

TEENS ON COURSE™

IT'S ALL ABOUT ASTHMA

REAL ISSUES
REAL ANSWERS®



INFLAMMATION
STATION

CAUTION

ATCHOO!

DUST

MEDICINE

ALLERGENS

O₂

AIR

HARD
BREATHING AHEAD!

DRIVER'S LICENSE

DO YOU HAVE ASTHMA?



YOU

We have answers and all the info on your real life breathing situation. The best way to stay on top of your asthma is to be armed with what you know. It's your breath, your health and your life so read up and carry on. It's a big wide world out there and you should be a part of it all. If you take care of that asthma, you CAN be part of it all!

DISCLAIMER. This book provides general information about various teen-related issues. This information is not intended to be used as a solitary reference on the subject matter, for the diagnosis or treatment of a health problem, or as a substitute for consulting a licensed health care professional. Consult with a qualified health care practitioner to discuss specific individual issues or health needs, and to professionally address personal, emotional, health, physical or medical concerns.

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REAL ISSUES
REAL ANSWERS®

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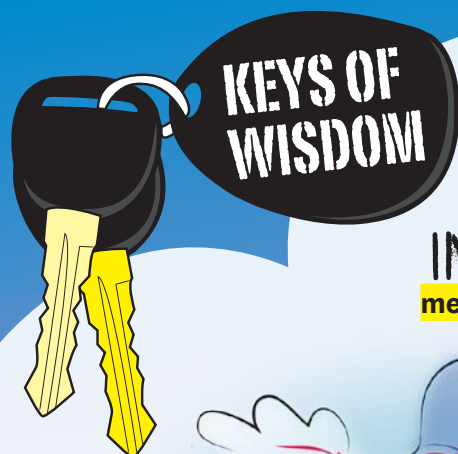
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THE BASICS OF BREATHING

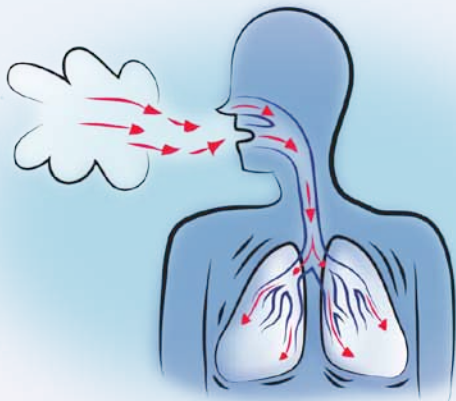
AIRING IT OUT

Breathing brings fresh air into your lungs and gets rid of the bad air. So it's kind of important to be able to breathe clearly. Okay, it's really important. Each breath you take delivers essential oxygen to your bloodstream. Here's what happens each time you breathe:

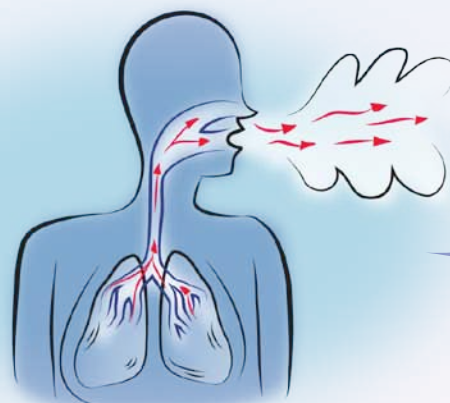
1. Fresh air comes into your body through your mouth or nose, down your throat and into a large airway. Then it branches into smaller and smaller tubes inside your lungs. Special muscles relax and contract.
2. These small tubes lead into balloon-like pouches called **alveoli** that expand and contract as you breathe. The oxygen fills these balloons and then moves into the bloodstream.
3. Your heart pumps the oxygen-rich blood through your arteries to all of your organs.
4. Some of the stale old oxygen leaves the organs and is carried by the blood.
5. When you exhale, the stale waste air leaves your body.



INHALING
means breathing in.



EXHALING
means breathing out.



breathing.com/articles/basics.htm

ASTHMA: FUNNY WORD, SERIOUS CONDITION

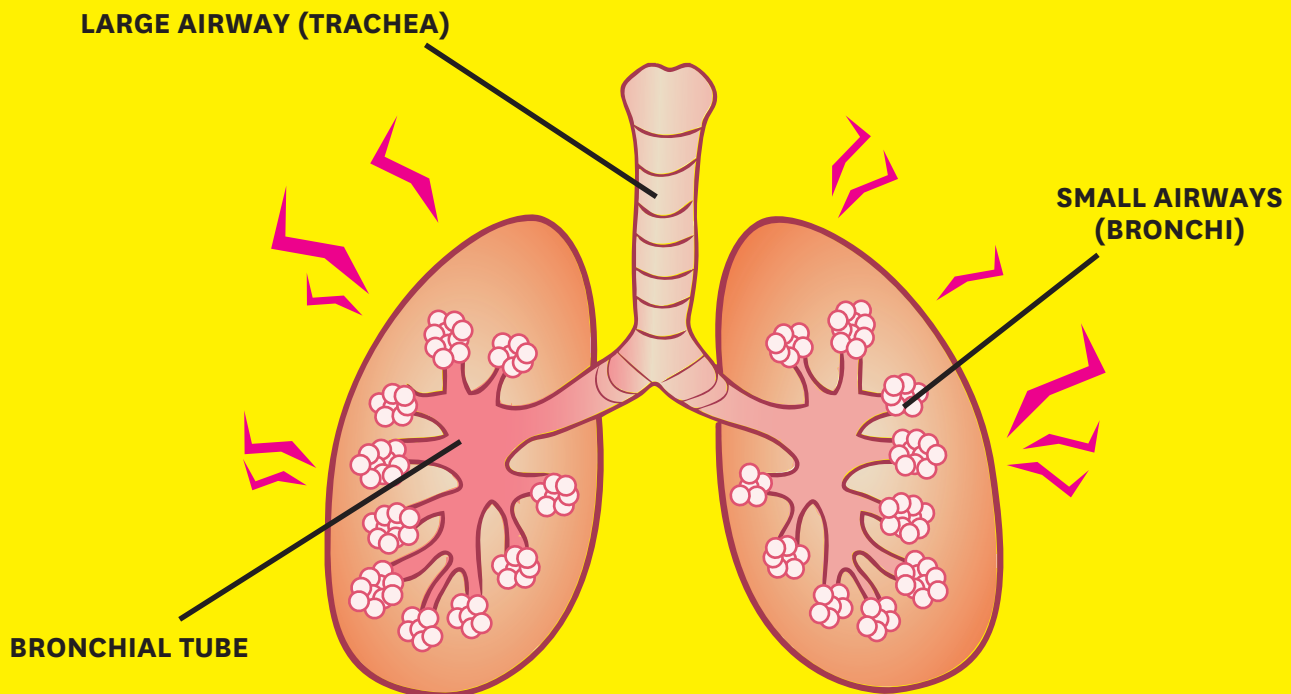
PREPARING FOR THE ATTACK

SENSITIVE TUBES

Remember those breathing tubes and airways we just mentioned? Asthma is a disease that affects those tubes and makes breathing difficult. People with asthma have sensitive breathing tubes. Sometimes everyday stuff in the air can irritate those tubes and bring on an asthma attack.

WHAT HAPPENS DURING AN ASTHMA ATTACK

- The breathing tubes in the lungs become swollen (**INFLAMMATION**)
- The muscles surrounding the airways get tighter (**BRONCHOCONSTRICTION**)
- The smaller breathing tubes become clogged with excess mucus



These changes slow down the flow of air into and out of the lungs, making it hard to breathe. Have you ever blown air through a garden hose? Have you ever blown air through a soda straw? Big difference in the amount of air that passes through those different sized tubes. An asthma attack can be like trying to blow through a straw clogged with ice cream.

OUR AMAZING LUNGS!

- The total length of the airways running through the lungs is 1,500 miles.
- The left lung has two lobes and is a little smaller than the right lung in order to make room for the heart. The right lung has three lobes.
- The lungs are the only organs in the body that can float on water.
- We're born with pink lungs. They get darker as we breathe in polluted air.
- Every day you take about 22,000 breaths.



SYMPTOMS OF AN ASTHMA ATTACK

- Wheezing or whistling sound
- Coughing, spitting up mucus
- Tightness in the chest
- Shortness of breath

It may feel like you can't get enough fresh air into your lungs, but during an attack, the breathing tubes become too small to let out the stale air.



asthma.com

WHAT ARE THE CAUSES OF ASTHMA?

GOOD QUESTION.

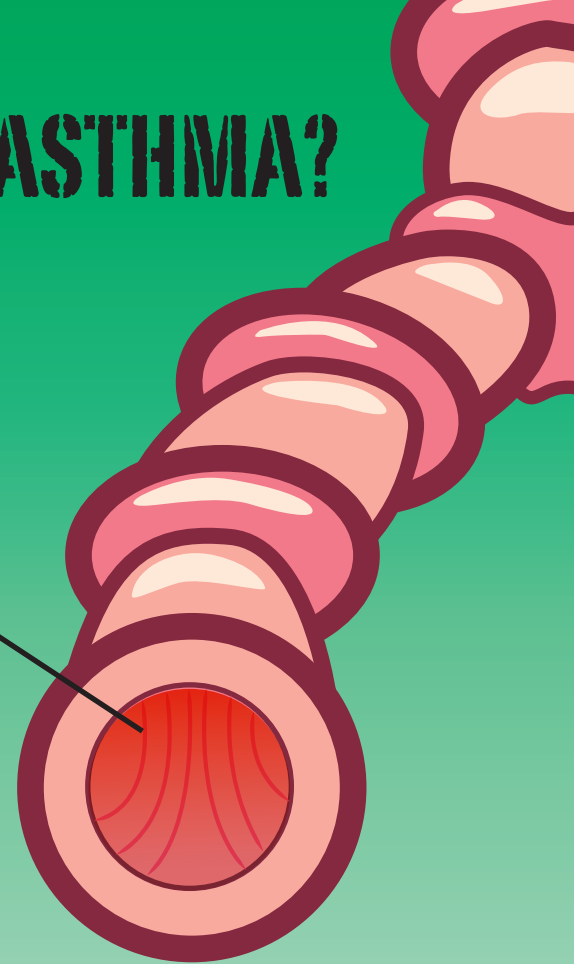
THE SHORT ANSWER

We don't really know the cause of asthma. Sorry. But we do know many of the risk factors that can cause an asthma attack. Allergies and family history are two of the big ones.

ALLERGIES

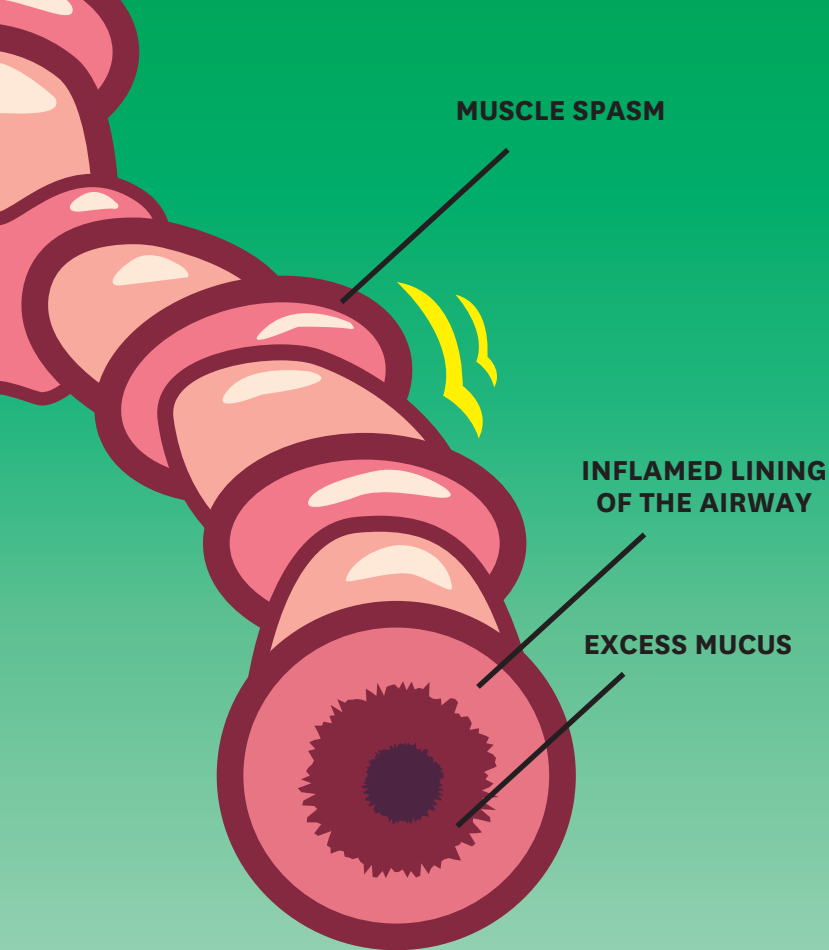
The American Lung Association estimates that at least 80 percent of children and 50 percent of adults with asthma have allergies.

NORMAL AIRWAY



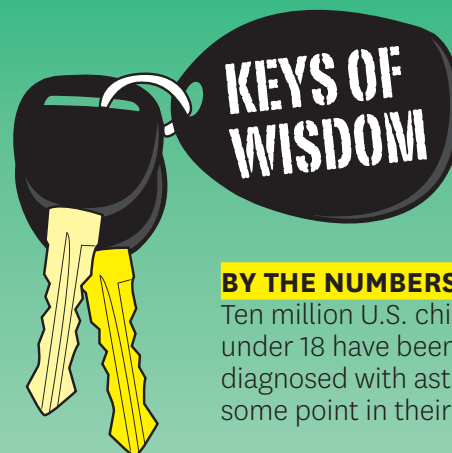
MISSION: DEFINITION

Allergy: An allergy is an abnormal reaction in the body to an object (allergen) encountered through breathing, eating, injecting or by skin contact. Allergies can produce itchy eyes, runny nose, wheezing, skin rash or diarrhea.



FAMILY HISTORY

If your parents have asthma, you are 40 percent more likely to develop it. Experts have linked a strong family history of asthma with its development.



BY THE NUMBERS

Ten million U.S. children under 18 have been diagnosed with asthma at some point in their life.



Asthma Statistics:

aaaai.org/media/statistics/asthma-statistics.asp

?? ? TYPES OF ASTHMA ? ? ?

WHICH ONE DO YOU HAVE?

ALLERGIC ASTHMA

An allergen can be a common, everyday substance like dust, animal dander, plant pollen and mold spores. These allergens can irritate people with allergies and cause harmful reactions. One of these reactions can be an asthma flare-up. A doctor can run tests to determine what objects you're allergic to.

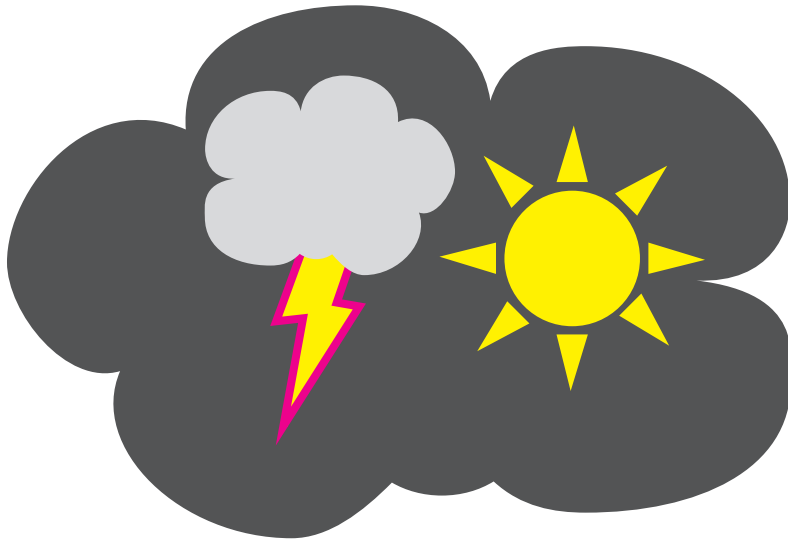
Some common symptoms of allergies are:

- Itchy, watery eyes
- Sneezing
- Stuffy or runny nose
- Headache
- Dark circles under the eyes



MISSION: DEFINITION

Immunotherapy: A treatment or plan to reduce allergy symptoms that often includes allergy shots or medication. This treatment allows a person to gradually build up immunity to the allergen.



SEASONAL ASTHMA

Sometimes changes in the weather can trigger an asthma attack. It may be the microscopic pollen or mold in the air during certain times of the year that affect people with seasonal asthma. For others, it may be that they're sensitive to the cold air in winter or heat and humidity of summer. There are certain asthma medications to take which prevent allergies and attacks. Take them at the beginning of the season that most affects you and then throughout the season, as your doctor prescribes.

NON-ALLERGIC ASTHMA

Some people have non-allergic asthma. No allergies. Cool, right? Nope. They may suffer the same symptoms as allergic asthma but they're sensitive to other things, such as:

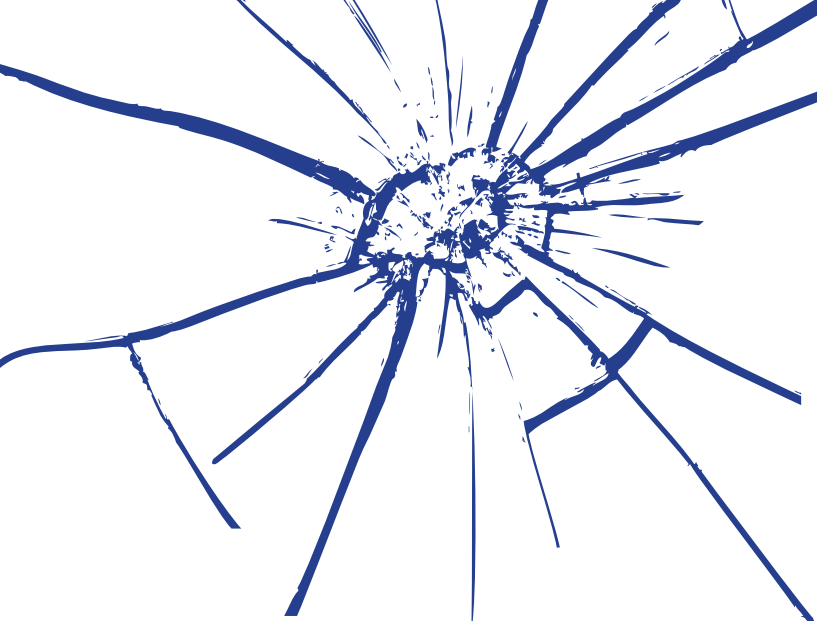
- **Smoke**
- **Emotional stress**
- **Changes in the weather**
- **Respiratory (breathing) infections**

Again, your doctor can run tests to find out what triggers your asthma. You can help by tracking the things you come in contact with and what symptoms they produce. Make a list. Keep a chart. Figure it out.



EXERCISE-INDUCED ASTHMA

People with either allergic or non-allergic asthma may suffer from exercise-induced asthma. When your body gets active, changes in temperature and humidity can trigger attacks. The cold air that enters your airway during exercise irritates the sensitive tubes. Shortly after exercising, you might begin to feel the symptoms.



REALITY CHECK

Having asthma is not an excuse to blow off exercising! It's still important for people with the disease to stay active and physically fit.



Exercising regularly helps build strong bones and muscles, and fights off infection. Work with your doctor to develop an exercise and treatment program. Here are some tips to remember when exercising:

- **You may need to take your asthma meds before engaging in physical activities.**
- **Don't exercise on days when your asthma is not under control.**
- **Don't exercise outside on high pollen count days or in high pollution conditions.**
- **Exercise at your own pace.**
- **Don't exercise in extreme hot or cold weather.**
- **Warm up and cool down before and after you exercise.**
- **Try different types of physical activities. You may have more success with swimming than running.**

NOCTURNAL ASTHMA

Nocturnal means “occurring at night,” so people with this type of asthma feel the symptoms worsen late in the day. Our bodies make certain hormones during the day that protect against asthma. But at night, those hormones turn off and you’re left without a bodyguard against attacks. Other factors that can make asthma symptoms more severe at night include:

- **A runny nose or sinus infection**
- **Acid reflux from your stomach into your esophagus**
- **Allergens in your bedroom**
- **A late reaction to something you were exposed to earlier**
- **Cool nighttime air**



If you notice you’re having more asthma symptoms at night than during the day, talk to your doctor. He or she can adjust your medication and get you sleeping better.



WebMD: Exercise and Asthma:
webmd.com/asthma/guide/exercising-asthma

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TRIGGER HAPPY

Sensitive airways. That's the major malfunction for people with asthma. Things that don't affect most people can cause real breathing problems for those with asthma. These substances that cause breathing problems are called triggers. And there are two kinds of asthma triggers:

ALLERGENS: Substances that can cause your allergies to kick in. They trigger your breathing tubes to swell and excess mucus to build up and clog the airways.

IRRITANTS: irritants are not allergens, but something that can bother your breathing tubes and trigger asthma symptoms. More on irritants later.

CAUTION!
DANGER OUTSIDE!

POLLEN AND MOLD

You can't see these floating in the air, but if you're around trees, flowers, grass and weeds, chances are pollen and mold are there too. It's just about impossible to avoid these allergens entirely, but here are ways you can reduce your exposure:

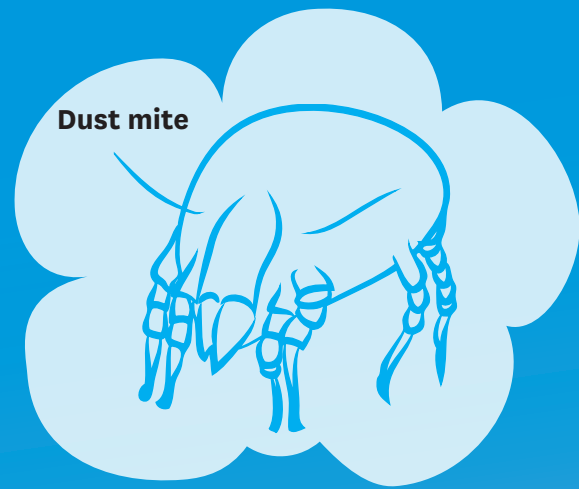
- **Pay attention to local allergen reports. During a pollen alert, when the pollen count in the air is high, stay inside, close doors and windows and use the air conditioner.**
- **Stay away from sources of mold, like wet leaves, fallen wood and puddles of water that won't drain.**
- **Wear a breathing mask when doing yard work.**
- **Take a shower and wash your hair after outdoor activities.**

DUST AND DUST MITES

Just when you thought it was safe to stay indoors, there are more unseen problems lurking about. House dust contains:

- **Tiny pieces of fabric**
- **Particles of food**
- **Flakes of skin**
- **Protein from plants and animals**

Dust mites feed off this stuff in order to survive. So, what's a dust mite?



MISSION: DEFINITION

Dust mites: Microscopic bugs that live mainly on dead skin cells shed from humans and their animal pets. Dust mites don't carry diseases and they are usually harmless to most people, but can cause allergic reactions in people with asthma.

You can minimize the threat of dust mites by washing bed linens weekly in hot water, using a wet mop or damp cloth to keep your house dust-free, and by vacuuming once a week. Suck up those things and they won't bother you anymore.



WHAT CAN HOUSE DUST CONTAIN?

- cigarette ash
- fibers
- wool
- cotton
- paper
- silk
- fingernail filings
- food crumbs
- glass particles
- glue
- graphite
- human and animal hair
- insect fragments
- oil soot
- paint chips
- plant parts
- pollen
- polymer
- foam particles
- salt and sugar crystals
- skin scales
- soil
- spores
- stone particles
- tobacco
- wood shavings

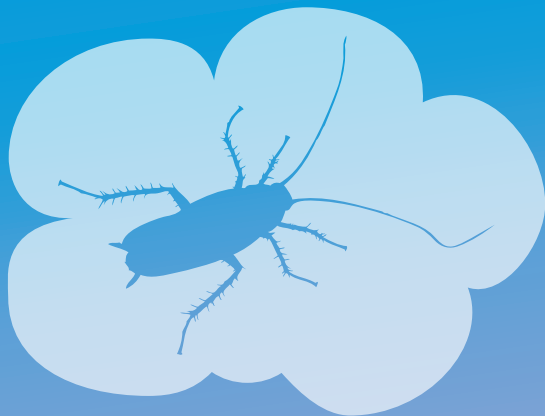
OTHER INDOOR ALLERGENS

Animals

Pets such as dogs, cats, birds, hamsters or gerbils may be loyal and loving members of your family. But they may also be the cause of your asthma attacks. Allergens in their fur or feathers, or proteins in their dander, saliva or urine could act as triggers.

Solutions:

- **Find a new home for your pet or keep it outdoors.**
- **Keep the pet out of your bedroom or areas where you hang out a lot.**
- **Bathe your pet once a week.**
- **Vacuum your floors regularly.**



Cockroaches

The protein in cockroaches' waste is the big problem for people with asthma. Eliminate cockroaches and you can eliminate some asthma attacks. Cockroaches love food and water left out, so clean up crumbs, don't leave old food sitting in your room and dump water or other leftover drinks into the sink. They also love humid air, so use your air conditioner in the summer to lower humidity levels.

COCKROACH CANCELLATION CHECKLIST

- **Seal areas where cockroaches can enter your house.**
- **Fix all leaky water faucets and pipes.**
- **Hire an exterminator to spray your house, especially if you're going away for a while.**
- **Wash dishes immediately after eating.**
- **Vacuum and sweep all floors.**
- **Take out the garbage frequently.**

INDOOR MOLDS AND MILDEW

Molds and mildew live and grow in areas of your house that are damp and humid. They release tiny spores into the air that can irritate your airways and trigger an attack.

So...

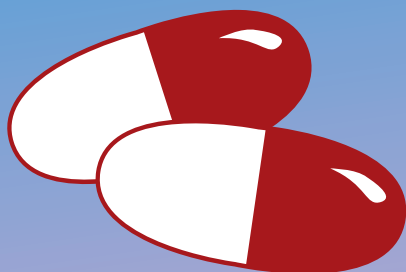
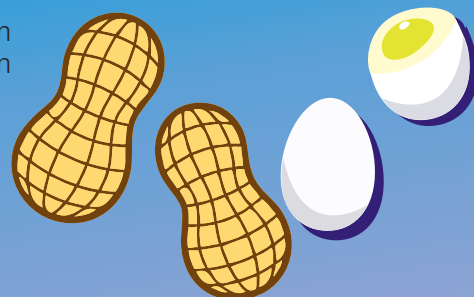
- **Get rid of the moisture in your home. Control water leakage and dampness.**
- **Use a dehumidifier to keep indoor humidity to less than 50 percent.**
- **Clean bathtubs and sinks three to four times each week.**
- **Clean the drip pan under the fridge once a month.**
- **Clean out the garbage can with a mild detergent.**
- **Get rid of indoor plants.**
- **Make sure your clothes dryer vents to the outside.**
- **Clean the inside and outside of your air conditioner.**

FOODS

Although food allergies are rare, children can suffer from them. Some allergens in food can be found in cow's milk, eggs, peanuts, soybean products, shellfish, corn and wheat. These food allergies can trigger asthma attacks.

So...

- **Avoid foods you know you're allergic to.**
- **Read the labels and check carefully for allergens.**
- **Avoid processed foods and stick with natural, organic options.**



MEDICATIONS

While most commonly prescribed medicine treats problems effectively, some can worsen your asthma symptoms. Read the labels of over-the-counter meds and don't take those with known allergens. Make sure your doctor and pharmacist know of your allergies. It's a smart idea to carry a list of your medication allergies with you.



Dust Mites: Everything You Might Not Want to Know!

ehso.com/ehshome/dustmites.php

FARE: Food Allergy Research & Education
foodallergy.org



IRRITANTS

GETTING TO THE SOURCE
OF THE PROBLEM

THAT IS SO IRRITATING

Remember earlier we stated that irritants are not allergens, but rather substances that can bother your breathing tubes and trigger asthma symptoms? Here are some of the sources that make up irritants for asthma sufferers.

AIR POLLUTION

People with asthma are more sensitive to both indoor and outdoor sources of the unclean air called pollution. Pollution comes from traffic, high ozone levels, smoke, gases and fumes.

KEYS OF WISDOM

HOW TO BEAT THE THREAT OF AIR POLLUTION

- Stay indoors when it's smoggy outside or when nearby traffic is heavy.
- Stay away from areas with heavy industry or power plants.
- Avoid pumping gas, and roll up your windows at gas stations to avoid breathing the fumes.
- Don't use kerosene heaters, and keep away from wood-burning stoves and fireplaces.
- Always use exhaust fans in the kitchen while cooking.
- Make your house a strict NO SMOKING zone.
- Stay away from places where smoking is permitted.

STRONG ODORS

Strong smells are often offensive even to people without asthma. Imagine what asthma sufferers have to face when challenged with a strong whiff of perfume, aftershave, cologne or cleaning products. Avoid aerosol sprays and use solid deodorants and liquid or gel hygiene products. Make it a point not to use cleaning products like ammonia, chlorine bleach, mothballs and other products with strong odors.

CHANGES IN THE WEATHER

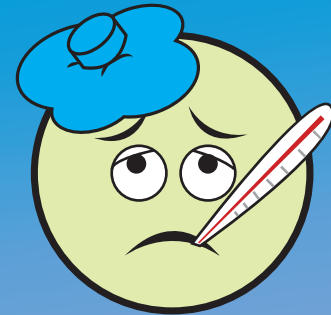
Wear a scarf or mask over your mouth and nose during cold weather, and don't exercise or work outdoors during times of extreme heat. Changes in weather conditions, temperature and humidity can trigger a reaction in people with asthma.

INFLUENZA (FLU)

Watch out for the symptoms of this easily-spread illness:

- **Fever**
- **Achy muscles**
- **Weakness and tiredness**
- **Sore throat and cough**

If you're an asthma sufferer and you catch the flu, you're more likely to experience asthma symptoms and lung infections. Get a flu shot each year in the early fall. Contact your health care professional at the first sign of the flu.



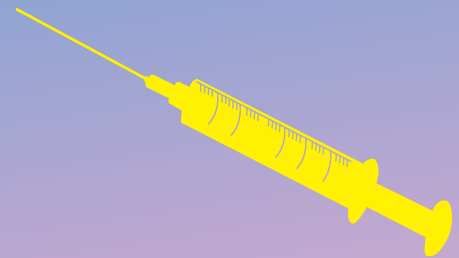
ACUTE BRONCHITIS

There's nothing cute about acute bronchitis. Catch it and your lower breathing tubes will swell and cause a painful cough, wheezing and shortness of breath. Antibiotics aren't effective against the sickness. You have to ride it out and let the infection run its course.

PNEUMONIA

The bad news: You're more likely to develop pneumonia if you have asthma, especially in the winter. Pneumonia makes your breathing tubes swell, fill with mucus and restrict airflow. Fever, shortness of breath and a lot of mucus are symptoms of pneumonia.

The good news: A pneumonia shot from your doctor can protect you from many of the causes of this disease for several years.



Asthma and Allergy Foundation of America: What Causes or Triggers Asthma?
aafa.org/display.cfm?id=8&cont=6

National Center for Biotechnology Information: Influenza burden for children with asthma
ncbi.nlm.nih.gov/pubmed/18166550



SMOKING AND ASTHMA



A DEADLY COMBINATION

SMOKING = BIG PROBLEMS

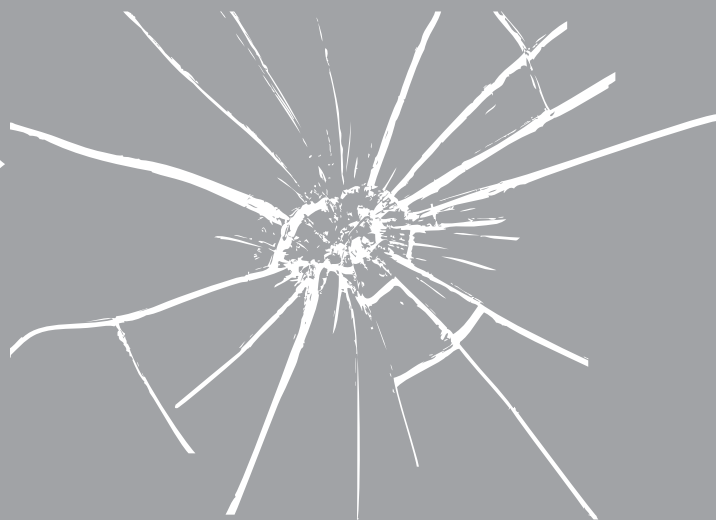
Smoking cigarettes is never a good idea. It can lead to several serious diseases and death, it makes everything look and smell bad and it's an expensive habit. Smoking is hazardous even for people without asthma, so imagine what it can do to someone with a breathing problem.

THE ASTHMA FACTOR

Smoking is extra risky if you have asthma because of the further damage it can do to your lungs. Smoke irritates the airways, making them swollen, narrow and mucus-filled, just like during an asthma attack. Smoking increases the chance for coughing, wheezing and shortness of breath, which can be more intense than normal and even harder to control.

REALITY CHECK: WHAT SMOKING CAN DO TO SOMEONE WITH ASTHMA

- Cancel out the effectiveness of controller medicine
- Cause him/her to use rescue medicine more often
- Increase coughing at night and affect sleep
- Affect the ability to play sports or be active
- Send him/her to the emergency room with a severe asthma attack





E-CIGS AND ASTHMA

Electronic cigarettes, vapes, e-hookahs, e-cigs—whatever you call them—are electronic “cigarettes” that allow you to “smoke” without actually smoking, at least not in the traditional sense.

E-cigs are made up of a liquid-filled cartridge, a heating element, and a battery to make the whole thing work. There is no tobacco in an e-cig. Instead, nicotine is included in the cartridge, along with other chemicals like propylene glycol, which is a solvent found in antifreeze!

E-cigs seem like a safe alternative to smoking cigarettes or quitting them, right? Wrong. Unlike cigarettes, nobody is regulating e-cigs. This is important because nicotine can really hurt you—even kill you—if you take in too much. Without standards, it’s easy to overdose. And, while the FDA (the Food and Drug Administration) says small amounts of propylene glycol are safe, nobody knows the effects of its long-term use.

E-cigs aren’t a substitute for smoking tobacco products, and they aren’t a good option if you’re trying to quit.



JUST QUIT IT

There really are no good reasons for smoking, especially if you have asthma. If you’re a smoker and are committed to quitting, you don’t have to do it by yourself. Find people who will help you kick the habit. Ask your doctor about medication or strategies that can take away the craving to smoke. You’re stronger than any bad habit. Don’t let a bad habit control who you are as a person.



THE FATAL FACTS ABOUT SMOKING

- Cigarette smoke contains at least 4,000 chemicals. Many of them are harmful and cancer-causing.
- Smokers are twice as likely to have a heart attack as nonsmokers.
- Smokers are 10 times more likely to develop cancer than nonsmokers.
- Cigarette smoke is harmful to everybody who inhales it, including friends and family members who don't smoke.

QUITTING IS FOR WINNERS

Check out the chart to see how quitting the habit can help you survive.

AFTER 24 HOURS OF QUITTING

Your chances of having a heart attack decrease.

2 WEEKS TO 3 MONTHS AFTER

Your blood circulation improves and your lung function increases by up to 30 percent.

1 TO 9 MONTHS AFTER

Your lungs get stronger and can fight infection better. Coughing, sinus infection, tiredness and shortness of breath decrease.

5 YEARS AFTER

Your risk of a stroke is reduced to that of a nonsmoker.

10 YEARS AFTER

Your risk of death from lung cancer is half that of a smoker.

15 YEARS AFTER

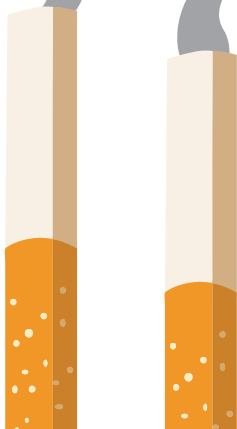
Your risk of heart disease is that of a nonsmoker.



MONEY FOR NOTHING: THE COST OF SMOKING

Want to blow about \$1,000 on nothing? Pay for cigarettes for a year! That's about the average cost to support a cigarette habit for a year. Wouldn't you rather have that kind of cash for:

- \$ **Date money**
- \$ **Video games**
- \$ **New clothes**
- \$ **Handbags and accessories**
- \$ **New shoes and sports equipment**
- \$ **Movies, malls, amusement parks**
- \$ **Gas to get places**



Teen's Health: Smoking and Asthma

kidshealth.org/teen/drug_alcohol/tobacco/smoking_asthma.html

smokefree.gov

MEDICATIONS

THE ART OF GAINING CONTROL

CONTROLLER MEDICINES

Your doctor can prescribe medicine to help you breathe easier and control your asthma. These meds can help prevent the symptoms of an asthma flare-up. And that's the plan: Self-manage your asthma by keeping your symptoms from even happening.



A SIDE NOTE ON SIDE EFFECTS

Because over-the-counter medicines (those bought off the shelf at the drugstore, not as a prescription from a doctor) can have serious side effects, it's always important to check with your doctor first before taking them. These meds may include vitamins, herbs, cough syrups and other medications.

MEDICATIONS: WHAT THEY ARE AND WHAT THEY DO

Bronchodilators (bron·co·di·lay·ters)

These relax and open the muscles surrounding the airways. Some are **short acting** (rescue or quick relievers lasting 4-6 hours), some are **long acting** (6-12 hours, not to be used for quick relief of symptoms).

Corticosteroids (cor·tih·co·stair·oyd)

These meds reduce, reverse and sometimes prevent irritation, swelling and mucus buildup in the breathing tubes. The three forms of corticosteroids are **Oral**, **Inhaled** and **Nasal**.

Non-Corticosteroids (non·cor·tih·co·stair·oyd)

These prevent swelling and mucus buildup when you come into contact with a substance that irritates you. The two types of non-corticosteroid meds are **Anti-Inflammatories** and **Anti-Leukotrienes**.



Anti-Histamines (an·ti·hiss·tuh·meens)

These prevent the symptoms of allergies, like itching, sneezing, runny nose and watery eyes.

Expectorants (Ex·pec·tor·ents) and **Mucolytics** (Myoo·co·lit·ix)

These loosen the mucus so that it's easier to cough up.

Cough Suppressants (Sup·press·ents)

These stop the constant dry cough that doesn't bring up any mucus.

**FOLLOW THESE TIPS FOR USING MEDICATIONS CORRECTLY**

- Learn your early warning signs for an asthma attack and take your quick-relief meds as soon as you feel the symptoms.
- Take your doctor-prescribed anti-inflammatory or corticosteroids every day, even when you feel fine. These will decrease the swelling in your breathing tubes. Bronchodilators don't.
- Monitor your med use. If you have to use your quick-relief meds each day or several times in a single day, it's a sign that your asthma may be getting worse. Tell your doctor.

**WebMD: Asthma Medications:**

webmd.com/asthma/guide/asthma-medications





PARTNERS IN CARE

YOUR TEAM NEEDS YOU

ASTHMA ACTION TEAM

Partnering up with your doctor and health care professionals is important for getting the care you need and maintaining your health. Take an active role in your treatment plan and you can keep your asthma in check.

HELPFUL HINTS FOR MANAGING YOUR ASTHMA

- Keep all of your appointments. Write yourself reminder notes and place them where you will easily see them. If you can't keep an appointment, always call to reschedule.
- Make sure you clearly understand your medical condition. Your doctor is there to answer your questions. Don't be afraid to ask them. Speak up!
- Write down questions ahead of time.
- Be honest and tell your doctor about your symptoms.



MANAGING YOUR MEDICINE

Always follow your doctor's instructions when taking meds. If taken incorrectly, medicine can be harmful. Here are tips for managing your medicine:

- Read labels carefully before taking medicine. Always take the right dosage.
- Check the expiration date on the label and throw away any expired prescriptions.
- Report any side effects to your doctor.
- Never share medicine with another person.
- Some meds shouldn't be taken together. Be sure your doctor and pharmacist know which medicines you take to avoid dangerous side effects.

BE PREPARED

Before you see your doctor at your next appointment, write down a list of questions about your medications. Make yourself a list like this one with important questions to ask and write down the answers:

QUESTION	ANSWER
What am I taking?	
Why am I taking this?	
How should I take it?	
How long will I have to take it?	
What are the possible side effects?	
What other drugs or foods may interact with this?	
What symptoms should make me call you right away?	
Should I take it with food or on an empty stomach?	
What should my diet be around this medication?	
Where should I store the medication?	
Should I continue to take all of my current prescriptions?	



How Stuff Works: Managing Asthma Medications:
health.howstuffworks.com/diseases-conditions/asthma/managing-asthma-medications.htm

DAILY MEDICATION CHART

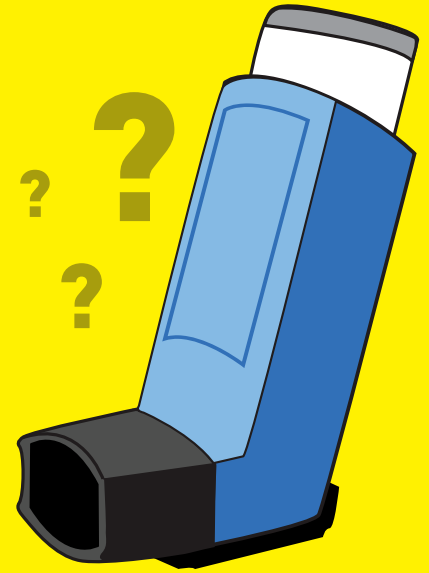
MEDICINE	DOSE	BREAKFAST	LUNCH	DINNER	BEDTIME	AS NEEDED	COMMENTS

THE INS AND OUTS OF YOUR INHALER



MISSION: DEFINITION

Rescue inhaler: A device that gets medicine directly into the lungs in the form of a mist or spray that is inhaled. The medicine works quickly to relieve asthma symptoms by opening the narrow airway.



HOW TO USE YOUR INHALER

1. Shake the inhaler before using. Then remove the cap from the mouthpiece.
2. Open your mouth wide and place the mouthpiece an inch or two from your mouth.
3. Tilt your head back slightly, keeping your mouth wide-open.
4. While taking a slow, deep breath through your mouth, press down one time on the canister.
5. Close your mouth.
6. Hold your breath for 10 seconds if you can.
7. Open your mouth slightly and breathe out slowly.
8. Wait two to three minutes before repeating the dose.
9. Replace the cap on the mouthpiece after your final puff of medicine.
10. Rinse your mouth with water to avoid irritation to your throat and mouth.

NOTE: Some inhalers used for asthma are breath-activated. For this type, you need to place your lips tightly around the mouthpiece for the inhaler to work properly.

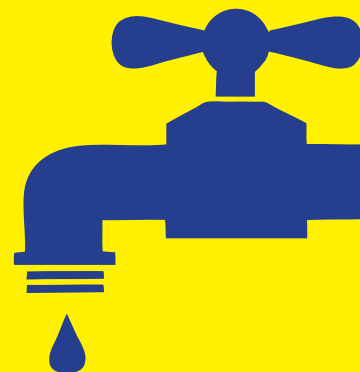
HOW TO TAKE CARE OF YOUR INHALER

First, never store your inhaler in places of extreme temperature, like your car's glove box or in your refrigerator. Make sure you clean it every few days or sooner if it gets clogged.

TO CLEAN YOUR INHALER:

- Remove the metal canister from the plastic dispenser.
- Run warm water through the dispenser.
- Shake the water from the dispenser and let it air dry.
- Place the cap back on the mouthpiece.

Once the dispenser is dry, replace the metal canister and spray a little into the air to make sure the inhaler is working properly, then take your regular dose, if needed.



PLAN AHEAD.

It's really important to know how much medicine you have left and how long it lasts. Many inhalers have a meter to tell you how many doses are left. Others don't, though, so make sure to keep track so you don't run out. Plan ahead for holidays, traveling, weather situations and your busy lifestyle. Make sure you always have a good supply.



REMEMBER

- Going without your meds, even for a day or two, can cause breathing trouble. Always have enough.
- The number of puffs in a canister varies with the medicine. So ask your pharmacist how many puffs are in your canister and keep track as you use them.



DO THE MATH

You can estimate how much medicine is left in your inhaler this way: Estimate how many puffs of inhaler you need in a month. For example, if you take two puffs four times a day for 30 days, you'll use 240 puffs each month.

$$\begin{aligned} & (2 \text{ PUFFS} \times 4 \text{ TIMES A DAY}) \\ & \quad \times 30 \text{ DAYS} = \\ & 240 \text{ PUFFS A MONTH} \end{aligned}$$

If you know how many puffs are in your inhaler, you can figure out how many puffs are left at any time during the month. Keep a small piece of paper with your inhaler and subtract as you use it to keep track.

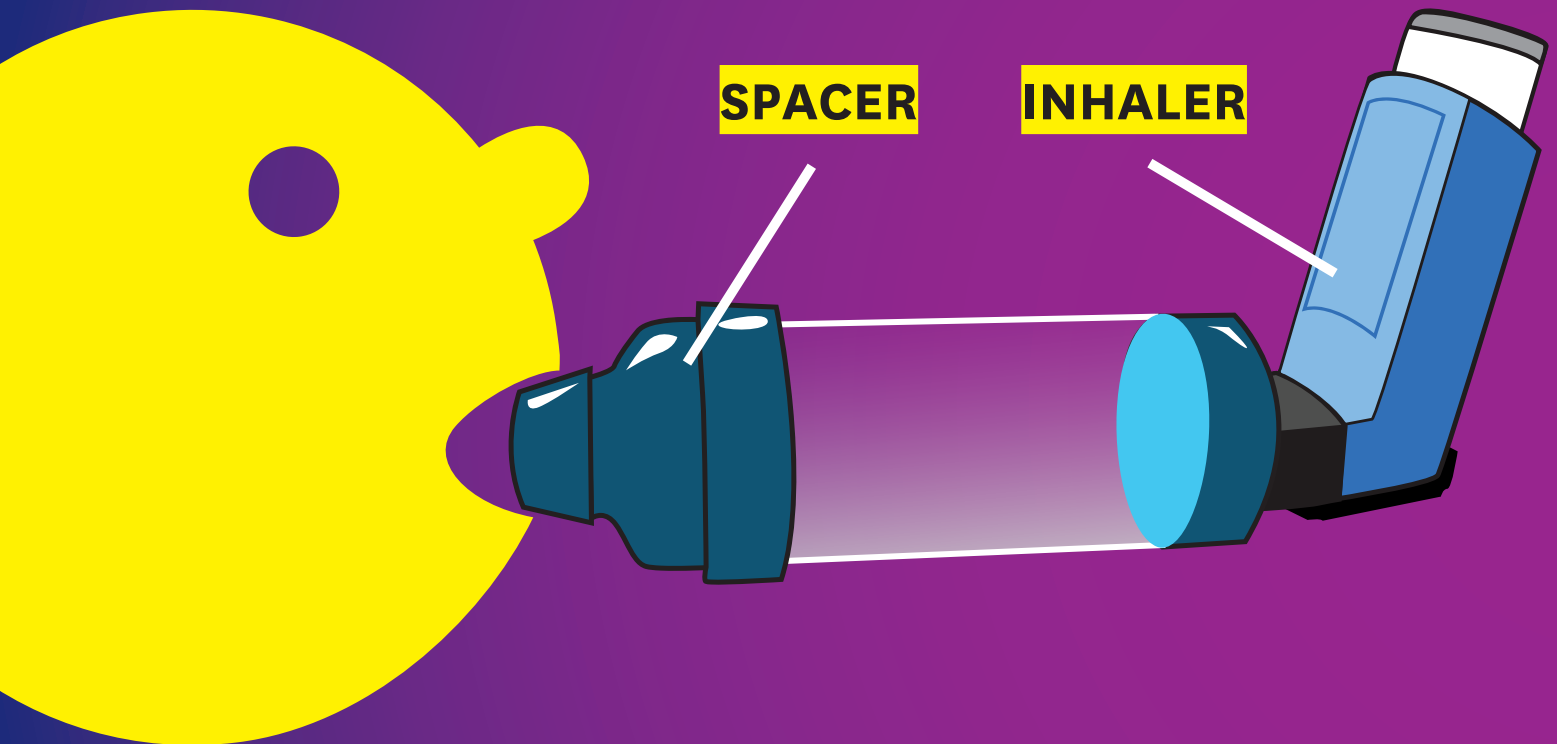


Health Tip: Using an Asthma Inhaler:

health.tips.net/Pages/T003673_Using_an_Asthma_Inhaler.html

OPERATION SPACER

USING A SPACER WITH YOUR INHALER



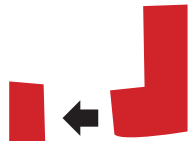
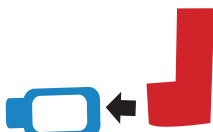
MISSION: DEFINITION

Spacer: An add-on tube creating a chamber from an inhaler to the mouth of an asthma sufferer. Spacers make it easier to administer medication by creating space in which a patient can inhale the spray.

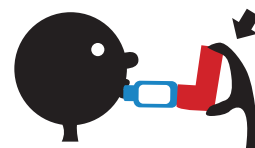
SPACERS

Using a spacer with a metered dose inhaler (MDI – an inhaler that tells you how many doses are left) can help the medicine go deeper into the lungs, cause less mouth irritation and make the inhaler easier and more effective to use. Use a spacer whenever possible but never with dry powder or breath-activated inhalers.

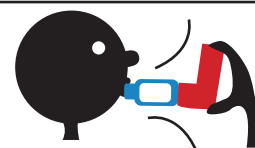
HOW TO USE A SPACER

REMOVE THE PROTECTIVE CAP FROM THE INHALER AND SPACER.	
CHECK THE SPACER FOR DIRT AND MAKE SURE IT'S CLEAN AND CLEAR.	
INSERT THE INHALER MOUTHPIECE INTO THE END OF THE SPACER.	
FIRMLY HOLD THE SPACER AND INHALER AND SHAKE FOUR TO FIVE TIMES.	
BREATHE OUT NORMALLY.	

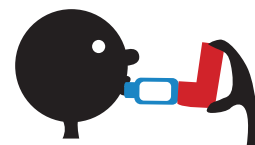
PLACE THE MOUTHPIECE OF THE SPACER BETWEEN YOUR FRONT TEETH AND SEAL YOUR LIPS AROUND THE MOUTHPIECE. KEEP YOUR TONGUE UNDER THE MOUTHPIECE. IF YOU USE A MASK, GENTLY PLACE IT OVER YOUR MOUTH AND NOSE.



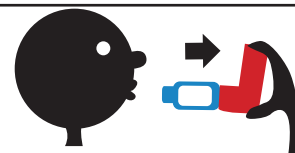
PUSH DOWN ON THE END OF THE INHALER AND BREATHE IN SLOWLY.



WHEN YOU'VE INHALED AS MUCH AIR AS YOU CAN, HOLD YOUR BREATH FOR FIVE TO 10 SECONDS. IF THE SPACER MAKES A WHISTLING SOUND, YOU'RE BREATHING IN TOO QUICKLY.



TAKE THE SPACER OUT OF YOUR MOUTH.



OPEN YOUR MOUTH SLIGHTLY AND BREATHE OUT SLOWLY.



RINSE YOUR MOUTH OUT AFTER USING THE INHALER.



KEEP IT CLEAN

Here's your spacer cleaning checklist:
CHECK IT...

- ☐ Clean at least once a week, more if you're having breathing problems.
- ☐ Remove inhaler from spacer.
- ☐ Gently separate the parts, including the mask, if you use one.
- ☐ Soak the spacer parts in warm water with a mild detergent for 20 minutes.
- ☐ Rinse with clean warm water.
- ☐ Shake spacer parts and place them on a clean surface to air dry.
- ☐ Allow the spacer parts to completely air dry before putting them together.
- ☐ When completely dry, store spacer in a clean plastic bag.

NOTE: Do not boil or put the spacer in the dishwasher.



Mayo Clinic: Using a Metered Dose Asthma Inhaler and Spacer:
[mayoclinic.com/health/asthma/MM00608](https://www.mayoclinic.com/health/asthma/MM00608)

REACHING YOUR PEAK

PEAK FLOW MONITORING

GETTING TO KNOW YOUR PEAK FLOW METER

A peak flow meter is a device that measures how fast and hard you can blow air out of your lungs. It gauges your lung strength. The narrower your airways are due to swelling, mucus buildup and tightening, the slower the air exits your lungs. Just like a thermometer measures your body temperature and detects fever, a peak flow meter detects breathing problems.



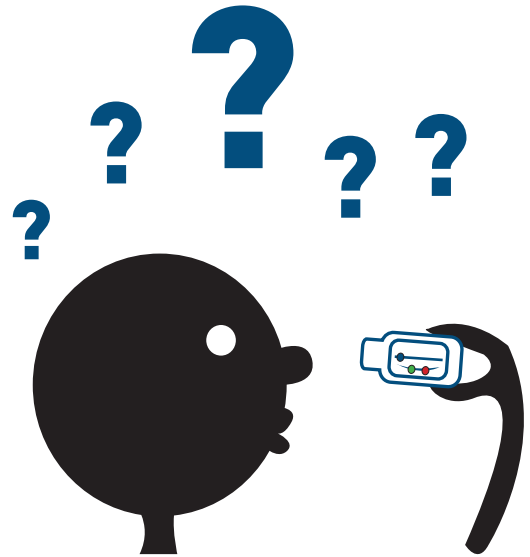
REASONS FOR USING A PEAK FLOW METER

- It's portable and convenient.
- It can help you track what triggers are making your asthma worse.
- It can help figure out if you need emergency care.
- It can help figure out if your lungs are tight before symptoms occur.
- It can help you figure out if your treatment plan is working.



HOW TO USE YOUR PEAK FLOW METER

- Always stand up (when possible) to make sure you can breathe as deeply as possible.
- Move the indicator to the base of the peak flow meter.
- Hold the peak flow meter at the opposite end of the mouthpiece.
- Take a deep breath to fully fill up your lungs.
- Put the mouthpiece in your mouth between your teeth and over your tongue. Close your lips tightly around it.
- With as much force as possible, blow out as fast as you can, as if you were blowing out all your birthday candles.
- Remove the peak flow meter from your mouth and read the number at the level of the indicator.
- Repeat these steps two more times.
- Record your highest number of the three readings on the chart.



PEAK FLOW METER CLEANING

Wash your peak flow meter at least once a week or more if you're having asthma symptoms.

Here's how:

- Wash the peak flow meter in warm, mild soapy water.
- Rinse really well.
- Allow it to air dry.
- Never try to clean the inside of the meter with a brush.
- Never boil or place the meter in a dishwasher (unless the accompanying instructions indicate you can do so).

PEAK FLOW ZONES

After you've figured out your best peak flow number, your health care team (nurse, respiratory therapist, asthma educator, etc.) can calculate your Peak Flow Zones. These zones will help you see any changes in your peak flow readings. To make it easy, experts have set up a symbol that looks like the colors of a traffic light.

GREEN ZONE: This signal means your asthma is in good control.

- **You're at 80–100 percent of your personal best.**
- **Your breathing is good.**
- **You have no asthma symptoms or warning signs.**
- **Remember to take all your doctor-prescribed medicines.**
- **Take your inhaler before you exercise.**



YELLOW ZONE: This signal means your asthma is not under control and you should proceed with caution. Your doctor may instruct you to take quick-relief meds or even call in for further advice.

- **You're at 50–79 percent of your personal best.**
- **You may experience a runny or stuffy nose, sneezing, coughing, itchy throat.**
- **You may experience restlessness, red or pale face, dark circles under the eyes.**
- **You may feel more tired.**
- **Use your rescue medicine.**
- **Recheck your peak flow meter after at least 15 minutes.**
- **Call your doctor or health care professional if the next reading is not green.**



RED ZONE: This signal is an alert. You may have to call your doctor for immediate medical care.

- **You're below 50 percent of your personal best.**
- **You may cough and wheeze, more at night.**
- **Your chest may feel tight and hurt.**
- **Your breathing may be faster.**
- **You may become short of breath easily.**
- **Use your quick-relief medicine with an inhaler or nebulizer immediately.**
- **Call your doctor or 911 now.**



An **asthma action plan** helps you chart and keep track of your peak flow readings and zones. Anyone with asthma should have an asthma action plan, no matter how old. See pages 40-43 for a sample or download your own at **lung.org**.



WebMD: Asthma and the Peak Flow Meter:
webmd.com/asthma/guide/peak-flow-meter

Video: How to Use a Peak Flow Meter:
youtube.com/watch?v=LHvBH0O6u8c&feature=related

WARNING! WARNING!

KNOWING YOUR EARLY WARNING SIGNS AND SYMPTOMS

SIGNS OF DANGER

Asthma flare-ups don't usually occur without some warning signs. Most people can tell when an asthma issue is coming. Remember your last episode? What were your early warning signs or symptoms? Those early warning signs are the small changes that can tell you if your asthma condition is getting worse. Symptoms are signs that tell you you're having an asthma issue. Notice both of these danger signals to be in better control of your condition.

When you're experiencing these signs and symptoms, you can follow your doctor's instructions for controlling your asthma. Doing so may keep more serious problems from starting. Read this list and check the signs and symptoms that you experience. Share them with your family and friends and your doctor. Be sure to update your list as you identify other signs and symptoms.

- ☐ Decreasing peak flow
- ☐ Tightness in chest
- ☐ Out of breath easily
- ☐ Tired
- ☐ Scratchy or sore throat
- ☐ Stuffy or runny nose
- ☐ Restless
- ☐ Coughing
- ☐ Faster breathing
- ☐ Shortness of breath
- ☐ Itchy, watery eyes



- ☐ Sneezing
- ☐ Headache
- ☐ Itchy back of neck
- ☐ Difficulty speaking
- ☐ Color change in face
- ☐ Other (signs that you notice)

CAUSES OF NIGHTTIME (NOCTURNAL) ASTHMA:

- Increased mucus or sinusitis
- Internal triggers
- Lying in a flat position
- Air conditioning
- GERD (acid reflux)
- Late Phase Response (symptoms occurring after the trigger)
- Hormones



WebMD: The Warning Signs of Asthma:
webmd.com/asthma/asthma-warning-signs

YOUR ASTHMA ACTION PLAN

An asthma action plan is created with your doctor and written to help control your asthma. It shows your daily treatment, such as what kind of meds to take and when to take them. It shows how to control asthma long term and how to handle it during episodes and flare-ups. Like the Peak Flow Chart, it shows the Peak Flow Zones and explains when to call the doctor or go to the emergency room.

Make sure that anyone who needs to know about your asthma—such as teachers or coaches—has a copy of your asthma action plan.

ASTHMA ACTION PLAN

General information:

Name: _____

Emergency contact: _____

Phone #: _____

Doctor/health care provider: _____

Phone #: _____

Doctor signature: _____

Date: _____

Severity:

- ☐ Intermittent
- ☐ Mild persistent
- ☐ Moderate persistent
- ☐ Severe persistent

Triggers:

- ☐ Colds
- ☐ Exercise
- ☐ Animals
- ☐ Smoke
- ☐ Weather
- ☐ Dust
- ☐ Air pollution
- ☐ Food
- ☐ Other _____

Green Zone: Doing Well

Peak Flow Meter Personal Best =

Symptoms

- **Breathing is good**
- **No cough or wheeze**
- **Can work and play**
- **Sleeps well at night**

Peak Flow Meter

More than 80 percent of personal best or -----

Control medications:

Medicine

How much to take

When to take

Yellow Zone: Getting Worse

Contact doctor if using quick relief more than twice per week.

Symptoms

- Some problems breathing
- Cough, wheeze or tight chest
- Problems working or playing
- Wake at night

Peak Flow Meter

Between 50 percent and 80 percent of personal best or _____ to _____

Continue control medicines and add:

Medicine	How much to take	When to take
_____	_____	_____
_____	_____	_____
_____	_____	_____

If symptoms (and peak flow, if used) return to Green Zone after one hour of the quick-relief treatment, then:

- ☐ Take quick-relief medication every four hours for one to two days
- ☐ Change your long-term control medicine by _____
- ☐ Contact your doctor for follow-up care.

If symptoms (and peak flow, if used) DO NOT return to Green Zone after one hour of the quick-relief treatment, then:

- ☐ Take quick relief treatment again.
- ☐ Change your long-term control medicine by _____
- ☐ Call your doctor/health care provider within _____ hour(s) of changing your medication routine.

Red Zone: Medical Alert

Ambulance/Emergency Phone Number:

Symptoms

- **Many breathing problems**
- **Can't work or play**
- **Getting worse and not better**
- **Medicine doesn't help**

Peak Flow Meter

Less than 50 percent of personal best or _____ to _____

Continue control medicines and add:

Medicine	How much to take	When to take
_____	_____	_____
_____	_____	_____
_____	_____	_____

Go to the hospital or call 911 if:

- ☐ Still in the red zone after 15 minutes.
- ☐ You have not been able to reach your doctor/health care provider for help.

Call an ambulance or 911 right away if these danger signs are present:

- ☐ Trouble walking/talking due to shortness of breath.
- ☐ Lips or fingernails are blue.

Q&A

QUESTIONS AND ANSWERS FOR YOUR DOCTOR

Write down the questions
you have for your doctor.

Journal notes:

PEAK FLOW DIARY

[illegible]

PEAK FLOW DIARY

[illegible]

PEAK FLOW DIARY

[illegible]

PEAK FLOW DIARY

DATE AND TIME	WHEEZING	COUGHING	CHEST TIGHTNESS	LIMITED ACTIVITY	NIGHT AWAKENINGS	EARLY MORNING COUGH	Triggers/ Quick-relief medications	Record your best peak flow each morning and early afternoon before and a few minutes after using your inhaler or nebulized medicine. PM AM

PEAK FLOW DIARY

[illegible]

MY NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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RESOURCES

American Academy of Allergy, Asthma & Immunology
414-272-6071
aaaai.org

American Academy of Pediatrics
800-433-9016
aap.org

American College of Allergy, Asthma & Immunology
Find an Allergist in Your City
acaai.org

American Lung Association
800-LUNGUSA (800-586-4872)
lung.org

Asthma and Allergy Foundation of America
1-800-7-ASTHMA (1-800-727-8462)
aafa.org

Centers for Disease Control and Prevention
800-CDC-INFO (800-232-4636)
cdc.gov

National Asthma Education and Prevention Program
www.nhlbi.nih.gov/about/org/naepp

National Heart, Lung, and Blood Institute
www.nhlbi.nih.gov



TEENS ON COURSE™ IT'S ALL ABOUT ASTHMA

WONDERING ABOUT YOUR ASTHMA AND
HOW TO KEEP IT UNDER CONTROL?

You've got real questions about
your asthma, and Teens on Course™
has answers.

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