

# ASTHMA BASICS: A Guide for Patients and Parents

## What is asthma?

Asthma is a chronic lung disease. When you breathe, air goes into and out of your lungs through small tubes (airways). When you have asthma, there is swelling in your airways, which causes them to narrow and make more mucus. There is also tightening (constriction) of the muscles surrounding your airways. This combination of airway inflammation, increased mucus, and airway constriction causes your airways to narrow leading to symptoms such as: coughing (especially at night), wheezing, chest pain or tightness, and feeling short of breath or having difficulty breathing. Asthma is distinguished by reversibility of airway obstruction.

## Is all asthma the same?

Asthma is classified by severity into four groups.

1. Intermittent asthma-symptoms less than 2x/wk daytime, less than 2x/mo. at night
2. Mild persistent asthma-symptoms more than 2x/wk daytime, 3-4x/mo. at night
3. Moderate persistent asthma-daily symptoms, more than 1x/wk at night
4. Severe persistent asthma-symptoms throughout the day and frequently at night

*Coughing more than two nights per month or daytime symptoms more than two times per week is considered mild persistent asthma and should be treated with preventative medicine taken every day.* In children, asthma severity can change from season to season making it essential to be evaluated regularly by your healthcare provider. This allows medications to be adjusted so that you only receive the medicine you need in order to control your symptoms.

## Is asthma serious?

With proper care your child's asthma can be well controlled. Children should be able to play and participate in sports without coughing or feeling short of breath. However, if asthma is not well controlled it can be life-threatening. Even someone with mild asthma can develop a severe, life-threatening asthma attack. Seek medical care immediately for worsening asthma symptoms that are not being relieved by your usual medications.

## What causes asthma symptoms?

Triggers for asthma vary from person to person. In children, viral infections such as a cold or the flu are the most common triggers of asthma symptoms. Other common triggers are allergens and irritant exposure such as cigarette smoke, mold, dust, pollen, pet dander, and cockroach presence. Cold air and exercise can also cause asthma symptoms.

## What can I do to prevent or reduce asthma flare-ups?

There are some simple life-style changes, which can reduce asthma symptoms and flare-ups:

- Frequent hand washing will help you avoid colds and the flu
- Get a yearly flu vaccine
- Keep humidity less than 50 % by not using humidifiers in the winter and by using de-humidifiers in the summer
- Wash all bedding weekly in hot water to kill dust mites (if dust mites are a trigger)
- Vacuum dust prone areas
- Wipe all hard surfaces weekly with a damp cloth to remove dust
- Do not smoke or be exposed to second-hand smoke
- Warm up before exercise and work up gradually to strenuous activity

## Can asthma be cured?

It is important to remember that even when you feel well and are not having symptoms, you still have asthma. There are three important steps to keeping your asthma well controlled:

1. Know what your asthma triggers are and how to avoid them
2. Use your long-term controller medicines as prescribed
3. Recognize early signs and symptoms of an asthma flare-up and treat it quickly as instructed by your health care provider

## What medicines are used to treat asthma?

Asthma medications fall into two general categories:

1. **Controller or preventative medicines** – These are medicines, which are taken once or twice every day to control and prevent asthma symptoms. They reduce or prevent airway inflammation and mucus production. They should never be used for immediate symptom relief during an acute attack. Because they are used to prevent symptoms, they should be taken every day, even when there are not any asthma symptoms. Regular follow-up with your healthcare provider will allow them to reassess their use. They include:
  - Inhaled steroids such as: Alvesco, Asmanex, Flovent, Pulmicort, and QVAR
  - Leukotriene antagonist such as: Singulair
  - Combination Medications which combine an inhaled corticosteroid with a long acting bronchodilator (opens up airways) such as: Advair, Symbicort, and Dulera
  - These medications should be adjusted during asthma flare-ups but never used for immediate symptom relief

2. **Reliever or rescue medications** are used every 4-6 hours to treat symptoms such as coughing, wheezing, and shortness of breath. They relax the muscle constriction around the airways and temporarily open up the airways. These medicines all work in similar ways and include:
  - Albuterol sulfate (ProAir ®, Proventil ® and Ventolin ®)
  - Levalbuterol HCL (Xopenex ®)
  - Pirbuterol acetate (Maxair ®)

Medications come in many different forms. Some are liquids that you use with a nebulizer machine. There are also inhalers and dry powder inhalation medicines. Use of a spacer with an inhaler improves delivery of the medication to the lungs. Many factors influence your physician's choice of medication including: patient preference and ability to use the device properly, time and financial constraints and insurance coverage to name a few.

## What is an Asthma Action Plan?

An Asthma Action Plan is a written plan which your doctor may give you to help you know when it is time to increase or change your medications. It will show a green zone that is your daily medication schedule when you are feeling well without any symptoms. A yellow zone will show you what medications to add or increase when an asthma flare-up starts. A red zone will guide you during a severe asthma attack with instructions for medications and seeking medical care

For more information about asthma please see our Web Site [www.StamfordPediatrics.com](http://www.StamfordPediatrics.com)

Proper Use and Care of Your Medication Delivery Devices  
Videos demonstrating the use of the different types of spacers and inhalation devices can be found on our web site.  
[www.StamfordPediatrics.com](http://www.StamfordPediatrics.com)

## INSTRUCTIONS FOR USAGE OF SPACERS

### Aerochamber/Optichamber with mask

1. Make sure a proper-sized mask is used, it should fit snuggly over the child's mouth and nose without covering their eyes.
2. Shake the inhaler well.
3. Insert the inhaler into the spacer (opposite end of the mask).
4. Press the inhaler ONCE.
5. Place the mask firmly over the child's nose and mouth.
6. Allow the child to breathe normally for 6 to 10 breaths or 30 seconds (observe the small valve move with each respiration).
7. If more puffs are necessary repeat steps 2 through 6 (if desired combine steps two and three – i.e. shake the inhaler with the spacer while both are connected).

### Aerochamber/Optichamber with mouthpiece

1. Shake the inhaler well.
2. Insert the inhaler into the spacer (opposite end of the mouth piece).
3. Exhale (blow out) deeply into the spacer.
4. Press the inhaler ONCE (while the spacer is in the mouth).
5. Take a deep breath in.
6. Hold breath as long as possible.
7. If more puffs are necessary repeat steps 1 through 6 (if desired combine steps one and two – i.e. shake the inhaler with the spacer while both are connected).

## INSTRUCTIONS FOR CLEANSING OF SPACERS AND NEBULIZERS

### Cleaning of Aerochamber/Optichamber

DO NOT ATTEMPT TO DETACH THE MASK FROM THE SPACER IF YOU HAVE AN AEROCHAMBER WITH MASK. Before cleaning, remove the inhaler of medicine, this should not get wet!

Once a week remove the plastic end of the spacer where the inhaler is inserted. Soak that piece plus the rest of the spacer into a solution of soap and warm water for 1/2 hour. Then remove the pieces from the solution, rinse with water and allow to air-dry overnight.

### Cleaning of Nebulizers

Once a week, remove the nebulizer cup from the tubing and compressor. DO NOT SOAK THE TUBING OR COMPRESSOR, they must stay dry! Soak the nebulizer cup and the mouthpiece only for 1/2 hour in a solution of one part white vinegar and two parts water. Rinse these parts under warm running water. Air-dry overnight.

Stamford Pediatric Associates has adapted this handout through the generosity of Hossein Sadeghi, MD, Director, Division of Pediatric Pulmonology, Stamford Hospital

