Understanding Asthma
Building Blocks for Better Breathing
Your Asthma Journey — Step By Step

When I talk about asthma with patients, I often see confusion spread across their faces.


“Why do my symptoms only flare up at home?” asks a young patient struggling with asthma control.

“My asthma is no big deal – why do I still need my inhaler?” wonders another.

These days, there’s no need for confusion about asthma. Its patterns are predictable, if you know where to look. Asthma care has been revolutionized with medications targeting lungs to keep you breathing well and devices and management tools to help prevent asthma flares.

This magazine – Understanding Asthma: Building Blocks For Better Breathing – presents the journey from what may be a frightening diagnosis to well-managed asthma in easy-to-understand, medically accurate language.

When you understand what’s happening inside your lungs and how they respond to allergens and irritants – pollen, dust mites or cigarette smoke, for example – you and your health care team can decide the best treatment options.

Find out why an Asthma Action Plan is vital, when to see an Asthma Specialist and what to do in the event of a flared up asthma condition.

The goal is to prevent and minimize asthma symptoms, with no limitation of daily activity while using the least amount of medication possible.

No more sleepless nights and unscheduled doctor visits. No more sitting on the sidelines of life. Better breathing for you and your family is within your reach.

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What Is Asthma?
Understanding What’s Going On In Your Lungs

Asthma is a long-term lung disease that causes episodes of coughing, wheezing and shortness of breath. Like all chronic illnesses, asthma cannot be cured, but it is very manageable. Most people with asthma experience one or more of the following symptoms:

• **Coughing:** Coughing from asthma is often worse at night or early morning. Sometimes it’s your only symptom. It can be dry or mucus-filled.

• **Wheezing:** This is a whistling or squeaky sound especially when you breathe out. Some times wheezing is easily heard; other times you need a stethoscope.

• **Chest tightness:** This can feel like something is squeezing or sitting on your chest.

• **Shortness of breath:** You may feel breathless, like you can’t catch your breath or breathe deeply enough. You may feel as though you are out of shape and constantly tired.

Normally, your lungs bring in fresh air and push out used air, but during an asthma flare it is harder to push out the used air and pull in the fresh because:

• the lining of the airway swells;

• your body makes too much mucus which clogs the airway;

• muscles around the airway get tight, making the airway narrow, with less room for air to pass through.

Asthma is a two-step process: airway inflammation – quiet asthma – and bronchospasm – noisy asthma.

Quiet Asthma
When you have asthma, your airways become easily inflamed and swollen. Since you can’t feel or see what’s going on, we call this airway inflammation the quiet part of asthma. If it is not treated, each time your airways are exposed to your asthma triggers, the inflammation increases and your symptoms are likely to get worse.

MYTH: Asthma is not serious.

TRUTH: Asthma is a variable disease changing from mild to moderate to severe. It is always serious and can be life-threatening – 10 people die of asthma every day. One-third of all people who die of asthma were diagnosed with a mild form of the disease.
Noisy Asthma
When your airways are inflamed, they are very sensitive. Like sunburned skin hurts when you touch it, inflamed airways react to irritation. It can be an immune system response to allergies or to a cold or flu virus; or a reaction to cold air, strong smells, exercise, stress or even laughter.

Exposure to irritation triggers bronchospasm — the noisy asthma symptoms of coughing, wheezing and shortness of breath.

Asthma is very individualized and not a one-size-fits-all disease — what causes symptoms for you or your family may be quite different from what affects others.

What causes asthma?
Anyone of any age, family background, race, gender or general health can develop asthma. Researchers think many genetic and environmental factors play a role, especially during the first years of life when the immune system is developing.

An important factor is a family history of allergy. If your parents or siblings have allergies or asthma, your chances of developing it also increase.

Exposure to secondhand smoke during early childhood or having a mother who smoked while pregnant puts your chances of developing asthma higher.

Exposure to indoor allergens such as dust mites, exhaust fumes, air pollution, or some chemicals irritants may also make a child at risk, as does exposure to secondhand smoke during pregnancy.

Exposure to secondhand smoke during pregnancy puts the child at risk, and exposure to secondhand smoke during early childhood puts your chances of developing it also increase.

Asthma can occur in anyone of any age, family background, race, gender or general health. Anyone of any age, family background, race, gender or general health can develop asthma.

Asthma is a life-long disease that cannot be “outgrown.” Your immune system changes throughout your life and your asthma symptoms will too.

However, you will always have the potential to experience asthma symptoms and must be aware that they can return at any time.

With correct diagnosis, careful management and appropriate use of medications, you can go years without any problems. However, if you let asthma get out of control, it can cause long-term lung damage.

Most people with asthma should be able to do anything those without asthma can do:

- Be free from troublesome symptoms day and night.
- Have the best possible lung function.
- Participate freely in activities.
- Miss few or no school or work days because of asthma symptoms.
- Have fewer or no urgent care visits or hospital stays for asthma.
- Have few or no side effects from asthma medications.

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Faces of Asthma
“Learn all you can about asthma and allergies. Ask questions. Doctors will give you the help you need if they understand what you are telling them.” — Lindsay Dreessen

Dictionary of Asthma

**IgE**: antibodies produced by the immune system that set off allergy symptoms.

**Leukotrienes** ([LOU-kuh-try-uh-nz]): chemicals involved in immune response that cause inflammation, swelling and tightening of the airways.

**Metered-dose inhaler** (MDI): a pressurized device used to spray medicine for inhalation.

**Nebulizer** ([NEH-byuh-lizer]): electric or battery-powered machine that turns liquid medicine into aerosol that can be inhaled.

**Peak flow meter**: a handheld device that measures peak expiratory flow rate (PEFR), the maximum speed that you can force air out of your lungs.

**Spacer**: device that fits onto an MDI inhaler (or is a built-in part of the MDI) that helps direct the flow of medicine into the back of your throat, user must coordinate spray with inhalation, as spacer does not trap particles.

**Spirometer** ([Spy-RAW-meter]): device that measures how much air you can push in and out of your lungs.

**Misleading Terms:**

**Rescue inhaler**: Don’t wait until you need “rescue” or are near death before using your quick-relief bronchodilator.

**As needed**: One person’s “need it now” is another’s “Maybe later.” Get specific details on when to use each medication.

**Controller medication**: Most asthma medications “control” symptoms in one way or another. One medication alone may not give asthma patients full symptom control.

**Mild or moderate asthma**: All asthma is serious. Mild asthma symptoms can turn severe in a moment.

**Outgrowing asthma**: Your child may have fewer or no asthma symptoms into teenage years, or may have a lifetime of asthma and allergy symptoms. Airways are always sensitive for life.

**Puffer**: Inhaler asthma medications don’t puff up or inflate your lungs.

**Anti-IgE**: medication that blocks the production of IgE antibodies and interrupts allergic reactions.

**Anti-inflammatory**: medication that reduces and prevents airway swelling and inflammation, the quiet part of asthma that’s always there but rarely noticed or felt. Usually taken daily.

**Bronchodilator** ([BRON-kay-dyl-ter]): medication that relaxes muscles around your airways and treats the noisy part of asthma: coughing, wheezing, choking and shortness of breath.

- **Quick-relief (short-acting) bronchodilators** work for 3-6 hours and should be used at the first sign of symptoms, before exercise and as directed by your doctor.
- **Long-acting (12-hour) bronchodilators** should be taken daily or twice-daily as prescribed, usually in conjunction with an inhaled corticosteroid.
- **Anticholinergics**: bronchodilator used to treat Chronic Obstructive Pulmonary Disease (COPD).

**Bronchospasm**: twitching and sudden constriction of the airways that causes noisy symptoms of asthma: coughing, wheezing and shortness of breath.

**Bronchoconstriction**: narrowing and tightness of airways caused by inflammation.

**Corticosteroid** ([cor-tih-co-STay-royld]: the most effective anti-inflammatory medication for asthma.

**Combination medication**: contains two medicines in one dose, usually a long-acting bronchodilator and an anti-inflammatory corticosteroid.

**Daily symptom diary**: written record of symptoms, peak flow meter readings, and medications used; helps you see patterns of your disease, identify allergens and irritants that set off symptoms, and record questions for your health care team.

**Dry powder inhaler** (DPI): device used for powdered medicine; breathing in activates the device to release medication. Easy to use and very effective as the tiny particles reach tiny airways.

**Fractional exhaled nitric oxide** ([FeNO]): a test that measures exhaled nitric oxide and indicates airway inflammation.

**Holding chamber**: a valve device that fits onto a metered-dose inhaler (MDI) to trap and suspend medication spray so user can inhale when ready or during 3-5 breaths; also helps reduce amount of spray that hits tongue and inside cheeks.
All that wheezes or coughs is not necessarily asthma.

Getting to an accurate diagnosis begins with a conversation with your doctor. Like a skilled detective, the doctor combines information from your medical tests, physical exam and verbal reports to determine whether asthma or some other cause is responsible for your symptoms.

Some questions to discuss:

- When did you first notice symptoms, how long did they last, what made them better or worse?
- Do you or does someone in your family have a history of eczema, allergies, asthma, food allergies, rhinitis, seasonal bronchitis, colds that linger for months instead of days?
- Does anyone in your family, home or workplace smoke?
- Do you have breathing problems when exercising or sleeping through the night?
- What is your home, school, and work environment like? Do you have pets, carpets or wood floors, water damage in your basement?

Next, the doctor will do a physical exam, looking for signs of conditions that often go along with asthma such as rhinitis (inflammation of the nose), sinusitis (inflammation of the sinuses), nasal polyps (mucus-filled bulbous sacks in the nose), eczema or dermatitis (skin irritation).

The physician will look inside your nose, watch the way your chest and stomach muscles move when you breathe, and use a stethoscope to listen to air flowing in and out of your lungs.

If the signs begin to point to asthma, the doctor may use a spirometer to check how well your lungs are working. You’ll be asked to take a deep breath in and then breathe out as hard as you can into the machine. The spirometer shows the amount of air you are able to breathe in and out and how fast you did it over a certain time period. If your airways are inflamed and narrowed, or if the muscles around your airways tighten up, the results will show it.

You may do this test several times, perhaps before and after using a quick-relief bronchodilator to relax the airways. Test results that improve after using the medicine are a strong indication of asthma.

If you are having no symptoms on the day of your exam, the results of your lung function testing may be normal. In this case, your doctor may order another test called a methacholine challenge. This medication causes a brief tightening of the airways that is more intense in people who have asthma.

Other tests might include:

- Allergy testing.
- A test to see how your airways react to exercise.
- Tests for other conditions, such as gastroesophageal reflux disease (GERD) or obstructive sleep apnea.
- A test for sinus disease.
- A chest x-ray or electrocardiogram to find out if a foreign object or other lung or heart disease could cause your symptoms.
- A fractional exhaled nitric oxide (FeNO) test to measure lung inflammation.

Factors your doctor will consider to determine severity:

- Number and frequency of symptoms experienced.
- Degree to which symptoms interfere with your breathing and ability to function.
- Results of diagnostic testing.
- Hospitalizations or emergency visits, missed school or work days, and sleepless nights.
- Types of medications needed to maintain control over symptoms.

Is This Asthma?
Find Out For Sure
Steps To An Accurate Diagnosis

About Your Treatment Plan
Your doctor might describe your asthma as mild, moderate or severe, intermittent or persistent. These categories determine a treatment plan only.

These terms are misleading. People diagnosed with mild asthma can die from a sudden, severe flare. If you underestimate the seriousness of asthma and ignore prevention and treatment recommendations, you expose the airways to long-term lung damage.

A person diagnosed with severe, persistent asthma can have a mild episode easily controlled with an extra dose of medications or avoiding triggers – and can move from severe to mild by learning to manage symptoms effectively. Again, these terms should be used by the doctor only to determine a treatment plan.

Factors your doctor will consider to determine severity:

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- Degree to which symptoms interfere with your breathing and ability to function.
- Results of diagnostic testing.
- Hospitalizations or emergency visits, missed school or work days, and sleepless nights.
- Types of medications needed to maintain control over symptoms.
Your Asthma Action Plan
A Personal Guide to Recognizing, Treating & Preventing Symptoms

After the diagnosis, you and your doctor will draw up your personal plan of treatment, called an Asthma Action Plan. This written document should spell out how to treat your asthma daily, what to do when symptoms get worse, and how to handle situations such as exercise or when you have a cold or virus.

As you are developing your plan with your health care team, be sure you understand the following information:

1. What medicines you should take, especially:
   - What each is called.
   - Why you need it.
   - How much to take.
   - When to take it.
   - How to use the inhaler or nebulizer device.
   - How soon to expect results.
   - Potential side effects.

2. What allergens and irritants set off your asthma symptoms and how to reduce or eliminate contact with them.

3. How to monitor your asthma by tracking symptoms or peak flow readings.

4. How to recognize and handle worsening asthma, including:
   - What signs to watch for.
   - How to adjust medicines in response.
   - When to seek emergency care from your doctor or the emergency room (ER).
   - What numbers to call in an emergency.

If you don’t have an Asthma Action Plan designed specifically for you, make an appointment to talk with your health care professional about it as soon as possible. Go over each detail with your health care professional until you are confident you understand it and can follow it in your daily life. Ask questions. Talk about any problems you think you might run into.

Your Asthma Action Plan will change as your asthma improves or worsens. Review the plan with your doctor at every appointment, including follow-up visits when your asthma is under control.

What are some warning signs of asthma?
Warning signs vary from one person to another but can be as simple as a tickle in the throat or chest, a sharp or sudden cough, a feeling of extreme tiredness or the feeling that you simply can’t get a good, deep breath. When you keep a daily symptom diary, you will recognize the pattern of your early warning signs.

What’s the first thing to do when symptoms begin?
The moment you first notice symptoms, use your prescribed quick-relief bronchodilator (such as albuterol or levalbuterol). These medications relax the muscles that surround the airways, making it easier to breathe within a few short minutes. Some people mistakenly call these medications “rescue inhalers,” which gives the impression that they should only be used in an emergency situation. Using these medications at the first sign of symptoms or before exercise can prevent symptoms from getting out of control.

What are the signs that asthma symptoms are worsening?
One or more of these signs indicate the need for immediate medical treatment:

- Symptoms don’t respond as indicated in your Asthma Action Plan.
- It feels like you can’t catch a good deep breath or can’t get the air out of your chest.
- You can’t talk except in short phrases.
- You have a cough that will not stop or you simply feel too exhausted to breathe.
- Your shoulders tense and raise closer to your ears than normal.
- It’s easier to breathe while sitting and leaning forward than when lying down.
- Your fingertips turn blue, or your lips become bluish or gray in color.

Potential side effects:
- You start sweating even though your skin feels clammy and cold.
- The skin around your chest, ribs and collarbones sinks in with each breath and you’re using stomach muscles to help you breathe.
- You experience swelling of your throat, tongue or limbs.

How do I prevent symptoms from coming back?
Once the obvious symptoms of an asthma flare end, think about what happened in the moments, hours or days leading up to the episode. Look for clues as to what may have started the symptoms. A daily symptom diary like Allergy & Asthma Network’s AsthmaTracker® (see page 35 for more information) can help you track how well your symptoms respond to steps in your written Asthma Action Plan. By writing down your symptoms, medication use, and peak expiratory flow rate (the reading from your peak flow meter) each day, you’ll notice a pattern to your symptoms. Use a daily symptom diary for at least three months (12 months is best) to find patterns that you wouldn’t otherwise notice. With each discovery, you’ll see a new opportunity to stop the symptoms before they can stop you.

When you find out what sets off your symptoms, do your best to avoid them. This may require a change
in lifestyle, such as avoiding all exposure to cigarette, cigar and pipe smoke; keeping pets out of the bedroom or removing them from the home; and placing dust-mite-proof encasings on your pillows and mattress. It may mean changing your furnace filters more often or removing moldy carpeting and fixing the water leak that caused it.

However, you may not be able to avoid every circumstance likely to result in asthma symptoms, such as going outside when pollen counts are high. That’s why asthma medications are a necessary part of your Asthma Action Plan.

In addition, allergy shots or immunotherapy can teach your immune system to respond less strongly to allergens such as animal dander, dust mites, molds and pollens. If you have allergic asthma, controlling allergies will help control your asthma.

**How do I reduce the need for medications?**

Over time, you will learn about your asthma and what makes your symptoms worse. As a result, you’ll find many ways to reduce your need for asthma medications.

1. Find things in your home, work or school that bring on your symptoms and try your best to get rid of them wherever possible.

2. Learn about your treatment options and how to use your medications correctly. Different medications treat different parts of asthma. Find out from your medical care team exactly what each does in your body and when you’re supposed to use it. Some of these medications are used daily while others are used only when you’re having symptoms.

3. Treat asthma symptoms at the very first hint that they’re even present. The longer asthma symptoms are allowed to continue, the more likely you will need to take even more medications to get things back to normal.

4. Take good care of yourself — eat healthy, exercise and get enough sleep.

**Faces of Asthma**

“I learned my early warning signs at a young age and make sure I treat my asthma when these signs are present. I have carried my inhaler with me for so long that it is automatic for me. I have multiple inhalers — one at home, one at work, and one in my gym bag.” — Andrew Morales

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**Asthma Action Plan**

**Doctor:**

**Doctor’s Phone Number:**

**Asthma Is Getting Worse**

- **Medical Alert!**
  - **Take:** 2 or 4 puffs of your quick-relief medicine AND Call the doctor NOW.

- **Medical Alert!**
  - **Take:** 2 or 4 puffs, every 20 minutes for up to 1 hour OR Call the doctor NOW.

**Asthma Is Getting Better**

- **Take:** 2 or 4 puffs of your quick-relief medicine AND Go to the hospital or call for an ambulance NOW!

- **Take:** 2 or 4 puffs of your quick-relief medicine AND Go to the hospital or call for an ambulance NOW!

**Warning:**

- **Take:** 2 or 4 puffs of your quick-relief medicine AND Go to the hospital or call for an ambulance NOW!

**Asthma Action Plan**

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When to See an Asthma Specialist

Most often, the original asthma diagnosis comes from a primary care provider who may also take a blood test to identify allergies that may trigger your asthma.

Is that enough, or should you ask for a referral to a specialist? It depends on how well the treatment plan is working and how complicated your medical situation is. Asthma is a complex, ever-changing condition that requires constant attention. If you or your child continue to experience symptoms that disrupt sleep or everyday activities, even after strictly following your management plan, then a visit to a specialist is in order.

National Institutes of Health (NIH) asthma guidelines recommend seeing a specialist if any of the following apply:

- You have had a life-threatening asthma episode.
- You are not responding to treatment after 3-6 months.
- You have persistent asthma symptoms, limited physical activity and frequent flares.
- You need continuous high-dose inhaled corticosteroids or more than two courses of oral corticosteroids in one year.
- You need additional testing like allergy tests, complete spirometry breathing tests, rhinoscopy (looks into nasal passages and sinuses) or bronchoscopy (looks into the lungs).
- You are being considered for immunotherapy (allergy shots).
- You have conditions that complicate your asthma or diagnosis, such as severe hay fever, sinusitis, GERD (gastroesophageal reflux) or exercise-related breathing problems.
- You require additional education on complications of therapy or allergen avoidance at home, school or work.

Specialists Who Treat Asthma & Allergies

Allergist/Immunologist: Specializes in diagnosis and treatment of allergies, asthma and immune disorders, including allergy testing and immunotherapy. Usually the first specialist to see, since allergies are a common trigger of asthma symptoms.

Pulmonologist: Specializes in diagnosis and treatment of lung diseases; often treats asthma complicated by colds, flu and pneumonia.

Your treatment is not working if:

- You have asthma symptoms more than two days a week.
- Your asthma wakes you up two or more times a month.
- You are using your quick-relief bronchodilator more than two days a week (except before exercise).
- Your asthma prevents you from your usual activities.
- You are not sure what triggers your asthma.
- You have not been allergy tested.
Medicine Matters

Asthma medications play a central role in your treatment plan. Some prevent or reduce airway inflammation; others interrupt the allergic reaction that triggers symptoms; others relieve the coughing and wheezing, making it easier to breathe.

Your doctor will work with you to find the right combination of medicines to manage your asthma, and will adjust the type and amount based on your symptoms and control. The goal of asthma treatment is to have you feel your best with the least amount of medicine.

Get to know your medications. Understand how and why they heal and soothe your lungs – then follow your plan to better breathing.

### Inhaled Quick-Relief Bronchodilators
(also called “short-acting”)

- ProAir HFA (albuterol)
- Proventil HFA (albuterol)
- Ventolin HFA (albuterol)
- Xopenex HFA (levalbuterol)

**What they do:**
Relieve noisy asthma symptoms of coughing, wheezing, shortness of breath (bronchospasm) by relaxing muscles around the airways.

**What to expect:**
- Breathing improvements within minutes, lasting 3-6 hours.
- Possible increase in heart rate or shakiness; children may seem more energetic and excitable.

If symptoms are not going away as expected, or if more medication is needed than prescribed, it could be a sign of:
- Worsening asthma; follow your Asthma Action Plan – time to call the doctor.
- Poor inhaler technique.
- A partially clogged inhaler; when was the last time you cleaned it?
- An empty inhaler; it runs out of medication before the canister feels empty.

When asthma symptoms are controlled the way they should be, you won’t need quick-relief bronchodilators every day or even every week except to prevent exercise-induced symptoms or particular exposures. Even though the different bronchodilators are similar in many ways, the Food and Drug Administration (FDA) states there are distinct differences among them. One brand should not be substituted for the other without both the patient/parent and doctor agreeing and understanding the differences.

### Inhaled Anti-inflammatory Corticosteroids

- Aerospan (flunisolide)
- Alvesco (ciclesonide)
- Asmanex (mometasone)
- Flovent (fluticasone)
- QVAR (beclomethasone)

**What they do:**
Treat and prevent airway inflammation – the quiet part of asthma you are not likely to notice.

**What you need to know:**
- Take daily as prescribed, whether you think you need them or not.
- Do not use at higher doses or more frequently than prescribed.
- Tell your health care provider if you are using more than one type of corticosteroid medication, such as nasal sprays, eye drops, skin creams or pills.
- Not related to anabolic steroids used by some athletes to build muscle mass.

**What to expect:**
- No immediate sensation that it is working.
- A gradual improvement in symptoms and peak flow meter readings.
- Over time, less need for quick-relief bronchodilators.
Symptoms.

Inflammation, swelling
reduce bronchospasm.

Corticosteroid with a

Leukotriene
modifiers

Singular (montelukast) • Accolate (zileuton) • Zyflo (zileuton)

What they do: Block the action of leukotrienes, chemicals involved in immune responses that cause inflammation, swelling and tightening of the airways.

What you need to know: Available as granules, chewables and tablets.

What to expect: No immediate sensation that it is working

Gradual improvement in allergy and asthma symptoms.

Anti-IgE Biologic

Xolair (omalizumab)

What it does: Blocks IgE antibodies that cause allergy symptoms.

What you need to know: Delivered by injection in a doctor’s office.

What to expect: A gradual reduction in allergy symptoms and the asthma that they may trigger.

Inhaled Combination Medications

• Advair (fluticasone and salmeterol) • Breo Ellipta (fluticasone furoate and vilanterol)

What they do: Combine inhaled corticosteroid with a long-acting bronchodilator in one device to treat underlying airway inflammation as well as reduce bronchospasm.

What you need to know: Take no more than once every 12 hours.

What to expect: No immediate sensation that it is working

Over time, less need for quick-relief bronchodilators.
Asthma Management Tools
What You Need to Know

Asthma flares don’t just happen. Subtle signs are there if you know where and how to look. Coughing, sneezing, wheezing and congestion indicate a patient is already compromised. You need to detect problems from the very beginning.

The following devices and suggestions remove some of the worry in keeping you and your family healthy. Always keep the goal of preventing and minimizing asthma and allergy flares in mind.

Nebulizer
Nebulizers turn liquid medicines into a fine aerosol that can be inhaled deep into the airways. Though studies show they are no more effective than MDIs, they offer an alternative for patients who have difficulty with MDI coordination or who prefer a slower delivery of medication. Some say they benefit those who have difficulty with MDIs, they offer an alternative for patients who have difficulty with MDI coordination or who prefer a slower delivery of medication.

Dose Counter
Dose counters record and display the number of sprays remaining in your inhaler, providing you with an accurate measurement of life-saving medication. Allergy & Asthma Network believes all metered-dose inhalers should be required to have dose counters.

Valved Holding Chamber
Mastering inhaler technique takes coordination and practice. A valved holding chamber attached to your inhaler captures the mist for you to inhale the dose. Best of all, it traps large particles unable to make it into your airways and prevents them from settling in your throat and mouth.

Don’t confuse spacers with holding chambers. Both devices direct the medicine to where it is supposed to go, but only a holding chamber “holds” the medicine to help inhalation.

Peak Flow Meter
This small handheld device measures your Peak Expiratory Flow Rate (PEFR). That is the maximum speed you can force air out of your lungs. Large airways, indicating how well your lungs are working. If you have early signs of an asthma flare, keep track of two important numbers: your “personal best” representing the best you can expect to achieve when your asthma is under very good control; and your “predicted” representing the average of someone of your height, sex or age. It is these two numbers you need to discuss with your doctor when your personal best begins to fall.

Spirometer
This measures volume and speed that air is expelled in and out of the lungs. Results assist in the diagnosis of asthma. Home spirometry monitoring does not give the same information as spirometry testing in a doctor’s office.

Asthma Action Plan/AsthmaTracker®
This combo keeps you organized and current on your daily health needs. Used in conjunction with each other, symptom patterns jump out ready for any preventable requirements. Your Asthma Action Plan may change. Basic information includes: medications responding to symptoms, specific symptoms, allergies and triggers. The plan covers daily treatment as well as what to do when symptoms worsen.

AsthmaTracker® is an easy-to-use daily diary to help you identify the subtle and not-so-subtle pattern of symptoms and tells you how well your management plan is working. (See page 35 for more information.)

Stethoscope
A stethoscope is a medical device designed to listen to body sounds for diagnostic purposes. It’s an inexpensive device for listening to breathing patterns and hearing subtle changes, detecting wheezing not audible without one and hearing where there are no sounds – a very dangerous sign. Everyone has a distinct breathing pattern. When that breathing pattern changes, it usually signifies something is brewing.

When asthma is triggered by infections, episodes progress very quickly from congestion to pneumonia. Stethoscopes address episodes quickly, giving you extra time for medicines to kick in and get to the hospital if that is what is required. Stethoscopes are not difficult to use. Discuss thoroughly with your doctor.

Early Warning Signs
Typical warning signs include the obvious – coughing, sneezing, wheezing, chest tightness – and subtle signs like feeling overtired. It may take a while, but you will soon notice very specific early warning signs requiring extra vigilance.

Respiratory Rate
Measured in breaths per minute (BPM), respiratory rates increase as an episode progresses. It’s measured by numbers of times patient’s chest rises and falls. BPM ranges from 30-60 for a one-month-old child to 18-22 for an adult. Check with your doctor for specific rates and if this measurement is helpful for you and your family.

Well Visit With Your Doctor
Follow-up visits, setting goals, changes in an Asthma Action Plan, checking inhaler technique and seeing a healthy and active patient keeps your doctor glued in to your health. The patient-doctor relationship rests on a foundation of trust. If the patient is a child or young adult, this relationship may make the difference with compliance in taking medication and following the plan. Keep those well appointments.
Mastering Your Inhaler

Inhalation medication delivers it quickly and directly to inflamed and congested airways. Pills or tablets must go through the digestive system and bloodstream, slowing down their effectiveness.

There are two basic types of inhalers:
- metered-dose inhalers (MDIs), pressurized canisters that release medication in a fine spray
- dry-powder inhalers (DPIs), devices of many different styles that release medication as a fine powder for inhalation.

Proper inhaler technique is important for each. There are two basic types of inhalers:
- Metered-Dose Inhalers (MDIs)
- Dry Powder Inhalers (DPIs)

Different MDIs look the same on the outside, but each is distinctly different in operation and maintenance.

1. Remove the MDI mouthpiece cap and look at the tiny exit hole where the medication comes out of the canister. It should be free of debris or white powder. If it’s not, follow package instructions to thoroughly clean the inhaler.
2. Shake the inhaler to mix the crystalline powder medication with propellants and other ingredients inside the canister. Check your patient instruction sheet to see if your inhaler requires shaking (and how much), as a few brands (including Alvesco and QVAR) are blended differently and don’t need shaking.
3. Prime the inhaler if necessary. When the MDI is new or has not been used in a while, the ingredients may separate. Priming ensures the dose you inhale contains the labeled amount of medication. Note: Priming instructions are different for each MDI brand; check your patient instruction sheet. When using a valved holding chamber, insert the MDI mouthpiece into the end port of the chamber after priming.
4. Stand or sit up straight and breathe out completely. Emptying your lungs as much as possible gives you room to inhale the medication slowly and deeply.
5. Hold the inhaler upright about 1-2 inches away from your open mouth, with the mouthpiece at the bottom and the top pointing up to the sky. If using a valved holding chamber, place the mask tightly on the user’s face or put the mask tightly on the user’s face or put the mouthpiece between your teeth and close your lips tightly around it. Some doctors recommend putting the MDI mouthpiece between your teeth and closing your lips tightly around it. Talk with your health care team about what method is best for you.
6. Begin to inhale slowly, then activate the inhaler a split-second later. If you wait too long, you won’t have enough breath left to inhale the medicine deep into your small airways.
7. Continue inhaling slowly for 2-5 seconds, until your lungs are full. You might be surprised at how long a time that is, so test yourself. Using a stopwatch device or clock with a second hand, begin to inhale and pretend to actuate your inhaler. See how long it takes you to fill your lungs. Did you run out of room in your lungs before three seconds? If so, try it again, more slowly. Practice until you’re able to get it right. Then practice again...and again. One type of holding chamber features a whistle that goes off if you are inhaling too forcefully, a signal that you need to slow down.
8. Hold your breath for 10 seconds, if possible. (You can take the inhaler out of your mouth.) When you hold your breath, you allow the tiny particles of medication to settle on the surface of your airways.
10. Repeat steps 2 through 9 if your Asthma Action Plan says to take a second dose. (Skip step 3; your inhaler would not need to be primed again so soon.)
11. Replace the cap on your inhaler and store it where it won’t be exposed to moisture or extreme temperature changes. Check your patient instruction sheet to see if your inhaler needs to be stored in an upright position; some do. For best results, store and use the inhaler at normal room temperature—about 77 degrees F. In very cold weather, keep it close to your body, not in your car or in a backpack. In cold temperatures, warm the inhaler with your hands before using it.
12. Clean the inhaler according to your patient instructions, usually weekly. If using water, leave time for the inhaler to air dry. Holding chambers also need to be washed according to instructions.

Know Your Count

Even the most perfectly timed inhalation won’t do you any good if there’s no medicine left in the inhaler. That’s why it’s important to count each dose and prime before use and replace the inhaler after using the labeled number of sprays.

Don’t rely on how it “feels”: Long after the active medication has been used up, MDIs will continue to spray or feel full when shaken.

Allergy & Asthma Network believes all inhalers should have a built-in dose counter. If yours does not, develop a system to keep track. For daily medications, simply mark the canister when you first open it and figure how long it will last.

With inhalers like quick-relief bronchodilators that you take only when needed, you must keep track as you go.

Do not use MDIs beyond the recommended number of doses on the canister label, even if you are tempted. There is no way to know if the dose inhaled contains medication.

TRUTH: It’s important to follow your Asthma Action Plan and take your anti-inflammatory medications daily, as prescribed. Once your asthma symptoms are well under control, your physician may recommend reducing your daily medication dosage or schedule. It is dangerous to do this without medical supervision.

MYTH: I can start my medications during seasons I don’t have exposure to my asthma triggers.

Understanding Asthma 23
Dry Powder Inhalers (DPIs)

Medication particles in DPIs are so small that they can easily reach the tiniest airways, and you may not taste or feel the medication as you inhale.

The medicine is released to your airways when you take a deep, fast breath from the inhaler. Inhaling the dry powder may cause some people to cough; talk with your doctor to make sure a DPI is right for you.

Follow the manufacturers’ instructions to maintain and use your DPI. Once the medicine is loaded and ready, follow these basic steps:

1. Exhale slowly, pushing as much air out of your lungs as possible.
2. Put your mouth on the mouthpiece and inhale deeply and forcefully.
3. Hold your breath for 10 seconds.
4. Exhale slowly.
5. Repeat as instructed.

Research studies say that inhalers can be as effective as nebulizers at getting medication deep into your airways. However, many users say otherwise: Inhalers are great when you’re out and about, but if you’re under the weather and feeling short of breath, nebulizers are your best bet.

In most set-ups, you have a compressor (the basic machine), tubing, a cup (the nebulizer) for the medicine, and a mouthpiece. You might also have a mask.

The compressor forces air into the medication in the cup, breaking the liquid into an aerosol. The cup design determines how well the system can produce droplets that are the right size to travel deep into the airways. Breath-enhanced and breath-actuated units allow less medication to escape into the air.

Very young children, as well as handicapped or elderly patients unable to use a mouthpiece dependably should always use a mask. Choose one that is soft and pliable enough to fit snug on the face and large enough to cover the mouth and nose.

Pour medication into the nebulizer cup

Unit-dose vials are a snap to use; just twist off the top and pour. Choose a nebulizer cup that will sit flat for easy pouring. Take a sniff as you pour and throw out any medication that smells foul, spoiled or like it may contain rubbing alcohol. It smells of alcohol, it may be an illegal solution, not FDA-approved.

Danger Zone

- Never mix your own nebulizer medications from powdered capsules, crushed tablets or liquid medicines. Using medications other than those that are FDA-approved for nebulization can result in airway injury or infection.
- Don’t overload your nebulizer cup. It won’t aerosolize the medication at the correct particle size.
- Don’t “blow by” or mist the medication in front of your child’s face. This will simply release the medicine into the air, not the lungs.

Sit back and relax

Put the mask in place or place the mouthpiece over your tongue and close your teeth and lips tightly around it, then turn on the machine. Breathe normally. If you start to cough, turn the machine off until you can breathe freely again. Continue the breathing treatment until the cup is empty. If the medication foams or bubbles, stop the treatment; you may have defective or contaminated medicine or equipment.

Wash up

Follow manufacturer’s instructions to keep your nebulizer cup, mouthpiece and tubing clean. Be thorough; whatever gets into your cup – from your hands, medication or house dust – will get into your lungs. When everything is clean and dry, store the system where it will stay dust-free.

Neulizer cup/mouthpiece units and tubing don’t last forever. The plastic will break down over time. Replace them as recommended – and don’t forget to clean or change the air filter. Most machines have one.

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MANAGING YOUR CONDITION

Allergy Testing & Immunotherapy

Most children and adults with asthma have allergies to things they breathe, touch or eat – and these allergies can set off asthma symptoms. Knowing which allergens affect you puts you one step closer to asthma control. Make an appointment with a board-certified allergist who will take a detailed medical and family history, discuss your symptoms, and use skin prick or blood tests to confirm a diagnosis.

Allergists consider skin tests to be the gold standard for allergy testing. They are quick, inexpensive and produce reliable results, when interpreted by a trained allergist.

Another option is a blood test, often done by primary care doctors as an initial screening or by allergists where skin prick tests are not recommended. Results must be interpreted in conjunction with your medical and family history and pattern of allergy symptoms, as a positive result does not always mean that you will experience a reaction to the allergen.

Once you know for sure what you are allergic to, you and your doctor can make a plan to avoid exposure. Some allergens, such as pollen, mold, dust mites, animal dander and insect stings are very difficult to avoid. However, allergies – and the asthma flares they spark – often can be dramatically improved with immunotherapy, or allergy shots.

Immunotherapy

Immunotherapy is the process of introducing controlled amounts of an allergen to the immune system on a regular schedule, gradually increasing your tolerance. It has been proven very successful in treating respiratory symptoms, as a positive result does not always mean that you will experience a reaction to the allergen.

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Under-the-tongue therapy

A new form of immunotherapy called sublingual immunotherapy (SLIT) uses tablets that dissolve under the tongue. In 2014, the Food and Drug Administration (FDA) approved the first SLIT tablets for grass and ragweed allergies. Unlike allergy shots that can treat multiple allergens at the same time, tablets are specific to one or a few related substances and are taken daily either seasonally or year-round.

Another form of SLIT involves drops of liquid allergens held under the tongue. Concentrated allergen extracts for drop therapy have not been approved yet in the United States and are still considered experimental.

This treatment typically is not reimbursed by insurance companies.

Discuss immunotherapy options with a board-certified allergist to determine which is best for you.

The Asthma-Food Allergy Connection

The guidelines for the Diagnosis and Management of Food Allergies in the U.S., from the National Institutes of Health, provides clear instructions for managing the often-overlapping symptoms of asthma and food allergies.

Five things people with asthma need to know about food allergies:

- **Studies show that 35-50 percent of people with food allergy have asthma.**
- **It’s suspected there are many people with asthma who don’t know that food allergies are affecting their asthma flares.**
- **The connection between the two starts with the genetic factors that put a person at risk of developing allergy-related conditions such as atopic dermatitis (eczema), food allergy, asthma and allergic rhinitis (hay fever).**
- **People who have both asthma and food allergy are at higher risk of severe food allergy reactions than those without asthma.**
- **Respiratory symptoms are common during anaphylaxis – the life-threatening allergic reaction sometimes set off by food allergy – even in people who do not have asthma.**

The person develops wheezing, their airways become swollen and blocked, and this can lead to death. So when a person with asthma, whose airways are already sensitive or inflamed, develops anaphylaxis from a food they are allergic to, they are at greater risk of complications.

People with both conditions are more likely to be hospitalized for their asthma than those without food allergy.

The genetic factors that make people more vulnerable to food allergy also put them at risk for other allergies – all of which can set off asthma symptoms or make them worse.

Seasonal colds, flu or sinus infections complicate the picture. Patients should focus on food and environmental allergen avoidance, vaccines and other preventive measures to manage asthma.

Adolescents and young adults with asthma and food allergy face a high risk of death from anaphylaxis.

Eighty percent of life-ending episodes from food allergy occur in people between ages 15 and 30 years. It may be the risk-taking behavior common to that age group or their reluctance to carry epinephrine auto-injectors or tell others about their allergy – or it may be something hormonal.

The key message to parents is to help children understand their food allergy and take ownership of their disease so when they get older and are away from their parents, they know how to manage their condition.

The first line of treatment for anaphylaxis is an epinephrine auto-injector. The second line is an inhaled bronchodilator.

A patient’s anaphylaxis action plan should detail what steps to take to treat a serious allergic reaction. For people with asthma, a bronchodilator may be part of treatment, but epinephrine is always the first treatment to use at the earliest sign of anaphylaxis.

The Bottom Line:

Many people with unrecognized food allergy don’t know it’s playing a part in their asthma symptoms. It’s best to get an evaluation by a board-certified allergist for a possible food allergy.

Any person diagnosed with asthma and food allergies – no matter what the food or how mild symptoms were in the past – must come to understand how to use an epinephrine auto-injector.

Approximately 12 million Americans have a food allergy, including 3 million children. Most are allergic to one of eight foods: cow’s milk, soy, fish, peanuts, tree nuts, shellfish, eggs, sesame.
Exercise and Asthma: Don’t Let It Keep You On the Sidelines

About one in 10 people experience asthma-related coughing or shortness of breath during or shortly after physical activity, whether playing soccer, bicycling, swimming or jogging. Many don’t recognize the problem and simply avoid strenuous exercise. It’s called EIB – exercise-induced bronchospasm.

Airway muscle spasms constrict airflow and cause shortness of breath, coughing, wheezing, chest tightness and fatigue. Often these symptoms are a sign of underlying asthma and lung inflammation.

Come In From the Cold

People with EIB have airways that are very sensitive to sudden changes in temperature and humidity, especially when breathing cold, dry air. Nasal passages act as a mini-sauna for the air we breathe – warming the air and adding moisture – in addition to filtering unwanted particles out. But most people breathe through their mouths when they exercise, allowing cold, dry air (plus allergens and other irritants) to reach the lower airways. Mouth breathing is also common among athletes and patients with stuffy noses from colds, sinusitis and allergic rhinitis.

Other factors can lead to wheezing with exercise, including air pollution, high pollen counts and respiratory infections.

Symptoms of EIB usually appear 5 to 10 minutes after exercise starts or ends.

**Treatment Tips:**
- 15-20 minutes of warm-up exercises and cool-down periods may help minimize symptoms. Asthma symptoms occur due to rapid cooling and rapid warming of lower airways, which causes the airways to constrict. By making a gradual temperature shift, you lessen the chances of airway constriction and thus asthma symptoms.

**Manage With Medications:**

Many doctors prescribe inhaled bronchodilators (medication that opens constricted airways) such as albuterol or formoterol for EIB. Using an inhaled bronchodilator before exercise can help prevent the bronchospasms. These medications can also be used to relieve symptoms when they occur. If you think you have EIB, make an appointment with a doctor familiar with EIB. The doctor will take your medical history and have you perform breathing tests after exercise and while resting.

**Evaluate Your Environment:**

Athletes with EIB should keep exercise to a minimum when other potential asthma triggers are present (for instance, when an athlete has a viral infection, when it’s cold outside or when pollen and air pollution levels are high). Schedule your outdoor exercise during times when pollen counts are low. Breathing through the nose or wearing a scarf or mask during cold weather may also help by warming the air you inhale and filtering out allergens.

Some activities are better than others for people with EIB. Swimming is often a good choice because it’s done in a warm, humid environment, plus the horizontal position may help move mucus from the bottom of your lungs. But if you are sensitive to chlorine, try walking, leisure hiking or bicycling – these forms of exercise can be paced more readily than vigorous activities.

Get Up and Go

If you have exercise-induced bronchospasm (EIB), or have been diagnosed with chronic asthma and know that exercise is one of your triggers, treatment and prevention are the keys to getting in the game.

“Warming up, cooling down, hydration and pre-treatment with albuterol will help the body function better whether your EIB is caused by asthma or not,” says Timothy J. Craig, DO, vice chairman of the Asthma Diagnosis and Treatment Committee of the American Academy of Allergy, Asthma & Immunology. “And always keep your albuterol with you during exercise, in case you need it.”

Staying hydrated can also minimize symptoms. “It’s the dryness of the airway that causes EIB, which is more prevalent in cold, dry weather,” Craig says. “Control your allergies and rhinitis since the humidity provided by your nose may decrease dryness of your lower airway.”
Healthy Home Guide

People spend more time indoors these days, so breathing healthy air in your home is critical. Indoor allergens and irritants can come from many unlikely places. James Sublett, MD, of the American College of Allergy, Asthma & Immunology, offers these tips to help families eliminate asthma triggers in the home. Make healthy air your goal!

**Say no to smokers.** Environmental tobacco smoke, or secondhand smoke, is a major indoor pollutant. Set a no-smoking policy both inside and around your house. Smoking is a major health issue for everyone.

**Monitor moisture.** Too much humidity makes your home a playground for mold and dust mites. Too little can irritate inhaled airways. Meet in the middle with a goal of 50 percent household humidity. An instrument called a hygrometer will measure your humidity level. Keep bacteria and mold under control by cleaning dehumidifiers and humidifiers regularly.

**Move out mold.** Use exhaust fans in bathrooms and vent outside to keep humidity low and make these areas less friendly for mold. Check for leaks around pipes, another common cause of mold growth. Potted plants and stacks of magazines and books can hold moisture and create new homes for mold. Limit them—particularly in bedrooms. Empty clothes hampers regularly and avoid putting wet clothes or towels in them. If you find mold forming in bedroom closets, leave a light on to help dry it out and look for the source of moisture. Hardware stores sell moisture meters to trace water leaks and mold.

**Create ‘no vacancy’ for pests.** When the weather turns cold, cockroaches, mice and other household pests move indoors too, bringing allergens that can cause asthma and allergy flare-ups. Seal cracks around pipes and windows. Remove boxes, newspapers and other pest hiding places. Don’t leave garbage out, and clean dishes and food and drink spills right away. Avoid using pesticide sprays, which can irritate sensitive airways.

**Put a wrap on dust mites.** One of the mainstays of dust mite diets is skin flakes, and your bed is full of them. Encase pillows and mattresses with allergen covers to put a barrier between you and dust mites. This will protect you from mites inside your pillow or mattress; wash encasements as instructed to get rid of mites living on the outside of your encasements.

**Nix noxious gases.** Gas stoves, fireplaces and heaters can leak nitrogen dioxide (NO₂), irritating eyes, nose, throat and lungs. Gas appliances must vent outside. Install an exhaust fan above your stove, vent outside and maintain gas appliances according to the manufacturer’s recommendations to reduce NO₂ emissions.

**Put a spin on clothes.** Clothing dryers produce moisture, too. Clean the dryer hose and be sure the outside vent keeps moisture from building up in your laundry area. After washing a load of laundry and removing, leave the washer door open to thoroughly dry the inside.

**Upgrade your filter.** The filter that comes with your HVAC (heating, venting and air conditioning) system isn’t designed to help you breathe better—it just keeps dust and debris from clogging up the working parts of your system. Improve the quality of the air you breathe and take your HVAC system up a notch with a high-efficiency MERV 11 or higher-disposable filter. Measure before you buy—a good fit is critical to air quality or an attached air cleaning unit. The filters should be changed at least every three months; your furnace and air conditioner unit should be serviced at least once a year.

**Solve the carpet conundrum.** Carpets are a favorite living area for dust mites and other allergens. If you can’t remove carpets, vacuum them regularly and steam clean once a year to minimize allergens and the skin cells that dust mites feed on. Vacuuming won’t suck out the dust mites themselves—they have barbs on their legs to cling to carpets and soft furnishings; plus, gravity keeps allergens and irritants permanent embedded. Use a vacuum with a HEPA (high-efficiency particulate air) filter to prevent vacuumed allergens from escaping into the air. Central vacuum systems that are vented outdoors may also help. Also, do not eat in carpeted areas.

**Stop idling around the house.** Don’t warm up your car in the garage or near the house—carbon monoxide (CO) from the car exhaust seeps into the house. Even at low levels, CO can cause respiratory problems. Buy a CO detector for the bedroom areas of your home (one on each floor is even better) and watch for changes in CO levels for an early warning before carbon monoxide levels become dangerous.

**Snuff out candles.** Candles produce a double whammy. Fragrances often irritate sensitive airways and their burning can produce soot, smoke and other airborne irritants. Potpourri can contain mold spores in the dried flowers and leaves. And burning incense can generate irritants and carbon monoxide. Keep a flashlight handy if you need light during a power outage and rethink air freshening strategies.
Indoor Air Cleaner Basics

When indoor air is compromised due to allergens, a portable room air cleaner may be helpful for those with asthma and allergies. No air cleaner can do it all. They will only help clean air in one room, not the entire house. Cleaning up indoor air is a multi-step process, and first you must eliminate the source of the allergen, whether it’s mold, dust mites, pet dander or insects. Air filtration is one of several ways to remove indoor allergens from your home.

How Do Air Cleaners Work?
The Environmental Protection Agency (EPA) describes three kinds of air cleaners:

- **Mechanical air cleaners** use flat or pleated-surface filters to sift particles out of the air or capture them with charged plastic film. Look for HEPA (high efficiency particulate air) filters for best results. To filter out gases, look for HEPA air cleaners with an adsorption filter.
- **Electronic air cleaners** use an electric field to trap charged particles on a washable collector plate.
- **Ion generators** use a static charge to remove particles from the air. Ions attach to the particles, charging them so they will stick to nearby surfaces such as walls, floors, draperies—even people—or attach to one another and settle out of the air. Some ion generators collect charged particles.

Never buy ozone-generating air purifiers. According to EPA, ozone is a respiratory irritant and may actually worsen allergy and asthma.

What is HEPA?
A HEPA rating indicates filters will remove at least 99.97 percent of airborne particulates that are 0.3 microns in size or larger. That includes many of the particles affecting people with allergies and asthma, such as pet allergens, pollen, mold spores and bacteria.

Look for air cleaners labeled true HEPA or genuine HEPA filtration; filters labeled HEPA-like aren’t the real thing.

Before You Buy
The effectiveness of an air cleaner depends on how much air it pulls through the machine and how well it removes particles that pass through it. The air cleaner won’t grab dust mites or pollen trapped in your carpet, dander from pets on your bed, or smoke particles in your drapes. Choose a HEPA unit based on the following:

- **Room size:** Measure the size of the room, then find one to fit your needs.
- **Noise:** Try it out at the store or make sure you can return it if the noise level is disturbing at home.
- **Ease of use:** Is the filter difficult to replace without releasing particles back in your air? Is it light enough for you to move?
- **Odor:** If the cleaner has a separate filter for gases, check the ingredients—zeolite or activated alumina may be less irritating to sensitive airways than activated charcoal, which can be dusty.
- **Cost:** Check the price of replacement filters and how frequently they need to be changed. Add in shipping costs if filters are not available locally.
- **Guarantee:** Look for companies that offer a money-back return policy and read the fine print on the return policy.

Dust Mites
Dust mites are invisible to the naked eye—you can fit about 50 on the head of a pin. How do you get rid of something too small to see?

- **Hang ’Em Out to Dry.** Dust mites need two things to live: water (drawn from humid air) and food (your skin). You can’t do much about skin you shed each day, but you can adjust the humidity in your home. Control humidity with exhaust fans, dehumidifiers and air conditioning. Keep humidity around 50 percent.
- **Nix the Nests.** Removing carpets, drapes and upholstered furniture controls your home’s dust mite population by eliminating their homes. Focus on rooms where you spend the most time, such as bedrooms.
- **Put Up Barriers.** Covering mattresses and pillows prevents mites from getting into airways because they can’t get through tightly woven encasings.
- **Wash ’Em Away.** Bedding should be washed weekly to decrease dust mite allergen levels, and very hot water is not necessary during the wash cycle.

Cockroaches
Hundreds of cockroaches may live in a colony. If you see one, it’s a safe bet that many more are lurking out of sight.

- **Do It Yourself.** Minor home improvements can improve your chances of keeping cockroaches out. Caulk cracks or gaps around piping, fix water leaks and improve ventilation to damp areas.
- **Keep a Lid on Food.** Store food in airtight containers or in the refrigerator. Minimize trash kept inside the house, wash dishes immediately after you use them, and eliminate piles of newspapers and magazines that are hiding spots. Rinse bottles and cans before you toss them in your recycling bin and take out recycling at least once a week.
- **Make a Clean Sweep.** If you have an infestation, you may need very aggressive cleaning to get rid of their allergens. Ordinary household cleaners are usually very effective.

And Finally…

- **Make a Commitment.** Reducing exposures to dust mites and cockroaches is reasonable and may reduce need for medications. Make these home measures a priority and part of your routine.
MANAGING YOUR CONDITION

5 Building Blocks for Better Breathing

A healthy, active life with asthma for you and your family is within reach. Getting there begins with a thoughtful, personalized evaluation from your health care team about what’s causing your symptoms and how they can be prevented. It continues with a plan of action that fits your family, lifestyle, and budget.

Every person’s asthma is different so don’t settle for a one-size-fits-all treatment. Look closely at the following five building blocks to asthma control. What changes do you need to make to meet your goal?

1 Become an active player on your health care team. Your team has the knowledge and tools to interpret your symptoms and develop an Asthma Action Plan. Set a schedule of regular asthma checkups so they see you when you’re feeling good as well as when you’re having problems. Discuss what is working and what isn’t. Ask them to watch how you use your inhaler, to make sure you’re doing it correctly. Ask whether a valved holding chamber or spacer would help. Make sure you understand everything in your Asthma Action Plan.

2 Know your triggers. Identify and avoid the allergens and irritants that bring on your asthma flares. Does exercise set off coughing and wheezing? There are solutions to most problems. Discuss them with your health care team.

3 Know your medications. Take some time to learn why each is important for your lungs, and you’ll understand how they fit into your treatment plan. Remember: It takes more medication to put out an asthma flare than to prevent it. As your asthma health improves, talk with your health care team about gradually decreasing your medication schedule or dosage. Never stop or change any of your prescribed medications without thoroughly discussing with your health care team. Bring these medications with you on every visit to the doctor’s office.

4 Know your body. Any change in your health can affect your asthma. Flares don’t just happen. There are subtle and not-so-subtle warning signs. Your health care team will teach you what to look for and exactly what to do, following your Asthma Action Plan. Let them know immediately about any other health problems you develop.

5 Live healthy. Healthy living keeps your body energized and your immune system working. That will mean better breathing. Many choices are yours: No smoking or exposure to smoke; nutritious eating habits; regular exercise; healthy sleep patterns; and age-appropriate vaccinations including an annual flu shot.

Your Score

7 correct: You’re fluent in the Language of Asthma! Now tell your medical care team what you learned.

4-6 correct: You need another language class. Review this publication again and retake the quiz.

1-3 correct: Go over this quiz with your health care professional to learn the terms, then retake the quiz.

Language of Asthma™ Quiz

Match these terms to their meaning, then check the answers to see how you did!

1. Inhaled corticosteroid
2. Bronchodilator
3. Holding chamber
4. Metered-dose inhaler
5. Peak flow meter
6. Asthma Action Plan
7. Daily symptom diary

A. Lists vital instructions, medications, triggers and management tools
B. Measures how fast you can push your breath out, in liters per second
C. Reduces and prevents airway swelling
D. Tracks your progress every day
E. Traps and suspends aerosol medication while you slowly inhale
F. Pressurized medication delivery system
G. Relaxes the muscles around your airways

Correct answers: 1-c, 2-g, 3-e, 4-f, 5-b, 6-a, 7-d.
Breathe Better Together!

Allergy & Asthma Network engages, educates and empowers families to win over allergies and asthma.

Since 1985, it’s been our mission to end needless death and suffering due to asthma, allergies and related conditions.

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