

What is asthma?

Asthma is a breathing problem that causes:

- wheezing (a high-pitched whistling or musical sound while breathing out)
- recurrent attacks of wheezing, coughing, chest tightness, and difficulty in breathing
- sneezing and a runny nose (often but not always)

Usually there is no fever with asthma unless it has been triggered by an infection (usually viral). It is important that your child's health care provider confirm the diagnosis of asthma.

Asthma is a chronic (ongoing) disease that requires close follow-up by a health care provider who coordinates your child's treatment program.

What causes asthma?

Asthma is an inherited type of “twitchy” lung. The airways go into spasm and become narrow when allergic or irritating substances enter them. Viral respiratory infections (colds) trigger most attacks, especially in younger children. If the asthma is due to pollens, it usually flares up only during a particular season. Asthma often occurs in children who have other allergic reactions such as eczema or hay fever. While emotional stress can occasionally trigger an attack, emotional problems are not the cause of asthma. Some common triggers are listed under the section titled “How can asthma attacks be prevented?”

How long does it last?

Asthma can be a long-lasting disease, but more than half of young people who have asthma outgrow it during adolescence.

Asthma attacks may be frightening, but they are treatable. When medicines are taken as directed, the symptoms completely clear up and there are no permanent lung changes.

What type of medicine does my child need?

Your child may need more than one type of medicine. One medicine is for helping stop an attack once it has started (rescue medicine) and another is for preventing attacks (preventative medicine). Ask your doctor when each medicine should be used.

• Rescue medicines

Rescue medicines quickly open your child's airways and are used during an asthma attack. These medicines are called bronchodilators

Examples of a **rescue** medicine are Albuterol / Proair/ Ventolin/ Xopenex.

After asthma attacks are over, your rescue medicine is stopped or used less often. Check with your doctor about when and how much to reduce this medicine.

• Preventative Medicine

Many children with asthma need preventative medicine to prevent ongoing symptoms and long term damage to the lungs. Children with the following symptoms usually need to take preventative medicines every day to allow them to participate in normal activities:

- 2 or more attacks of wheezing or coughing per week
- asthma flare-ups lasting several days or frequent Albuterol use
- the need for emergency room care despite proper use of inhaler
- asthma triggered by pollens (use daily asthma medicines during the entire pollen season)

Preventative medicines are anti-inflammatories. They help keep the airways in your child's lungs from becoming inflamed and irritated and help prevent asthma attacks.

Examples of a **preventative** medicine are Flovent / Pulmicort / Qvar

What is a metered-dose inhaler?

A metered-dose inhaler is a canister of medicine that releases a mist into your child's mouth and down into the airways of the lungs. The inhaler can be used by itself, but usually works better if it is used with a spacer (chamber) device. The spacer traps the asthma medicine and gives your child time to breathe it in. Children less than 6 years old can't coordinate all the steps required for using an inhaler. They must use a spacer because it provides for better delivery of the medicine to the lungs. Older children and adults should also consider using a spacer because it provides for better delivery of the medicine to the lungs.

What are nebulizer treatments?

Children younger than 1 year old can't use inhalers with a spacer. They need nebulized medicine treatment, using a machine. Your child need to take nebulizer medicine as prescribed by your physician.

When should my child take the asthma medicine?

If your child is taking a daily **preventive** medicine, take it exactly as prescribed by your health care provider.

If your child is prescribed a **rescue** medicine, then he or she should take it in the following situations:

- **Asthma attack:** If your child is having trouble breathing, he should take his asthma rescue medicine. If you have any doubt about whether or not your child is wheezing, have your child start taking his asthma medicine. The later medicines are begun, the longer it takes to stop the wheezing. Once treatment with the medicine is begun, keep giving your child the rescue medicine according to the dose prescribed by your health care provider. (Your child may have to take the rescue medicine for several days.)
- **Colds:** Many children wheeze soon after they get coughs and colds. If this is true for your child, start the asthma medicine at the first sign of any coughing or wheezing. The best "cough medicine" for a person with asthma medicine, not a cough syrup. Always keep the medicine handy and take it with you on trips. If your supply runs low, get a refill.
- **Exercise-induced asthma (EIA):** Most people with asthma also get 15 to 30 minute attacks of coughing and wheezing when they exercise strenuously. Running, especially in cold air, is the main trigger. This problem should not interfere with participation in most sports nor require a gym excuse. Your child can avoid the symptoms by using an inhaler (rescue medicine) 10-30 minutes before exercise. Teenagers with asthma usually have no problems with swimming or sports not requiring rapid breathing.

How can I take care of my child?

- **Fluids**
Fluids keep the normal lung mucus from becoming sticky. Encourage your child to drink one glass of fluid every 2 hours during waking hours. Clear fluids such as water are best. Sipping warm fluids may improve your child's wheezing.
- **Hay fever**
For hay fever or allergy symptoms, it's OK to give antihistamines such as Benadryl. Poor control of hay fever can make asthma attacks worse. Recent research has shown that while antihistamines can dry the airway, they don't make asthma worse.
- **Going to school**
Asthma is not contagious. Your child should go to school during mild asthma attacks but avoid gym on these days. Arrange to have the asthma medicines available at school. If your child uses an inhaler, he

should be permitted to keep it with him so he can use it whenever he needs it.

If your child can't go to school because of asthma, he should see a physician that same day of additional treatment.

- **Common mistakes**

The most common mistake is delaying the start of prescribed asthma medicines or not replacing them when they run out. Nonprescription inhalers and medicines are not helpful.

The most serious error is continuing to expose your child to an avoidable cause of asthma. Never keep a **cat** if your child is allergic to it. **Never allow smoking in your home**; tobacco smoke can linger in the air for up to a week. Don't panic during asthma attacks. Fear can make tight breathing worse, so try to remain calm and reassuring to your child.

Finally, don't let asthma restrict your child's activities, sports, or social life.

How can asthma attacks be prevented?

Try to discover and avoid the substances that trigger your child's asthma attacks. **Second-hand tobacco** smoke is a common trigger. If someone in your household smokes, your child will have more asthma attacks, take more medication, and need more emergency room visits. **Try to keep pets outside or at least out of your child's room.** Indoor pets need a weekly bath to remove allergic particles. Learn how to dust proof your child's bedroom. Change the filters on your hot-air heating system or air conditioner monthly. For allergies to molds or carpet dust mites, try to keep the house humidity less than 50%. Consider using a humidifier.

If your child wheezes after any contact with grass, pollen, weeds, or animals, there may be pollen or animal dander remaining in the air and clothing that keeps the wheezing going. Your child should shower, wash his or her hair, and put on clean clothes.

When should I call my child's health care provider?

Call IMMEDIATELY if:

- The wheezing is severe
- The breathing is difficult
- The wheezing is not improved after the second dose of asthma medicines
- Your child needs to use the inhaler more than every 4 hours

Call within 24 hours if:

- The wheezing is not completely gone in 5 days
- You have other questions or concerns

Metered-Dose Inhaler Used with an Aerochamber

A metered-dose inhaler (MDI) is a canister of medication that releases a medicated mist. The Aerochamber is a spacer device that can be used with a metered-dose inhaler. The Aerochamber helps make sure the MDI is at the correct distance from your child's mouth and at the best angle. It helps your child inhale more medicine into the lungs. The Aerochamber can come with or without a mask.

To attach the MDI to the Aerochamber:

1. Remove the caps from the Aerochamber and metered-dose inhaler
2. Shake the metered-dose inhaler vigorously
3. Insert the mouthpiece of the inhaler into the rubber-sealed end of the Aerochamber

To use the MDI with the Aerochamber (without a mask):

1. Have your child breathe all the air out of his lungs. Then have him put the Aerochamber into his mouth between his teeth. Make sure your child has a tight seal around the mouthpiece with his lips.
2. Press the MDI down once to release a spray of medicine. The medicine will be trapped in the Aerochamber.
3. Have your child breathe slowly and deeply
4. Ask your child to hold his breath for 5 to 10 seconds. (This gives the medicine time to reach the airways.)
5. Take the Aerochamber out of the mouth. Have your child breathe out slowly.
6. Ask your child to take a few normal breaths and then repeat steps 1 through 5 for another inhalation (puff) if required. Take the number of puffs prescribed by your doctor.

To use the MDI with the Aerochamber (with a mask):

1. Put the Aerochamber mask to the child's face so that both the nose and mouth are covered. The mask must be pressed to the child's face to assure that the medication gets to the child's lungs.
2. Press the MDI down once to release a spray of medicine. The medicine will be trapped in the spacer.
3. While the mask is on, ask your child to breathe in slowly and deeply for at least 3 breaths or to a 10 second count in a younger child unable to coordinate breaths.
4. Take off the mask and have the child breathe normally
5. Repeat steps 1 through 3 if additional puffs are required. Your child should take only the number of puffs prescribed by the doctor.

Cleaning the MDI and Aerochamber

Wash the Aerochamber and the plastic case for the metered-dose inhaler once a week with soapy tap water. Rinse and dry them thoroughly.

With time, the flap valve may harden and start to curl, making the chamber inefficient. You will then need to get a new Aerochamber.