and Asthma Action Plan

Asthma is a disease of the respiratory system. It causes swelling and narrowing of the airways inside the lungs. When this happens there can be coughing, a whistling sound when you breathe (*wheezing*), chest tightness, and difficulty breathing. The narrowing comes from swelling and muscle spasms of the air tubes. Asthma is a common illness of childhood. Knowing more about your child's illness can help you handle it better. It cannot be cured, but medicines can help control it.

### CAUSES

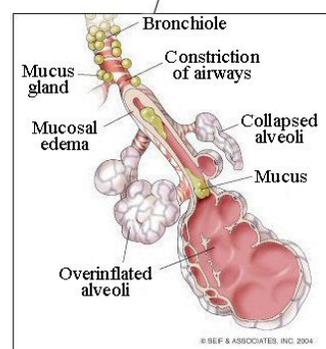
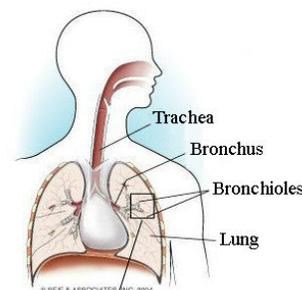
Asthma is likely caused by inherited factors and certain environmental exposures. Asthma is often triggered by allergies, viral lung infections, or irritants in the air. Allergic reactions can cause your child to wheeze immediately when exposed to allergens or many hours later. Asthma triggers are different for each child. It is important to pay attention and know what triggers your child's asthma.

Common triggers for asthma include:

- Animal dander from the skin, hair, or feathers of animals.
- Dust mites contained in house dust.
- Cockroaches.
- Pollen from trees or grass.
- Mold.
- Cigarette or tobacco smoke.
- Air pollutants such as dust, household cleaners, hair sprays, aerosol sprays, paint fumes, strong chemicals, or strong odors.
- Cold air or weather changes. Cold air may cause inflammation. Winds increase molds and pollens in the air.
- Strong emotions such as crying or laughing hard.
- Stress.
- Certain medicines such as aspirin or beta-blockers.
- Sulfites in such foods and drinks as dried fruits and wine.
- Infections or inflammatory conditions such as the flu, a cold, or an inflammation of the nasal membranes (*rhinitis*).
- Gastroesophageal reflux disease (GERD). GERD is a condition where stomach acid backs up into your throat (*esophagus*).
- Exercise or strenuous activity.

### SYMPTOMS

Wheezing and excessive nighttime or early morning coughing are common signs of asthma. Frequent or severe coughing with a simple cold is often a sign of asthma. Chest tightness and shortness of breath are other symptoms. Exercise limitation may also be a symptom of asthma. These can lead to irritability in a younger child. Asthma often starts at an early age. The early symptoms of asthma may go unnoticed for long periods of time.



## DIAGNOSIS

The diagnosis of asthma is made by review of your child's medical history, a physical exam, and possibly from other tests. Lung function studies may help with the diagnosis.

## TREATMENT

Asthma cannot be cured. However, for the majority of children, asthma can be controlled with treatment. Besides avoidance of triggers of your child's asthma, medicines are often required. There are 2 classes of medicine used for asthma treatment: controller medicines (reduce inflammation and symptoms) and reliever or rescue medicines (relieves asthma symptoms during acute attacks). Many children require daily medicines to control their asthma. The most effective long-term controller medicines for asthma are inhaled corticosteroids (blocks inflammation). Other long-term control medicines include:

- Leukotriene receptor antagonists (blocks a pathway of inflammation).
- Long-acting beta2-agonists (relaxes the muscles of the airways for at least 12 hours) with an inhaled corticosteroid.
- Cromolyn sodium or nedocromil (alters certain inflammatory cells' ability to release chemicals that cause inflammation).
- Immunomodulators (alters the immune system to prevent asthma symptoms).
- Theophylline (relaxes muscles in the airways).

All children also require a short-acting beta2-agonist (medicine that quickly relaxes the muscles around the airways) to relieve asthma symptoms during an acute attack.

All people providing care to your child should understand what to do during an acute attack. Inhaled medicines are effective when used properly. Read the instructions on how to use your child's medicines correctly and speak to your child's caregiver if you have questions. Follow up with your child's caregiver on a regular basis to make sure your child's asthma is well controlled. If your child's asthma is not well controlled, if your child has been hospitalized for asthma, or if multiple medicines or medium to high doses of inhaled corticosteroids are needed to control your child's asthma, request a referral to an asthma specialist.

## HOME CARE INSTRUCTIONS

- Give medicines as directed by your child's caregiver.
- Avoid things that make your child's asthma worse. Depending on your child's asthma triggers, some control measures you can take include:
  - Changing your heating and air conditioning filter at least once a month.
  - Placing a filter or cheesecloth over your heating and air conditioning vents.
  - Limiting your use of fireplaces and wood stoves.
  - Smoking outside and away from the child, if you must smoke. Change your clothes after smoking. **Do not** smoke in a car when your child is a passenger.
  - Getting rid of pests (such as roaches and mice) and their droppings.
  - Throwing away plants if you see mold on them.
  - Cleaning your floors and dusting every week. Use unscented cleaning products. Vacuum when the child is not home. Use a vacuum cleaner with a HEPA filter if possible.
  - Replacing carpet with wood, tile, or vinyl flooring. Carpet can trap dander and dust.
  - Using allergy-proof pillows, mattress covers, and box spring covers.
  - Washing bedsheets and blankets every week in hot water and drying them in a dryer.
  - Using a blanket that is made of polyester or cotton with a tight nap.
  - Limiting stuffed animals to 1 or 2 and washing them monthly with hot water and drying them in a dryer.
  - Cleaning bathrooms and kitchens with bleach and repainting with mold-resistant paint. Keep

the child out of the room while cleaning.

◦ Washing hands frequently.

- Talk to your child's caregiver about an action plan for managing your child's asthma attacks. This includes the use of a peak flow meter which measures how well the lungs are working and medicines that can help stop the attack. Understand and use the action plan to help minimize or stop the attack without needing to seek medical care.
- Always have a plan prepared for seeking medical care. This should include providing the action plan to all people providing care to your child, contacting your child's caregiver, and calling your local emergency services 911 in U.S..

### **SEEK MEDICAL CARE IF:**

- Your child has wheezing, shortness of breath, or a cough that is not responding to usual medicines.
- There is thickening of your child's sputum.
- Your child's sputum changes from clear or white to yellow, green, gray, or bloody.
- There are problems related to the medicines your child is receiving (such as a rash, itching, swelling, or trouble breathing).
- Your child is requiring a reliever medicine more than 2–3 times per week.
- Your child's peak flow is still at 50–79% of personal best after following your child's action plan for 1 hour.

### **SEEK IMMEDIATE MEDICAL CARE IF:**

- Your child is short of breath even at rest.
- Your child is short of breath when doing very little physical activity.
- Your child has difficulty eating, drinking, or talking due to asthma symptoms.
- Your child develops chest pain or a fast heartbeat.
- There is a bluish color to your child's lips or fingernails.
- Your child is light-headed, dizzy, or faint.
- Your child who is younger than 3 months has a fever.
- Your child who is older than 3 months has a fever and persistent symptoms.
- Your child who is older than 3 months has a fever and symptoms suddenly get worse.
- Your child seems to be getting worse and is unresponsive to treatment during an asthma attack.
- Your child's peak flow is less than 50% of personal best.

### **ASTHMA ACTION PLAN, PEDIATRIC**

**Patient Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

#### **Follow-up appointment with physician:**

- Physician Name: \_\_\_\_\_
- Telephone: \_\_\_\_\_
- Follow-up recommendation: \_\_\_\_\_

### **WHEN WELL: ASTHMA IS UNDER CONTROL**

**Symptoms:** Almost none; no cough or wheezing, sleeps through the night, breathing is good, can work or play without coughing or wheezing.

#### **If using a peak flow meter:**

The optimal peak flow is: \_\_\_\_\_ to \_\_\_\_\_ (should be 80–100% of personal best)

#### **Use these medicines EVERY DAY:**

- Controller and Dose: \_\_\_\_\_
- Controller and Dose: \_\_\_\_\_
- Before exercise, use reliever medicine: \_\_\_\_\_



**Call your child's physician if your child is using a reliever medicine more than 2–3 times per week.**

**WHEN NOT WELL: ASTHMA IS GETTING WORSE**

**Symptoms:** Waking from sleep, worsening at the first sign of a cold, cough, mild wheeze, tight chest, coughing at night, symptoms that interfere with exercise, exposure to triggers.



**If using a peak flow meter:**

The peak flow is: \_\_\_\_\_ to \_\_\_\_\_ (50–79% of personal best)

**Add the following medicine to those used daily:**

- Reliever medicine and Dose: \_\_\_\_\_

**Call your child's physician if your child is using a reliever medicine more than 2–3 times per week.**

**IF SYMPTOMS GET WORSE: ASTHMA IS SEVERE – GET HELP NOW!**

**Symptoms:** Breathing is hard and fast, nose opens wide, ribs show, blue lips, trouble walking and talking, reliever medicine (bronchodilator) not helping in 15–20 minutes, neck muscles used to breathe, if you or your child are frightened.



If using a peak flow meter:

The peak flow is: less than \_\_\_\_\_ (50% of personal best)

- **Call your local emergency services 911 in U.S. without delay.**
- Reliever/rescue medicine:
  - Start a nebulizer treatment or give puffs from a metered dose inhaler with a spacer.
  - Repeat this every 5-10 minutes until help arrives.

**Take your child's medicines and devices to your child's follow-up visit.**

**SCHOOL PERMISSION SLIP**

**Date:** \_\_\_\_\_

Student may use rescue medicine (bronchodilator) at school.

**Parent Signature:** \_\_\_\_\_ **Physician Signature:**

\_\_\_\_\_

Document Released: 10/02/2007 Document Revised: 05/04/2015 Document Reviewed: 04/17/2012

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