

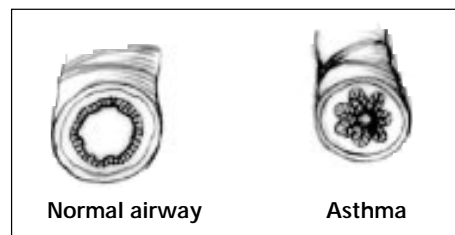
Controlling Your Asthma

If you have asthma, you are not alone. More than 14 million people in the United States have this lung disease. Of these, almost 5 million are children. Asthma is a problem among all races. But the asthma death rate and hospitalization rate for blacks are three times the rate of whites. Proper asthma care could prevent these problems for all.

This booklet can help you learn how to control your asthma or help a friend or family member with asthma.

Asthma Is a Serious Lung Disease

Asthma makes the sides of the airways in your lungs inflamed or swollen all the time. See the drawing below. Your airways react to things like smoke, dust, pollen, or other things. Your airways narrow or become smaller and you get common symptoms like those listed in the box.



Asthma that is not well controlled can cause many problems. People miss work or school, go to the hospital, or even die

because of their asthma. But you do not have to put up with the problems asthma can cause.

Your Asthma Can Be Controlled With Proper Care

With your doctor's help, you can control your asthma and become free of symptoms most of the time. **But your asthma does NOT go away when your symptoms go away.** You need to keep taking care of your asthma.

Your asthma cannot be cured—having asthma is a part of your life. So you need to make taking care of your asthma a part of your life. This is true even if your asthma is mild.

Common Symptoms of Asthma

You may have all of these symptoms, some of them, or just one. Symptoms can be mild or severe.

- Coughing
- Wheezing (a whistling noise when you breathe)
- Chest tightness (the feeling that someone is squeezing or sitting on your chest)
- Shortness of breath



How To Take Care of Your Asthma

1. **Work with your doctor and see him or her at least every 6 months.**

See:

“How To Work With Your Doctor” (on this page)

2. **Take your asthma medicines exactly as your doctor tells you.**

See:

“Taking the Right Medicines at the Right Times” (page 3)

“How To Use Your Metered-Dose Inhaler the Right Way” (page 6)

“Asthma Action Plan” (page 7)

3. **Watch for signs that your asthma is getting worse and act quickly.**

See:

“Asthma Action Plan” (page 7)
(The action plan gives you some signs that your asthma is getting worse and says when to take medicines.)

“How To Use Your Peak Flow Meter” (page 8)

4. **Stay away from or control things that make your asthma worse.**

See:

“How To Control Things That Make Your Asthma Worse” (page 10)

How To Work With Your Doctor

- **Agree on clear treatment goals with your doctor.** Your goal is to be able to say “no” to all the questions in the box on page 3 titled, “Is Your Asthma Under Control?”

- **Agree on what things you need to do. Then do them.**

—Ask questions until you feel you know what your doctor wants you to do, when you should do it, and why. Tell your doctor if you think you will have trouble doing what is asked. You can work together to find a treatment plan that is right for you.

—Write down the things you are supposed to do before you leave the doctor’s office, or soon after.

—Put up reminders to yourself to take your medicine on time. Put these notes in places where you will see them.

- **See your doctor at least every 6 months to check your asthma and review your treatment.** Call for an appointment if you need one.

Prepare a day or two before each doctor’s visit:

- **Answer the questions in “Is Your Asthma Under Control?”** on page 3. Talk to your doctor about your answers. Also, talk about any changes in your home or work that may have made your asthma worse.
- **Write down questions and concerns to discuss with your doctor.** Include ALL of your concerns, even those you think are not a big deal.
- **Bring your medicines and written action plan to each visit.** If you use a peak flow meter, bring it to each visit.

“The doctor would ask me at each visit how little Jimmy’s asthma was. I always forgot to mention some symptoms or other problems. Now it’s different. Before we visit the doctor, I write down when Jimmy had symptoms in the past 2 weeks. I also write down all the questions I have. Now when I leave the doctor’s office, I feel happy that I got all my issues addressed.”

Deborah, mother of a child with asthma

The Long-Term-Control Medicines

The most effective long-term-control medicines are those that reduce swelling in your airways (inflammation). These medicines include inhaled steroids, cromolyn, and nedocromil.

- **Inhaled steroids and steroid tablets or liquids are the strongest long-term-control medicines.** The steroids used for asthma are NOT the same as the unsafe steroids some athletes take to build muscles.

— **Inhaled steroids** are used to prevent symptoms and control mild, moderate, and severe asthma. **Inhaled steroids are safe when taken at recommended doses.** This is because the medicine goes right to your lungs where you need it. This reduces the amount of medicine you need and the chance of any side effects.

— **Steroid tablets or liquids** are used safely for short times to quickly bring asthma under control. They are also used longer term to control the most severe asthma.

- **Cromolyn and nedocromil** are often the choice of medicine for children with mild asthma.

- **Inhaled long-acting beta₂-agonists** are used to help control moderate-to-severe asthma and to prevent nighttime symptoms. Long-acting beta₂-agonists do not reduce inflammation. Therefore, patients taking this medicine also need to take inhaled steroids. Inhaled long-acting beta₂-agonists should not be used for quick relief of asthma attacks.

- **Sustained-release theophylline or sustained-release beta₂-agonist tablets** can help prevent nighttime symptoms. These medicines are used with inhaled steroids, nedocromil, or cromolyn. Theophylline is sometimes used by itself to treat mild asthma. The dose for theophylline must be checked over time to prevent side effects.

- **Zileuton and zafirlukast** are a more recent type of long-term-control medicine. Studies so far show that it is used mainly for mild asthma in patients 12 years of age and older.

Quick-Relief Medicines Are Taken Only When Needed

Inhaled quick-relief medicine quickly relaxes and opens your airways and relieves asthma symptoms. But it only helps for about 4 hours. Quick-relief medicine cannot keep symptoms from coming back—only long-term-control medicines can do that.

Take quick-relief medicine when you first begin to feel symptoms—like coughing, wheezing, chest tightness, or shortness of breath. Your doctor may tell you to use a peak flow meter to help you know when to take your inhaled quick-relief medicines.

Do not delay taking your quick-relief medicine when you have symptoms. This can keep you from having a really bad asthma attack.

Tell your doctor if you notice you are using more of this medicine than usual. This is often a sign that your long-term-control medicine needs to be changed or increased.

Make an Action Plan With Your Doctor

Ask your doctor to help you fill out the “Asthma Action Plan” on page 7. Be sure you know when to take your medicine and what to do when your asthma gets worse.

“I always thought if you had asthma you should expect to have asthma symptoms. My new doctor disagreed. She told me to take an “inhaled steroid” every day for my asthma. Well, I did not feel anything at first. But after about 3 weeks, my symptoms came less often. Now, after a few months on this medicine, I can see my doctor was right. Asthma can really be controlled.”

Glen, a long-time asthma patient

Asthma Medicines: Brand and Generic Names, 1997*

Asthma Long-Term-Control Medications

Generic name	Brand name
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Steroids: Inhaled

beclomethasone	Beclovent® Vanceril®, Vanceril®—Double
Strength	
budesonide	Pulmicort Turbuhaler®
flunisolide	AeroBid®, AeroBid-M®
fluticasone	Flovent®
triamcinolone	Azmacort®

Cromolyn and Nedocromil: Inhaled

cromolyn sodium	Intal®
nedocromil sodium	Tilade®

Leukotriene Modifiers: Tablets

zafirlukast	Accolate®
zileuton	Zyflo®

Long-Acting Beta₂-Agonists

salmeterol (inhaled)	Serevent®
albuterol	Volmax®
(extended release tablet)	Proventil Repetabs®

Theophylline: Tablets or liquid

Aerolate® III
Aerolate® JR
Aerolate® SR
Choledyl® SA
Elixophyllin®
Quibron®-T
Quibron®-T/SR
Slo-bid®
Slo-Phyllin®
Theo-24®
Theochron®
Theo-Dur®
Theolair®
Theolair®-SR
T-Phyl®
Uni-Dur®
Uniphyl®

Asthma Quick-Relief Medications

Generic name	Brand name
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Short-Acting Beta₂-Agonists: Inhaled

albuterol	Airet® Proventil® Proventil HFA® Ventolin® Ventolin® Rotacaps
bitolterol	Tornalate®
pirbuterol	Maxair®
terbutaline	Brethaire® Brethine® (tablet only) Bricanyl® (tablet only)

Anticholinergics: Inhaled

ipratropium bromide	Atrovent®
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Steroids: Tablets or liquids

methylprednisolone	Medrol®
prednisone	Prednisone Deltasone® Orasone® Liquid Pred® Prednisone Intensol®
prednisolone	Prelone® Pediapred®

* This glossary is a complete list of brand names associated with the appropriate generic names of asthma medications, as listed in the United States Pharmacopeial Convention, Inc., *Approved Drug Products and Legal Requirements*, Volume III, 17th edition, 1997, and the USP DI *Drug Information for Health Care Professionals*, Volume I, 17th edition, 1997. **This list does not constitute an endorsement of these products by the National Heart, Lung, and Blood Institute.**

HOW TO USE YOUR METERED-DOSE INHALER THE RIGHT WAY

Using an inhaler seems simple, but most patients do not use it the right way. When you use your inhaler the wrong way, less medicine gets to your lungs. (Your doctor may give you other types of inhalers.)

For the next 2 weeks, read these steps aloud as you do them or ask someone to read them to you. Ask your doctor or nurse to check how well you are using your inhaler.

Use your inhaler in one of the three ways pictured below (A or B are best, but C can be used if you have trouble with A and B).

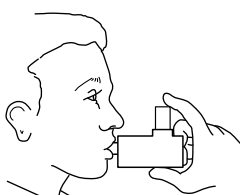
Steps for Using Your Inhaler

- | | |
|-------------------|---|
| Getting ready | <ol style="list-style-type: none"> 1. Take off the cap and shake the inhaler. 2. Breathe out all the way. 3. Hold your inhaler the way your doctor said (A, B, or C below). |
| Breathe in slowly | <ol style="list-style-type: none"> 4. As you start breathing in slowly through your mouth, press down on the inhaler one time. (If you use a holding chamber, first press down on the inhaler. Within 5 seconds, begin to breathe in slowly.) 5. Keep breathing in slowly, as deeply as you can. |
| Hold your breath | <ol style="list-style-type: none"> 6. Hold your breath as you count to 10 slowly, if you can. 7. For inhaled quick-relief medicine (beta₂-agonists), wait about 1 minute between puffs. There is no need to wait between puffs for other medicines. |

A. Hold inhaler 1 to 2 inches in front of your mouth (about the width of two fingers).



B. Use a spacer/holding chamber. These come in many shapes and can be useful to any patient.



C. Put the inhaler in your mouth. Do not use for steroids.



Clean Your Inhaler as Needed

Look at the hole where the medicine sprays out from your inhaler. If you see "powder" in or around the hole, clean the inhaler. Remove the metal canister from the L-shaped plastic mouthpiece. Rinse only the mouthpiece and cap in warm water. Let them dry overnight. In the morning, put the canister back inside. Put the cap on.

Know When To Replace Your Inhaler

For medicines you take each day (an example):
Say your new canister has 200 puffs (number of puffs is listed on canister) and you are told to take 8 puffs per day.

$$8 \text{ puffs per day} \left| \frac{200 \text{ puffs in canister}}{25 \text{ days}} \right.$$

So this canister will last 25 days. If you started using this inhaler on May 1, replace it on or before May 25.

You can write the date on your canister.

For quick-relief medicine take as needed and count each puff.

Do not put your canister in water to see if it is empty. This does not work.

Doctor's Phone Number _____ Hospital/Emergency Room Phone Number _____ Doctor's Name _____

GREEN ZONE: Doing Well

- No cough, wheeze, chest tightness, or shortness of breath during the day or night
- Can do usual activities

And, if a peak flow meter is used,
Peak flow: more than _____
 (80% or more of my best peak flow)

My best peak flow is: _____

Before exercise _____ 2 or 4 puffs 5 to 60 minutes before exercise

Medicine	How much to take	When to take it

YELLOW ZONE: Asthma Is Getting Worse

FIRST Add: Quick-Relief Medicine - and keep taking your GREEN ZONE medicine

- Cough, wheeze, chest tightness, or shortness of breath, or
- Waking at night due to asthma, or
- Can do some, but not all, usual activities

SECOND 2 or 4 puffs, every 20 minutes for up to 1 hour
 Nebulizer, once

-Or- **if your symptoms (and peak flow, if used) return to GREEN ZONE after 1 hour of above treatment:**

- Take the quick-relief medicine every 4 hours for 1 to 2 days.
- Double the dose of your inhaled steroid for _____ (7-10) days.

-Or- **if your symptoms (and peak flow, if used) do not return to GREEN ZONE after 1 hour of above treatment:**

- Take: _____ 2 or 4 puffs or Nebulizer
(short-acting beta₂-agonist)
- Add: _____ mg. per day For _____ (3-10) days
(oral steroid)

Call the doctor before/ within _____ hours after taking the oral steroid.

RED ZONE: Medical Alert!

- Very short of breath, or
- Quick-relief medicines have not helped, or
- Cannot do usual activities, or
- Symptoms are same or get worse after 24 hours in Yellow Zone

-Or- **Peak flow:** less than _____
 (50% of my best peak flow)

Take this medicine:
 _____ 4 or 6 puffs or Nebulizer
(short-acting beta₂-agonist)
 _____ mg.
(oral steroid)

Then call your doctor **NOW**. Go to the hospital or call for an ambulance if:
 ■ You are still in the red zone after 15 minutes AND
 ■ You have not reached your doctor.

DANGER SIGNS

- **Trouble walking and talking due to shortness of breath**
- **Lips or fingernails are blue**

NOW!

■ Take 4 or 6 puffs of your quick-relief medicine AND
 ■ Go to the hospital or call for an ambulance (_____) **NOW!**

HOW TO USE YOUR PEAK FLOW METER

A peak flow meter helps you check how well your asthma is controlled. Peak flow meters are most helpful for people with moderate or severe asthma.

This guide will tell you (1) how to find your personal best peak flow number, (2) how to use your personal best number to set your peak flow zones, (3) how to take your peak flow, and (4) when to take your peak flow to check your asthma each day.

Starting Out: Find Your Personal Best Peak Flow Number

To find your personal best peak flow number, take your peak flow each day for 2 to 3 weeks. Your asthma should be under good control during this time. Take your peak flow as close to the times listed below as you can. These times for taking your peak flow are only for finding your personal best peak flow.

- Between noon and 2:00 p.m. each day

- Each time you take your quick-relief medicine to relieve symptoms (measure your peak flow after you take your medicine)

- Any other time your doctor suggests

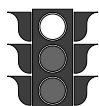
Write down the number you get for each peak flow reading. The highest peak flow number you had during the 2 to 3 weeks is your personal best.

Your personal best can change over time. Ask your doctor when to check for a new personal best.

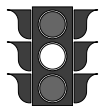
To check your asthma each day, you will take your peak flow in the morning. This is discussed on the next page.

Your Peak Flow Zones

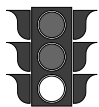
Your peak flow zones are based on your personal best peak flow number. The zones will help you check your asthma and take the right actions to keep it controlled. The colors used with each zone come from the traffic light.



Green Zone (80 to 100 percent of your personal best) signals **good control**. Take your usual daily long-term-control medicines, if you take any. Keep taking these medicines even when you are in the yellow or red zones.



Yellow Zone (50 to 79 percent of your personal best) signals **caution: your asthma is getting worse**. Add quick-relief medicines. You might need to increase other asthma medicines as directed by your doctor.



Red Zone (below 50 percent of your personal best) signals **medical alert!** Add or increase quick-relief medicines and call your doctor **now**.

Ask your doctor to write an action plan for you that tells you:

- The peak flow numbers for your green, yellow, and red zones. Mark the zones on your peak flow meter with colored tape or a marker.
- The medicines you should take while in each peak flow zone.

How To Take Your Peak Flow

1. Move the marker to the bottom of the numbered scale.
2. Stand up or sit up straight.
3. Take a deep breath. Fill your lungs all the way.
4. Hold your breath while you place the mouthpiece in your mouth, between your teeth. Close your lips around it. Do not put your tongue inside the hole.
5. Blow out as hard and fast as you can. Your peak flow meter will measure how fast you can blow out air.
6. Write down the number you get. But if you cough or make a mistake, do not write down the number. Do it over again.
7. Repeat steps 1 through 6 two more times. Write down the highest of the three numbers. This is your peak flow number.
8. Check to see which peak flow zone your peak flow number is in. Do the actions your doctor told you to do while in that zone.

Your doctor may ask you to write down your peak flow numbers each day. You can do this on a calendar or other paper. This will help you and your doctor see how your asthma is doing over time.

Checking Your Asthma: When To Use Your Peak Flow Meter

- **Every morning** when you wake up, before you take medicine. Make this part of your daily routine.
- **When you are having asthma symptoms or an attack.** And after taking medicine for the attack. This can tell you how bad your asthma attack is and whether your medicine is working.
- Any other time your doctor suggests.

If you use more than one peak flow meter (such as at home and at school), be sure that both meters are the same brand.

Bring to Each of Your Doctor's Visits:

- Your peak flow meter.
 - Your peak flow numbers if you have written them down each day.
- Also, ask your doctor or nurse to check how you use your peak flow meter—just to be sure you are doing it right.

HOW TO CONTROL THINGS THAT MAKE YOUR ASTHMA WORSE

You can help prevent asthma attacks by staying away from things that make your asthma worse. This guide suggests many ways to help you do this.

You need to find out what makes your asthma worse. Some things that make asthma worse for some people are not a problem for others. You do not need to do all of the things listed in this guide.

Look at the things listed in dark print below. Put a check next to the ones that you know make your asthma worse. Ask your doctor to help you find out what else makes your asthma worse. Then, decide with your doctor what steps you will take. Start with the things in your bedroom that bother your asthma. Try something simple first.

Tobacco Smoke

- If you smoke, ask your doctor for ways to help you quit. Ask family members to quit smoking, too.
- Do not allow smoking in your home or around you.
- Be sure no one smokes at a child's day care center.

Dust Mites

Many people with asthma are allergic to dust mites. Dust mites are like tiny "bugs" you cannot see that live in cloth or carpet.

Things that will help the most:

- Encase your mattress in a special dust-proof cover.*
- Encase your pillow in a special dust-proof cover* or wash the pillow each week in hot water. Water must be hotter than 130°F to kill the mites.
- Wash the sheets and blankets on your bed each week in hot water.

Other things that can help:

- Reduce indoor humidity to less than 50 percent. Dehumidifiers or central air conditioners can do this.
- Try not to sleep or lie on cloth-covered cushions or furniture.
- Remove carpets from your bedroom and those laid on concrete, if you can.
- Keep stuffed toys out of the bed or wash the toys weekly in hot water.

Animal Dander

Some people are allergic to the flakes of skin or dried saliva from animals with fur or feathers.

The best thing to do:

- Keep furred or feathered pets out of your home.

If you can't keep the pet outdoors, then:

- Keep the pet out of your bedroom and keep the bedroom door closed.
- Cover the air vents in your bedroom with heavy material to filter the air.*
- Remove carpets and furniture covered with cloth from your home. If that is not possible, keep the pet out of the rooms where these are.

Cockroach

Many people with asthma are allergic to the dried droppings and remains of cockroaches.

- Keep all food out of your bedroom.
- Keep food and garbage in closed containers (never leave food out).
- Use poison baits, powders, gels, or paste (for example, boric acid). You can also use traps.
- If a spray is used to kill roaches, stay out of the room until the odor goes away.

Vacuum Cleaning

- Try to get someone else to vacuum for you once or twice a week, if you can. Stay out of rooms while they are being vacuumed and for a short while afterward.
- If you vacuum, use a dust mask (from a hardware store), a double-layered or microfilter vacuum cleaner bag,* or a vacuum cleaner with a HEPA filter.*

Indoor Mold

- Fix leaky faucets, pipes, or other sources of water.
- Clean moldy surfaces with a cleaner that has bleach in it.

Pollen and Outdoor Mold

What to do during your allergy season (when pollen or mold spore counts are high):

- Try to keep your windows closed.
- Stay indoors with windows closed during the midday and afternoon, if you can. Pollen and some mold spore counts are highest at that time.
- Ask your doctor whether you need to take or increase anti-inflammatory medicine before your allergy season starts.

Smoke, Strong Odors, and Sprays

- If possible, do not use a wood-burning stove, kerosene heater, or fireplace.
- Try to stay away from strong odors and sprays, such as perfume, talcum powder, hair spray, and paints.

Exercise, Sports, Work, or Play

- You should be able to be active without symptoms. See your doctor if you have asthma symptoms when you are active—like when you exercise, do sports, play, or work hard.
- Ask your doctor about taking medicine before you exercise to prevent symptoms.
- Warm up for about 6 to 10 minutes before you exercise.
- Try not to work or play hard outside when the air pollution or pollen levels (if you are allergic to the pollen) are high.

Other Things That Can Make Asthma Worse

- Flu:** Get a flu shot.
- Sulfites in foods:** Do not drink beer or wine or eat shrimp, dried fruit, or processed potatoes if they cause asthma symptoms.
- Cold air:** Cover your nose and mouth with a scarf on cold or windy days.
- Other medicines:** Tell your doctor about all the medicines you may take. Include cold medicines, aspirin, and even eye drops.

*To find out where to get products mentioned in this guide, call:

Asthma and Allergy Foundation of America
(800-727-8462)

Allergy and Asthma Network/Mothers of
Asthmatics, Inc. (800-878-4403)

American Academy of Allergy, Asthma, and Immunology
(800-822-2762)

National Jewish Medical and Research Center
(Lung Line®) (800-222-5864)

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**Contact these groups
to learn more about
asthma:**

National Asthma Education
and Prevention Program
NHLBI Information Center,
P.O. Box 30105, Bethesda, MD
20824-0105
301-251-1222
Internet:
[http://www.nhlbi.nih.gov/nhlbi/
nhlbi.htm](http://www.nhlbi.nih.gov/nhlbi/nhlbi.htm)

Allergy and Asthma Network/
Mothers of Asthmatics, Inc.
800-878-4403
Internet:
<http://www.podi.com/health/aanma>

American Academy of Allergy,
Asthma, and Immunology
800-822-2762
Internet: <http://www.aaaai.org>

American College of Allergy,
Asthma, and Immunology
800-842-7777
Internet: <http://allergy.mcg.edu>

American Lung Association
800-586-4872
Internet: <http://www.lungusa.org>

Asthma and Allergy Foundation
of America
800-727-8462
Internet: <http://www.aafa.org>

National Jewish Medical and
Research Center (Lung Line®)
800-222-5864
Internet: <http://www.njc.org>

U. S. DEPARTMENT OF HEALTH
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Public Health Service
National Institutes of Health
National Heart, Lung, and Blood Institute

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