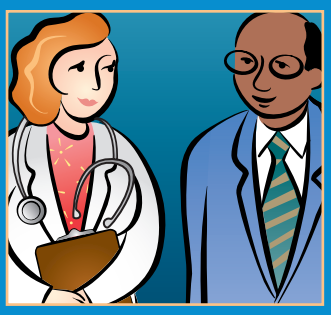
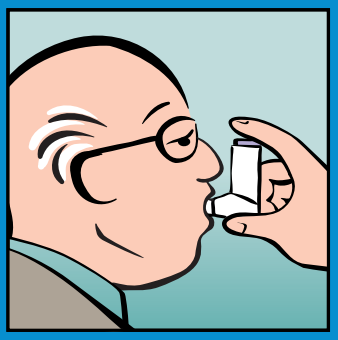
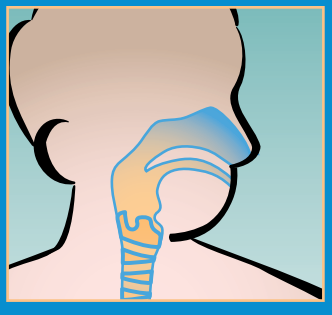
All About

ASTHMA





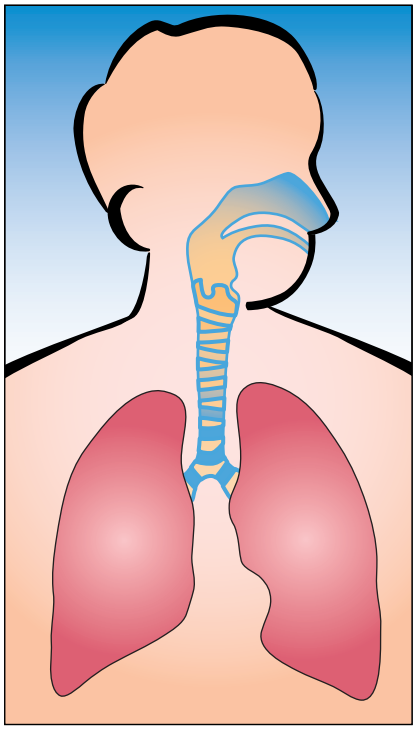


ALL ABOUT ASTHMA

Learning about asthma is the first step to getting control of your asthma symptoms. This booklet includes information that may help. There are five main sections:

- **What Is Asthma?**: Defines asthma, asthma flare-ups, asthma triggers
- **Living With Asthma**: Explains asthma medicines, symptom monitoring, the Asthma Action Plan
- **Taking Charge of Your Asthma**: Describes working with your doctor, goals of asthma care, action steps
- **Device Training**: Provides instructions for using different asthma treatment devices
- **Asthma Resources**: Provides lists of additional resources for more information about asthma

Read this information carefully. Then discuss any questions you have with your doctor.



WHAT IS ASTHMA?

Asthma is a **chronic inflammatory disease** of the airways in the lungs. Asthma makes it hard for you to breathe. There is no cure for asthma, but it CAN be managed and you CAN enjoy an active life with better asthma control.

There are four main symptoms of asthma. The symptoms can be mild or severe and can change from day to day. You may have all, some, or just one of these symptoms:

- Wheezing – a whistling noise when you breathe
- Increased coughing and mucus
- Chest tightness – a feeling that someone is sitting on your chest
- Shortness of breath

Some things may make your asthma symptoms worse.

Examples include exercise, respiratory infections, smoke, strong emotions (such as crying), and changes in the weather.

Often symptoms are worse at night and they may even wake you up.

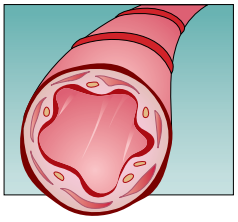
Do you know how asthma affects your lungs?

When Your Breathing Is Normal

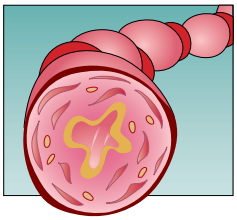
When you breathe in air, you bring oxygen into your body. Air comes in through your nose and mouth and goes through your airways into your lungs. The air ends up in small sacs, called alveoli, in your lungs.

In the alveoli, the oxygen is exchanged with carbon dioxide, which is used air after the body takes out the oxygen. The oxygen moves from the alveoli into your blood and the carbon dioxide moves from your blood into the alveoli. When you breathe air out, you rid your body of the carbon dioxide.

Airways in the Lungs



Normal airway



Airway during an asthma flare-up

During an Asthma Flare-up

With asthma, two main things happen in the airways of your lungs:

- **Inflammation** — The airways become swollen and fill with mucus. This makes the insides of the airway tubes smaller, so that less air can get in and out of your lungs.
- **Constriction** — The muscles around the airways tighten, making the airways narrower. This means less air can get through.

When these things happen, it can be very hard to breathe. Your body does not get the oxygen it needs and cannot get rid of carbon dioxide.

A severe asthma flare-up can be life-threatening. Keep your rescue (quick-relief) medicines handy and know when to get help.

If you use rescue (quick-relief) medicines more than twice a week, your asthma may not be well managed. Talk to your doctor!

What causes an asthma flare-up?

We do not know exactly why some people have asthma and others don't. But we do know what can cause or trigger an asthma flare-up. Each person's asthma triggers are different. You can make a big difference in your quality of life by finding out what triggers *your* asthma and by learning ways to stay away from them. This is an important part of a plan to manage your asthma.

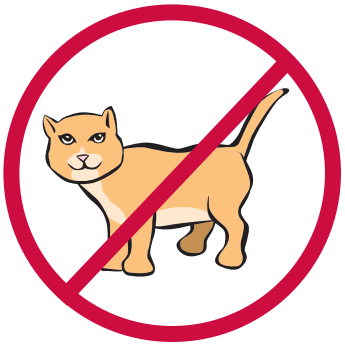
What Are Your Asthma Triggers?

Although everyone has different asthma triggers, there are certain triggers that are very common. Look at this list of common triggers and check the ones that affect you. Then follow the suggestions after each trigger that you checked.

Common triggers

☐ Pets: Do you have pets inside the house (cats, dogs, birds)? Do you have asthma symptoms when you are in rooms that have had pets in them?

- Keep your pets outside.
- If your pets do come inside, close your bedroom door to keep them out of your bedroom.
- Keep pets off the furniture.
- Have your dog/cat bathed weekly.
- Certain breeds of dogs and cats are better pets for people with asthma. Consider a short-haired dog, or one that is clipped often.



☐ Dust or dust mites: Do symptoms appear when you are in a room with carpet that has just been vacuumed?

- Remove animal products (such as feather pillows) from your home.
- Put your mattress and pillows in special allergen-proof covers (available in many stores).
- Wash your sheets and blankets every week in hot water (over 130°F).
- Do not sleep or lie down on upholstered furniture without an allergen-proof cover.
- Clean furniture and uncarpeted floors often with a damp cloth or mop. Do not use a broom.
- Vacuum carpets often. Use a vacuum with a HEPA filter.
- Wear a mask when you or someone else is vacuuming.
- Wash curtains and dust woodwork often.
- Wash or replace air conditioner or heater filters each month.
- If possible, remove carpeting, especially in the bedroom. Replace it with tile, linoleum, or hardwood flooring, or use washable rugs instead.

☐ Mold and mildew: Do you have water or damp spots in your home, especially near your bedroom?
- Fix all leaks.
- Clean showers, tubs, and sinks often with bleach to kill mildew. Wear a mask or have someone else use the cleaning products.
- Do not use a humidifier to put water into the air, unless your doctor tells you to do so.
- To prevent mold, keep the bathroom dry by using a fan or dehumidifier.

☐ Cockroaches: Have you seen cockroaches in your home during the last month? Their droppings are very common asthma triggers.
- Never leave food out and do not eat in the bedroom.
- Use poison bait, boric acid, or traps to kill cockroaches. Avoid chemical sprays.
- Keep garbage in closed containers. Take it out often.

☐ Smoke: Do you smoke, or do you spend time with people who are smoking?
- If you smoke, stop.
- Do not let anyone smoke inside your home or car.
- Stay away from people who are smoking.
- If you have a wood-burning stove or fireplace, make sure it is well ventilated. Do not release smoke into the house.
- Sit in the nonsmoking section in restaurants. Request nonsmoking hotel rooms.

☐ Pollens: Do you have asthma symptoms only at certain times of the year?
- Use the air conditioner instead of opening windows, especially in your bedroom.
- Do not hang clothes or sheets outside to dry.
- Wash or replace air conditioner or heater filters each month.
- Stay inside with the windows closed during your allergy season.
- If you must spend time outside during your allergy season, avoid going outside during the midday and afternoon.

☐ Air irritants: Do strong smells (sprays, perfumes, cleaning products) make your asthma symptoms worse?
- Avoid using sprays, such as perfumes, hair spray, and scented deodorant.
- Use the exhaust fan when cooking.
- Avoid strongly scented products, such as paint and cleaning solutions. Wear a mask if you cannot avoid being around these products.

☐ Weather: Breathing cold, dry air may irritate your lungs and trigger an asthma flare-up. Hot summer weather can result in air pollution that causes asthma flare-ups. Rainy weather can increase molds.
- Wear a scarf over your nose and mouth when outside on cold or windy days.
- Listen to weather reports and try to avoid going outside when air pollution is high.

- [ ] Stress: Do you have an asthma flare-up when you feel stressed? You can help by knowing what causes your stress and taking steps to avoid it.
  - Learn relaxation skills, such as muscle relaxation, yoga, visualization, and deep breathing.
  - Learn stress management skills.
  - Join an asthma support group.

Workplace triggers

Asthma symptoms at work may be reduced if the cause is detected early and you can avoid being around those triggers. The first step is to try to discover what workplace triggers you may have.

Ask yourself the questions below to try to recognize your workplace triggers.

- [ ] Are you around strong smells, fumes, gases, or grain dusts? Examples:
  - Chemicals (sulfur, ammonia, or isocyanates)
  - Animal products (feathers, animal enzymes, or dander)
  - Plant products (wheat flour or red cedar)
  - Pesticides
- [ ] Are you around excessive cold or heat, or humidity?
- [ ] Are you around tobacco or wood smoke?
- [ ] Are there cockroaches where you work?
- [ ] Is there a lot of dust, carpeted floors, or upholstered furniture?
- [ ] If you work outside, is your asthma always worse at certain times of the year, such as spring or fall?

Sometimes the only solution is changing jobs or the area in which you work. Of course, this may not always be possible.

- Ask your doctor to help you put together a plan to deal with the triggers you've identified at work.
- Talk to your employer about your plan and how it can make you a better, more productive employee.

Other triggers

Other factors that may affect your asthma include:

- [ ] Respiratory infections, such as viral infections and sinusitis. Check with your doctor to see if you need to get a flu shot or other vaccine.
- [ ] Heartburn (gastroesophageal reflux). Do not drink or eat within 3 hours of going to bed. Consider raising the head of your bed 6 to 8 inches with blocks. Check with your doctor if your heartburn continues to be a problem.
- [ ] Allergies. Managing your allergies can help reduce asthma flare-ups.

LIVING WITH ASTHMA

Together, you and your doctor should decide how to manage your asthma care.

The goal of a good asthma management plan is to help you control your asthma symptoms. The National Institutes of Health (NIH) guidelines for asthma care recommend that adults and children older than 5 years of age with asthma should have a management plan that helps them reach the following goals:

Have:

- Minimal or no chronic symptoms day or night
- Minimal or no exacerbations
- No limitations on activities; no school or work missed
- Maintain (near) normal pulmonary function
- Minimal use of short-acting inhaled $beta_2$-agonist
- Minimal or no adverse effects from medications

Your asthma management plan might include asthma medicines, symptom monitoring with a peak flow meter, and an Asthma Action Plan.

Your asthma medicine

Medicines are one of the most important ways that you can control your asthma symptoms. Asthma medicines can be divided into two main types:

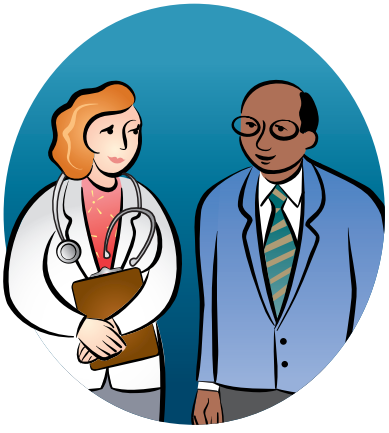
1) Controller medicines
2) Rescue (quick-relief) medicines

Controller Medicines

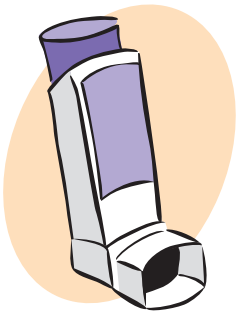
Controller medicines are taken every day as directed by your doctor, even if you feel fine. Some controller medicines help reduce the swelling inside the airways (inflammation); others help relax the muscles that squeeze the airways (constriction). By reducing inflammation and constriction, you may help control your symptoms, such as wheezing, cough, chest tightness, and shortness of breath. There are several types of controller medicines, including:

- Inhaled corticosteroids (ICS)
- Long-acting bronchodilators
- Methylxanthines (theophylline)
- Leukotriene modifiers
- Cromolyn sodium/nedocromil sodium

Controller medicines prevent symptoms but do not act quickly. They should not be used to treat asthma symptoms that come on suddenly.



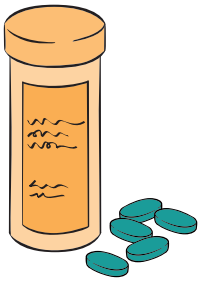
Inhaled corticosteroids (ICS)



- ICS go straight to the airways to help reduce swelling and irritation so you can breathe more easily.
- They are recommended by experts at the National Institutes of Health (NIH) as the preferred treatment of persistent asthma. They help reduce the number and severity of asthma flare-ups.
- ICS should be taken regularly as directed by your doctor, even when you do not have symptoms. When you first begin taking an ICS, it may take several weeks before you get the full effect. Do not stop taking your inhaled corticosteroid without first talking to your doctor, even if you're feeling better.
- Because ICS are inhaled directly into the lungs, there is less risk of the side effects that may occur with oral corticosteroids.
- Inhaled corticosteroids can be taken along with a long-acting bronchodilator to help better control symptoms.
- You should rinse your mouth with water and discard the rinse after using these medicines.
- ICS are not the same as anabolic steroids, which are abused by some athletes to build muscles.

Long-acting bronchodilators

- Long-acting bronchodilators are used to relax the muscles around the airways, keeping them open so you can breathe more easily.
- They are often used along with inhaled corticosteroids to provide long-term control of asthma symptoms.
- Long-acting bronchodilators work for up to 12 hours and can help reduce the need for rescue (quick-relief) medicines.
- They should be taken regularly, as directed by your doctor, even when you do not have symptoms.



Methylxanthines (theophylline)

- Methylxanthines help to open the airways by relaxing the airway muscles.
- They work for up to 6 hours or longer.
- Periodic blood testing may be needed if you take these medicines.

Leukotriene modifiers

- Leukotriene modifiers work against leukotrienes, one of the chemicals produced during an asthma flare-up.
- Leukotrienes play a role in airway constriction and swelling.

Cromolyn sodium/nedocromil sodium

- Cromolyn sodium and nedocromil sodium are mild anti-inflammatory medicines that work to decrease the swelling in the airways.
- They are usually inhaled and are generally given to children.
- Cromolyn sodium may be used to prevent asthma symptoms before exercise or unavoidable contact with asthma triggers.

Rescue (Quick-Relief) Medicines

Rescue (quick-relief) medicines are taken at the FIRST sign of worsening asthma symptoms. They are used during an asthma flare-up or before exercise, as directed by your doctor. They provide short-term relief of asthma symptoms.

The most common type of rescue (quick-relief) medicine is a short-acting bronchodilator.

REMEMBER:

It is important that you take your medicines *exactly* like the doctor tells you.

All medicines have side effects. Talk to your doctor if you think you are having side effects from these or any other medicines.

Short-acting bronchodilators

- Short-acting bronchodilators are usually inhaled and work quickly to relax the muscles around the airways, making it easier to breathe.
- Inhaled short-acting bronchodilators begin working within minutes, with maximum relief occurring 1 to 2 hours after inhaling the medicine.
- Albuterol is a common short-acting bronchodilator.

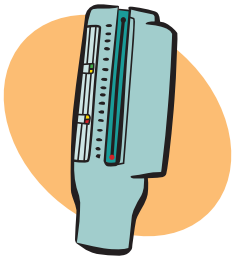
If you use your rescue (quick-relief) medicine more than two times per week, talk to your doctor about better control of your asthma symptoms. He or she may need to change your treatment plan.

Oral Corticosteroids

Oral corticosteroids can be used as either a rescue (quick-relief) medicine or a controller medicine. They are usually given as a pill but may be given in an IV at the hospital or doctor's office.

- Oral corticosteroids are used to treat moderate to severe asthma flare-ups.
- They are usually used for short periods during a flare-up to treat swelling and irritation and get you to feel better fast.
- Oral steroids are sometimes used as a controller medicine in people with severe asthma who need extra control despite taking multiple inhaled medicines.
- They help lower the chance of a flare-up happening again so soon.

Keep your prescriptions filled.
If you notice that your medicine is running low, be sure to get it refilled in plenty of time. It is important that you do not miss a dose of controller medicine. It is also important that you always have your rescue (quick-relief) medicine on hand in case you have an asthma flare-up.



Monitoring asthma symptoms with a peak flow meter

A peak flow meter is a tool that measures how well you are able to blow air out of your lungs. You use it to find out how open your airways are and when an asthma flare-up may be starting. Peak flow numbers drop when the airways begin to narrow. Peak flow numbers may drop even before you have any symptoms of an asthma flare-up.

A peak flow meter can help you monitor your asthma symptoms. Your peak flow number helps tell you if your asthma is under control, if it is getting worse, or if you need emergency care. By keeping a record of your peak flow numbers and using an Asthma Action Plan, you and your doctor can make decisions about how best to manage your asthma.

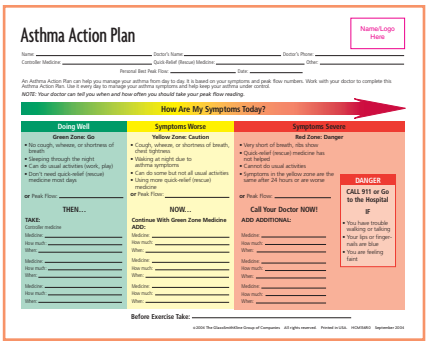
The more you know about your lungs, the better you will be able to take action to manage your asthma and lead a healthier life! Talk to your doctor about whether you should use a peak flow meter. (For more information on how to use a peak flow meter, see page 15.)

It is important to measure your peak flow number when you wake up, before you take medicine, or as directed by your doctor, even on days when you have no symptoms.

Your Asthma Action Plan

Everyone with asthma should have an Asthma Action Plan. The plan tells you what medicine to take and when to take it based on your asthma symptoms. A plan can be very helpful, especially during an asthma flare-up.

The Asthma Action Plan is made up of three color-coded "zones." The zones are based on your asthma symptoms and your peak flow numbers. The plan also has a place for your doctor to add your asthma medicines. The doctor will write down which asthma medicine you should take for each zone.


Asthma Action Plan

Name/Logo Here

How Are My Symptoms Today?

Doing Well — Green Zone: Go

Symptoms Worse — Yellow Zone: Caution

Symptoms Severe — Red Zone: Danger

DANGER

CALL 911 or Go to the Hospital

IF

The zones are like a traffic light:

- ✔ **Green** means **Go**. Your breathing is good and you are not having any asthma symptoms. Your peak flow number is greater than 80% of your personal best.
- ✔ **Yellow** means **Caution**. You are having some asthma symptoms. Your peak flow number is 50% to 80% of your personal best.
- ✔ **Red** means **Stop** or **Danger**. Your asthma symptoms are bad. It is hard to breathe. Get help now! Your peak flow number is less than 50% of your personal best.

Work with your doctor to complete your Asthma Action Plan. Your doctor will help you identify your personal best peak flow number. Make sure you know when to call your doctor and what to do in an emergency.

Use your Asthma Action Plan to teach others about your asthma. You may want to give a copy to friends, relatives, teachers, coaches, neighbors, and baby-sitters so that they can help you if you have an asthma flare-up.

Make it a part of your daily routine!

Everybody's asthma is different, so it is important to:

- Take your asthma medicine as directed by your doctor.
- Follow your doctor's instructions for peak flow monitoring and treating your asthma symptoms.
- Use your Asthma Action Plan.
- Keep track of your peak flow numbers and your asthma symptoms, and talk to your doctor about them at your next visit.

TAKING CHARGE OF YOUR ASTHMA

Asthma affects your life, but it doesn't have to control it. By managing your asthma, you can take charge of your life.

Work with your doctor

You and your doctor are part of a team working together to better manage your asthma. It is important for you to take an active role in your asthma care.

Start by:

- Scheduling an "asthma only" office visit at least twice a year.
- Giving clear information to your doctor about your signs and symptoms.
- Listening closely and carefully to the instructions your doctor gives you.
- Asking questions about what you don't understand.

At Your Doctor Visit

Before each visit, take a few minutes to think about your asthma and any problems you may be having. Tell your doctor:

- What medicine you are taking and how often you use your rescue (quick-relief) medicine.
- What asthma symptoms you are having.
- Whether you sleep through the night or wake up due to asthma symptoms.
- How your asthma affects your daily activities.
- Your peak flow readings if you use a peak flow meter.

Set goals for asthma care

The National Institutes of Health (NIH) guidelines for asthma care recommend that adults and children older than 5 years of age with asthma should have a management plan that helps them reach the following goals:

Have:

- Minimal or no chronic symptoms day or night
- Minimal or no exacerbations
- No limitations on activities; no school or work missed
- Maintain (near) normal pulmonary function
- Minimal use of short-acting inhaled beta$_2$-agonist
- Minimal or no adverse effects from medications

Take action

You play a very important part in controlling your asthma symptoms. The actions you take can directly affect your quality of life.

- ✔ Learn what asthma is and what causes it.
- ✔ Learn about your personal triggers for asthma.
- ✔ Take steps to avoid these triggers and prevent asthma flare-ups.
- ✔ Keep a diary of your activities and symptoms at home and away from home.
- ✔ Share the diary with your doctor.
- ✔ Work with your doctor to put together an Asthma Action Plan to manage your asthma.
- ✔ Follow your Asthma Action Plan.
- ✔ Take your asthma medicines as directed and learn to use devices correctly.
- ✔ Share facts about asthma, your triggers, and your Asthma Action Plan with your family. Once they understand, they can support and help you with your disease.
- ✔ Let your doctor know how you are doing.

REMEMBER:

Asthma does NOT go away when your symptoms go away. It cannot be cured but it CAN be managed and you CAN enjoy an active life with better asthma control.

Other things to consider…

Emotions—You may feel depressed, angry, and fearful. Learning about asthma and the steps you can take to manage it may help you feel better.

Physical well-being—Work with your doctor to plan a program for staying healthy.

Financial well-being—Asthma can be expensive. Follow your self-care plan to be better able to stay in control of your asthma symptoms and reduce your expenses.

Family relationships and friendships—Your family and friends can play a big part in helping you manage your asthma. Ask them to support you.

DEVICE TRAINING

Do you use your inhaler correctly?

Many asthma medicines are taken with an inhaler. It is very important that you use the inhaler correctly. If you use it the wrong way, you will not get the right amount of medicine into your lungs. Also, if you use more than one inhaler, ask your doctor in which order you should take them. Be sure to talk to your doctor if you have any questions.

Steps for Using a Metered-Dose Inhaler

Step 1

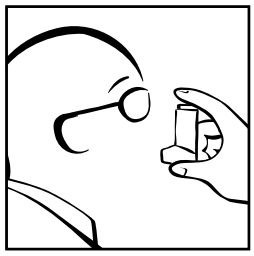
- Remove the cap while holding the inhaler upright.
- Then shake the inhaler gently but well.

Step 2

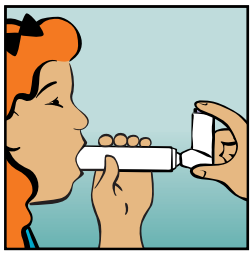
- Stand up or sit up straight and tilt your chin up.
- Breathe out completely through your mouth.
- Then place the mouthpiece of the inhaler in your mouth. Make sure your tongue doesn't block the opening of the mouthpiece.

Step 3

- Push down once on the top of the inhaler, while starting to take in a slow, deep breath.
- Hold your breath and count to ten.
- Remove the mouthpiece from your mouth and breathe out slowly.
- Most medicines require 2 puffs. If your medicine does, wait 1 minute and repeat the steps above.
- Replace the cap when finished.
- If your inhaler is a corticosteroid medicine, rinse your mouth and throat with water after use.



Metered-dose inhaler in the mouth



Metered-dose inhaler with a spacer

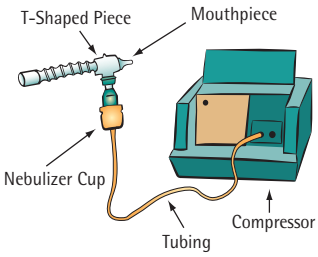
NOTES

- Some people find a spacer helpful. Ask your doctor or pharmacist for help if you are having trouble using your inhaler.
- Some inhalers are rescue (quick-relief) medicines that you use only when you have asthma symptoms. Others are controller medicines that you take every day, as directed by your doctor, to prevent symptoms. Make sure you know which is which.

Cleaning your inhaler
Remove the medicine canister from the plastic actuator. Clean the plastic actuator and cap at least once a day. Rinse them with warm, running water and dry completely. Then re-attach the medicine canister with a gentle twist.

Know when to replace your inhaler
Every inhaler has a certain number of doses. Write down the day when you first start using your inhaler, and keep track of how many puffs have been used and how many are left.

Using a nebulizer



Some people use a nebulizer to take their asthma medicine. A nebulizer makes a mist from your asthma medicine. You breathe the mist into the airways of your lungs. The picture on the left shows you the parts of a nebulizer.

Setting Up the Nebulizer

- If your medicine comes pre-mixed, open it and place it into the cup.
- If your medicine is **NOT** pre-mixed, measure the correct amount of salt solution using a clean dropper and put it into the cup. Draw up the correct amount of medicine using a clean eyedropper or syringe. Put it into the cup with the salt solution.
- Fasten the mouthpiece OR mask to the cup and attach it to the tubing of the compressor.
- Follow the manufacturer's instructions on how to use the air compressor.

Using the Nebulizer

- Put the mouthpiece in your mouth and tighten your lips around it OR place the mask on your face.
- Turn on the machine.
- Take slow, deep breaths in through your mouth and hold each breath 1 to 2 seconds before breathing out.
- Continue breathing until the mist is gone. This usually takes about 10 minutes.

Cleaning the Nebulizer

Clean your nebulizer after each use to prevent infection and to keep it from clogging.

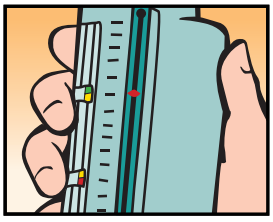
- Wash all parts (**except the tubing and compressor**) with dish soap and warm water.
- Rinse under warm running water.
- Shake and then air dry on a clean cloth or paper towel.
- Set up the nebulizer again and run the machine for 10 to 20 seconds to dry the inside.
- Store the nebulizer in a plastic bag.

Twice a week, wash the nebulizer parts (not tubing or compressor), eyedropper or syringe with mild soap and warm water. Rinse for 30 seconds. Soak for 30 minutes in one part distilled white vinegar and two parts water. Rinse the parts under warm running water for 1 minute. Air dry. Put all the parts back together and run the machine for 10 to 20 seconds to dry the inside of the nebulizer. Disconnect the tubing and store the nebulizer in a plastic bag.

Do you use a peak flow meter?

Taking peak flow meter measurements is easy and doesn't take much time. The important thing to remember is to take your peak flow reading when you wake up and before you take your medicine, or as directed by your doctor.

Steps for Using a Peak Flow Meter



Step 1

- Slide the marker to 0.
- Stand or sit up straight.
- Hold the meter in one hand. Do not cover the numbers with your fingers.

Step 2

- Take a big breath with your mouth open.
- Quickly close your lips around the mouthpiece. Do not put your tongue in the hole.
- Blow out once through your mouth, as fast and as hard as you can.

Step 3

- Take the mouthpiece out of your mouth.
- Find the number where the marker stopped.
- Put a mark next to this number on your peak flow tracking sheet.

Step 4

- Slide the marker back to 0.
- Do the test two more times.
- Put a mark next to each number on your peak flow tracking sheet.
- Then circle the highest number. This is your peak flow number to report.
- Compare this number with your Asthma Action Plan to find out which medicine you should be taking.

ASTHMA RESOURCES

For more information about asthma, contact:

- **American Lung Association**
  1-800-LUNG-USA (1-800-586-4872) or your local chapter
  www.lungusa.org
- **Asthma and Allergy Foundation of America**
  1-800-7-ASTHMA (1-800-727-8462)
  www.aafa.org
- **National Jewish Medical and Research Center**
  1-800-222-LUNG (1-800-222-5864)
  www.nationaljewish.org
- **Allergy and Asthma Network/Mothers of Asthmatics**
  1-800-878-4403
  www.aanma.org
- **National Heart, Lung, and Blood Institute**
  1-301-592-8573
  www.nhlbi.nih.gov
- **www.AsthmaActionAmerica.com**
- **www.respiratoryinstitute.com**