

how to manage asthma



A GUIDE

FOR ADULTS AND CHILDREN

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how to manage asthma

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introduction

This booklet is for adults and teenagers with asthma and for parents of children with asthma. It is designed to help you learn and use self-management skills to keep asthma in good control.

Asthma is a long-term lung disease that affects a person's ability to breathe. Regular treatment is often needed, even if you have no symptoms. However, you can control asthma. You can prevent flare-ups from happening and keep the flare-ups that do happen from getting worse.

When asthma is well-controlled, you or your child can live a healthy life and be able to:

- go to work or school
- play sports and be active
- avoid emergency department visits
- sleep without being awakened by asthma symptoms
- use quick-relief medicine (also called "rescue" medications) no more than two days a week (other than for physical activity)

Prevention is the key to keeping asthma in good control. Along with your medical team, this booklet is your guide to helping you or your child learn the skills you will need to successfully manage asthma.



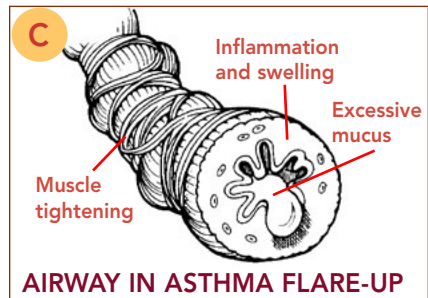
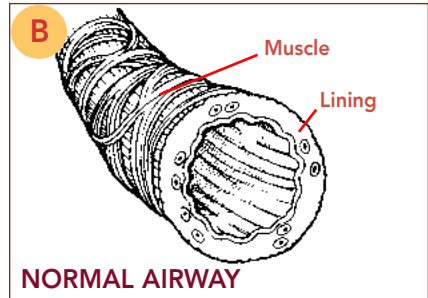
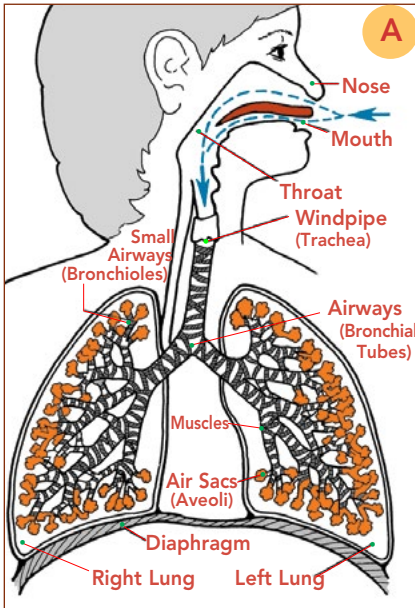
what happens during an asthma flare-up

Asthma affects the small breathing tubes (bronchial tubes) in a person's lungs (see pictures **A** and **B** below). Each person with asthma is sensitive to certain "triggers" (**PAGE 5**) that can affect the breathing tubes. When someone with asthma is exposed to one or more of their triggers, three things happen (see picture **C** below):

1. The insides of the breathing tubes swell up (*inflammation*).
2. The body makes lots of thick, sticky fluid (*mucus*) inside the breathing tubes.
3. The muscles surrounding the breathing tubes get tight and make the air passages smaller (*bronchospasm*).

When all of these things happen, it is hard to breathe. This is called an asthma flare-up.

NORMAL LUNGS



recognizing and controlling asthma symptoms

Asthma symptoms may be different for each person. They may also be different for each flare-up in the same person.

Here are some symptoms of asthma. Which ones do you have?
Which ones does your child have?

- coughing
- a tight feeling in the chest
- wheezing (breathing with a whistling sound)
- shortness of breath
- difficulty breathing

Everyone with asthma has different symptoms and triggers. People with asthma should have an asthma action plan for controlling asthma and preventing symptoms. (Please see **PAGE 28** for a sample child's asthma action plan and **PAGE 29** for a sample adult action plan.)

The goal of managing your asthma is to prevent asthma symptoms; and for you and your child to be able to work and play normally.

IF YOU OR YOUR CHILD ...

- wakes up during the night due to asthma more often than two times a month, or
 - needs quick-relief medicines more often than two days a week (other than for physical activity),
- ... it means that you or your child's asthma is not in good control.

ASTHMA CAN BE MANAGED BY:

- controlling and avoiding triggers (**PAGE 7**)
- taking long-acting "controller" or "preventer" medicines according to your asthma plan (**PAGE 12**)
- catching flare-ups early so that you can keep them from getting worse (**PAGE 16 AND PAGE 31**)

If you take these steps and still have trouble keeping your asthma or your child's asthma in good control, talk with your doctor.

Asthma triggers can cause symptoms and flare-ups. *Each person has different triggers.*

There are many types of triggers. What are your triggers? What are your child's triggers?

COMMON ALLERGIES

- dust mites: tiny bugs too small to see without a microscope that live in household dust and bedding
- pets that have fur or feathers
- cockroaches
- molds which can grow in damp areas, such as the kitchen, the bathroom, and in the soil of houseplants
- pollen from grasses, trees, and weeds

Allergy testing can tell you which allergens you or your child should avoid. Ask your doctor if allergy testing would be helpful.

AIR POLLUTANTS AND OTHER IRRITANTS THAT MAY BOTHER YOUR LUNGS

- smoke from cigarettes, cigars, fireplaces, wood burning stoves, or incense
- smog
- perfumes or other fragrances
- aerosol sprays, including hair spray
- strong chemical fumes from kitchen and bathroom cleaners, paints, and glues

INFECTIONS - ONE OF THE MOST COMMON TRIGGERS

- colds and flu
- sinus infections
- bronchitis and pneumonia

recognizing asthma triggers

PHYSICAL ACTIVITY

While physical activity may be a trigger, it is very important to keep physically active ([PAGE 33](#)). You can use medicines to help control asthma symptoms that are triggered by physical activity.

OTHER TRIGGERS

- stress
- changes in weather
- cold, dry air
- sulfites, a preservative found in dried fruits, wine, and other foods
- live Christmas trees
- aspirin or aspirin-like drugs, such as ibuprofen. (In rare cases, these can trigger severe asthma attacks, which occur more often in adults than in children.)



how to control and avoid asthma triggers

Triggers can cause symptoms and flare-ups. If you can control and avoid triggers, you or your child may need less medicine to keep asthma in good control.

There are a few triggers that everyone with asthma should avoid. How can you avoid these triggers?

SMOKE

- Keep your home and car free of smoke and avoid smoky areas.
- Quitting smoking is the single most important change you can make to improve your health and the health of your child. If you have not yet made plans to quit, perhaps now is the time to think about what would help you quit. Kaiser Permanente can help (see **PAGE 38** of this booklet for more information about quitting).
- Avoid using fireplaces, wood burning stoves, or incense.
- Avoid using a kerosene heater or gas stove for heat.

STRONG ODORS (SUCH AS PERFUMES, POTPOURRI, HAIRSPRAY, HOUSEHOLD CLEANING PRODUCTS, GLUES, PAINTS)

- Use unscented cleaning products whenever possible. Avoid contact with aerosol sprays and strong scents or odors.
- Wear a mask when cleaning, or leave the house and have someone else do the cleaning.
- Use exhaust fans or keep windows open for fresh air if you or your child cannot avoid strong odors indoors.

COLDS OR BRONCHITIS

- Wash your hands frequently or wipe them with an over-the-counter germ killer, such as *Purell*.
- Cover your mouth when you cough or sneeze, and wash your hands afterwards. Use paper towels to dry hands.
- Get a flu shot each fall.

how to control and avoid asthma triggers

There are some triggers that need to be controlled or avoided *only if they trigger asthma symptoms for you or your child*. Note the ideas you might want to try from the list below.

PHYSICAL ACTIVITY

- If needed, take your quick-relief medicine at least 10-15 minutes before starting physical activity (**PAGE 33**).
- Avoid physical activity outdoors when air pollution levels are high, and be careful exercising when the weather is hot and windy, or cold and dry.
- Wear a scarf or a mask over the nose and mouth when the weather is cold and dry.
- Try swimming in an outdoor pool when the weather is mild. This is an activity that doesn't usually trigger asthma symptoms. Indoor pools may have higher levels of chlorine, which can cause problems for people with asthma.

DUST AND DUST MITES

Dust and dust mites can be found in every part of the house. It is especially helpful to keep the bedroom as dust-free as possible.

- Enclose mattresses, box springs, and pillows in allergy-proof, zippered covers. (See **PAGE 40** for a list of companies that sell these covers and other allergy control products.)
- Wash sheets and pillow cases weekly in hot water. Wash blankets in hot water every two weeks.
- Avoid keeping stuffed animals, books, and other things that can collect dust in the bedroom.
- Use a damp cloth or mop to dust the bedroom every week.
- Wear a mask when cleaning, or leave the house and have someone else do the cleaning.
- Remove carpeting and install hardwood or linoleum floors instead. If you cannot remove the carpet, vacuum it every week using a vacuum cleaner that has special allergy bags to decrease the dust during vacuuming or a special HEPA filter.
- Change heating and air conditioning filters every 2 to 3 months.

PETS

- Keep pets that have fur or feathers out of the house. Any pet with fur or feathers can trigger asthma.
- Avoid contact with pets that have fur or feathers. Wash your hands after touching a pet with fur or feathers.
- If you must have the pet indoors, keep it from going into your bedroom or your child's bedroom.
- Think about using a HEPA filter to clean the air in your home. (See **PAGE 40** for a list of companies that sell HEPA filters and other allergy control products.)

COCKROACHES – PREVENT THEM BY:

- cleaning the kitchen completely
- keeping all parts of the kitchen dry
- keeping food in tightly closed containers
- taking the garbage outside every night
- caulking around cracks in cabinets and around plumbing
- using roach traps—not sprays

You may need to hire an exterminator if you can't get rid of cockroaches any other way. If you live in a multiple-unit building, it is ideal if all the units can be exterminated at the same time.

MOLD AND MILDEW

- Fix water drips and leaks.
- Avoid using humidifiers or vaporizers.
- Use a dehumidifier if moisture or mildew is a problem.
- Use an effective mold cleaner such as a mild bleach solution (1 part bleach, 10 parts water) to kill mold. (Wear a dust mask and keep windows open when using any cleaning solution.)
- Keep plants out of bedrooms and limit plants elsewhere indoors.

how to control and avoid asthma triggers

POLLEN FROM GRASSES, WEEDS, AND TREES

- Expect higher pollen counts during spring and fall, depending on your location.
- Keep home and car windows closed during high pollen times. Use an air conditioner if needed.
- Pollen counts are higher on windy days, so reduce your time outdoors.
- Don't hang your laundry out to dry, as allergens collect on clothing.
- Wear a filter mask to mow the lawn or rake leaves; or have someone else do the work when you are not there.

SMOG

- Stay inside and keep windows closed as much as possible on smoggy days.

SULFITES

- Avoid sulfites, especially in wines and dried fruits.
- Check labels and ask restaurants and supermarkets about sulfites in their foods.

EMOTIONS AND STRESS

- Learn and practice relaxation exercises and stress management (**PAGE 34**).
- Talk to your doctor if stress or emotions trigger asthma.

MEDICINES OR ASPIRIN

- Let your doctor know about all the medicines that you or your child take, especially beta blockers (such as atenolol and metoprolol) and ACE inhibitors (such as lisinopril).
- Tell your doctor about any herbs or supplements that you or your child take to treat asthma or to treat other conditions.
- Avoid aspirin and aspirin-like medicines, such as ibuprofen (*Motrin, Advil*) **if you or your child are sensitive to aspirin.**

There are three types of asthma medications:

- 1. Long-term control medicines** (also called “preventers” or “controllers”). Use these medicines to control asthma. Usually these medications are used daily to prevent asthma symptoms and flare-ups.
- 2. “Quick-relief” medicines** (“rescue” medications or “relievers”). Use these medicines to relieve asthma symptoms quickly. Some people also use relievers to prevent flare-ups before physical activity or before they will be around any of their triggers. These medicines do not reduce swelling or mucus.
- 3. Flare-up reversing medicines** (“burst” medicines). Use these medicines for a severe flare-up.

Most people use more than one type of medicine to keep their asthma in good control. Your doctor will work with you to create an asthma plan so you know when to take your medicines. Talk with your doctor if you have any questions about your medicines.

Tell your doctor about any herbs or supplements you or your child take and about any alternative therapies (such as acupuncture or massage) you use to treat asthma or any other condition.



LONG-TERM CONTROL MEDICINES

("preventers" or "controllers")

Medicines called inhaled corticosteroids are the most important long-term control medicines for asthma. They help to prevent and control swelling in the breathing tubes. Using inhaled corticosteroids is one of the best ways to keep asthma in good control.

Some inhaled steroids include:

- beclomethasone (*QVAR*)
- mometasone furoate (*Asmanex*)
- mometasone furoate/formoterol fumarate (*Dulera*)
- fluticasone (*Flovent HFA*)
- fluticasone/salmeterol (*Advair*)
- budesonide (*Pulmicort*)
- budesonide/formoterol (*Symbicort*)
- ciclesonide (*Alvesco*)

Some important things to know about inhaled steroids:

- Inhaled steroids for asthma are not the same as the anabolic steroids misused by some athletes.
- They do **not** give quick relief for asthma symptoms.
- They do reduce swelling and mucus.
- They do prevent and control asthma flare-ups.
- They come in a metered dose inhaler or a dry powder inhaler (**PAGE 17**).
- They are also available in a nebulizer form for young children.
- They can take up to a week or more to start working and a month or more to become fully effective.
- You or your child will get the most help from these medicines when you use them regularly as prescribed, *even when your asthma is in good control.*

Possible side effects of inhaled steroids:

These medicines are safe when you use them according to your asthma plan. Side effects are uncommon, but can include:

- throat irritation and cough right after taking the medicine
- hoarse voice
- mild yeast infection in the mouth (thrush)

You or your child can reduce the side effects from taking inhaled corticosteroid medicines by:

- using a metered dose inhaler with a spacer (**PAGE 18**)
- rinsing your mouth afterwards with water
- taking these medicines just before you brush your teeth
- working with your doctor to find the smallest amount of medicine that keeps your asthma under good control

Do not change the amount of medicine you or your child takes unless your doctor tells you to or it is written in your asthma plan.

Note: Regular use of inhaled corticosteroids may be linked to a temporary slowing of growth in children. This does **not** affect how tall your child will be as an adult. Asthma that is not in good control can also slow a child's growth. Inhaled steroids are the most useful medicines for controlling asthma. Talk with your child's doctor if you have concerns about inhaled steroids and slowed growth.

asthma medicines

Other long-term control medicines

Your doctor may prescribe these medicines when an inhaled steroid alone isn't enough to control asthma. These medicines are different from inhaled steroids and usually do not replace them. Most people take one of these medicines along with an inhaled steroid.

If you or your child is taking any of the medicines listed below, ask your doctor if you should also be taking an inhaled steroid. Do not take any of these more than twice per day.

- montelukast (*Singular*)
- theophylline (*Theo-Dur*)
- zafirlukast (*Accolate*)
- zileuton (*Zyflo*)

These two medications should never be used without an inhaled steroid:

- salmeterol (*Serevent*)
- formoterol (*Foradil*)

Children under age 12 should use a combination product (like *Dulera*, *Advair* or *Symbicort*) rather than *Serevent*. If you have any concerns about the medications you or your child have been prescribed, talk to your doctor.



QUICK-RELIEF MEDICINES (“RESCUE” MEDICATIONS OR “RELIEVERS”)

When a person has an asthma flare-up, these medicines quickly relax the muscles around the breathing tubes to make breathing easier.

Some quick-relief medicines include:

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

Some important things to know about quick-relief medicines:

- They do **not** reduce swelling inside the breathing tubes.
- They do **not** prevent or control asthma.
- They start working within about 5 to 15 minutes and last for about 4 to 6 hours.
- They generally come in a metered dose inhaler (MDI).
- They can be used before exercise or before being around unavoidable triggers.
- If you or your child needs to use quick-relief medicines more than two days a week (other than for physical activity), you or your child’s asthma is not in good control. Talk to your doctor about how to improve your asthma self-management.

Possible side effects of quick-relief medicines:

- fast heart rate
- a shaky or jittery feeling
- nervousness
- headache

FLARE-UP REVERSING MEDICINES

(“burst” medicines or “oral corticosteroids”)

These medicines reduce the swelling inside the breathing tubes and help to stop a moderate or severe asthma flare-up.

Some flare-up reversing (“burst”) medicines include:

- prednisone
- prednisolone (*Orapred, Prelone, Pediapred*)
- methyl prednisolone (*Medrol*)

Note: These oral corticosteroids for asthma are not the same as the anabolic steroids misused by some athletes.

Some important things to know about flare-up reversing medicines:

- They begin to work in 4 to 6 hours, but can take days to become fully effective.
- They come as pills or liquids.
- When taking “burst” medicines, you or your child should also continue to use the long-term control and quick-relief medicines in your asthma plan (page 29).

Possible short-term side effects of flare-up reversing (“burst”) medicines. These side effects go away after the medicine is stopped:

- mood changes
- increased appetite
- weight gain (mainly because the body will retain water)

Possible long-term side effects of taking flare-up reversing (“burst”) medicines often:

- bone-thinning (osteoporosis)
- slowed growth

Note: Do **not** take “burst” medicines for longer than your doctor recommends. You or your child can avoid taking “burst” medicines by keeping your asthma in good control with long-term control medicines.

how to use inhaled medications for asthma

Inhaled medications are an important part of asthma treatment. The medication goes directly into your lungs (where it is needed) so it is more effective and causes fewer side effects. There are three methods for taking inhaled medicines:

- 1. Metered dose inhalers** (MDIs) deliver medicine as a spray. They are sometimes called “inhalers” or “puffers” (see [PAGE 18](#)). Your MDI works best when used with a spacer. Spacers increase the amount of medicine that gets into the lungs and can help prevent side effects.
- 2. Dry powder inhalers** (DPIs) deliver medicine as a powder. They are used without a spacer. To use a dry powder inhaler, you or your child needs to be able to breathe air in quickly and deeply.
- 3. Nebulizers** are machines that deliver quick-relief medicine or inhaled corticosteroids as a fine mist. They are sometimes used in the clinic or emergency room to give a 5- to 15-minute “breathing treatment,” or at home for people who cannot use an inhaler with a spacer correctly (especially very young children). Nebulizers are bulky and are less convenient than using an inhaler.

Note: Taking 4 to 6 puffs of quick-relief medicine from an inhaler with a spacer, when done correctly, works just as well as a breathing treatment with a nebulizer.

The most common way to take inhaled medication is with a **metered dose inhaler** (MDI). An MDI works best with a special device called a **spacer**. A spacer gets even more medicine to the lungs, so the medicine works better. Less medicine ends up in the mouth and throat, so there are fewer side effects. It is also easier to use an MDI with a spacer because you do not have to coordinate puffing with breathing.

how to use inhaled medications for asthma

If you are using more than one inhaled medication use the bronchodilator (reliever) first. If you have questions about using inhaled medications, ask your doctor.

HOW TO USE A METERED DOSE INHALER AND AEROCHAMBER SPACER

It is important to use the inhaler and spacer correctly in order to get the medication into your lungs. Ask your health care provider to check the way you or your child uses the inhaler and the spacer together.

Follow these steps or give these instructions to your child:

1. Stand up straight.
2. Take the cap off the inhaler and shake it well.
3. Insert the mouthpiece of the inhaler into the spacer.
4. Breathe out normally, emptying your lungs. Remove cap from spacer.
5. Place the mouthpiece of the spacer in your mouth between your teeth, with your tongue underneath. Make sure your lips make a tight seal around the mouthpiece.
6. Press down once on the medicine canister, releasing one “puff” or dose of medicine into the spacer. Do not release more than one puff at a time.
7. Breathe in slowly and deeply from the spacer. Fill your lungs with as much medicine and air as possible.
8. Take the spacer out of your mouth and hold your breath.
9. Slowly count to 10 while you hold your breath.
10. Breathe out slowly through your mouth.
11. If you are taking more than one puff of quick-relief medicine, it may help to wait 30 seconds or more between puffs.



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how to use inhaled medications for asthma

12. When you are done taking the medicine, take the inhaler out of the spacer and replace the cap on the mouthpiece of the inhaler. Be sure to rinse out your mouth with water if you are using an inhaled steroid or a combination product containing an inhaled steroid (for example, *QVAR* or *Dulera*).

HOW TO USE A METERED DOSE INHALER AND AEROCHAMBER WITH MASK

Young children, especially babies and toddlers, may have difficulty holding their breath. Using a spacer with mask allows the young child to breathe in several times in order to get an accurate dose of medicine.

1. Shake the inhaler and remove the inhaler cap.



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2. Hold the inhaler upright and insert the inhaler into the spacer.
3. Place your infant or toddler comfortably on your lap. The back of your child's head should rest against your chest.
4. Place the mask spacer securely over your child's mouth and nose, making sure there is a good seal. The mask must fit snugly, with no gaps between the mask and the skin.
5. Press down on the inhaler to spray one puff of medication into the spacer.
6. Have your child breathe in and out normally for 5-6 breaths.
7. It is okay if your child cries. It takes a deep breath to cry.
8. If your child needs another puff of medication, wait one minute and repeat steps 4 and 5.
9. When your child is done taking the medication, take the inhaler out of the spacer and replace the cap on the mouthpiece of the inhaler.

how to use inhaled medications for asthma

Caring for a metered dose inhaler (MDI) and AeroChamber spacer

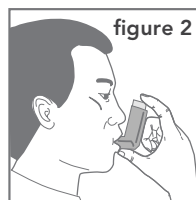
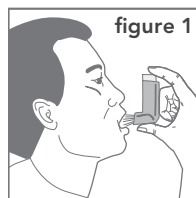
- Hand wash the inhaler's plastic holder and spacer with mild soap and warm water at least once a week. (Take the canister out of the plastic holder before you wash it.)
- Let them air dry.
- Do not put an inhaler or spacer in the dishwasher.

HOW TO USE A METERED DOSE INHALER WITHOUT A SPACER

Caution: We do not recommend using your inhaler without a spacer. Less medication actually gets into your lungs. A spacer can also help prevent side effects. Always use a spacer with ipratropium (Atrovent) inhalers. Atrovent will cause blurred vision if it gets into the eyes.

If you must use your inhaler without a spacer, follow these instructions (open mouth or closed mouth technique):

1. Remove the cap and hold the inhaler upright.
2. Shake the inhaler.
3. Tilt your head back slightly and breathe out.
4. Position the inhaler as shown (figure 1), with your mouth open wide. Hold the inhaler two fingers' width from your mouth. Or seal your lips around the mouthpiece (figure 2).
5. Press down on the inhaler to release the medication as you start to breathe in slowly and deeply through your mouth (over 3-5 seconds).
6. Take the inhaler out of your mouth and close your mouth.
7. Hold your breath as long as you can, up to 10 seconds to allow the medicine to reach deeply into your lungs.
8. Breathe normally.



how to use inhaled medications for asthma

9. Wait about 30 seconds between puffs. Put the protective cap on the mouthpiece of the inhaler when you are finished. Always rinse your mouth after using inhaled steroids (for example, QVAR, Flovent, or Asmanex). Review the instructions included with the packaging of your inhaler for more tips on proper use.

HOW TO START USING YOUR ALBUTEROL HFA INHALER

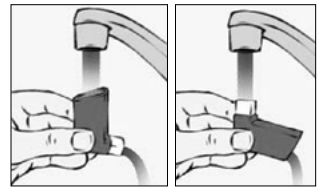
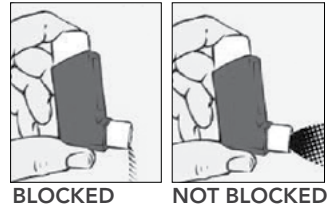
The first time you use your HFA inhaler, you will need to prime it.

1. Shake the inhaler well. 2. Remove the mouthpiece cap. 3. Spray 3 times into the air, away from your face. **You will need to re-prime it** if it has been more than two weeks since you last used it.

Cleaning your Albuterol HFA inhaler

Wash your inhaler mouthpiece at least once a week to prevent build-up and clogging. Otherwise, the inhaler may stop working. To clean your inhaler:

1. Take off the canister and mouthpiece cap.
2. Wash the mouthpiece under warm running water for 30 seconds. Run water through both the top and bottom of the mouthpiece. Never immerse the canister in water.
3. Dry the mouthpiece by shaking off any water. Let it air dry completely. The mouth piece has a lower chance of clogging if it is totally dry.
4. When the mouthpiece is dry, replace the canister and the mouthpiece cap.



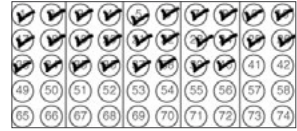
Wash mouthpiece under warm running water

To use your Albuterol HFA inhaler with a spacer, follow instructions on [pages 18 and 19](#) for using the Aerochamber spacer.

how to use inhaled medications for asthma

HOW MANY PUFFS ARE LEFT IN THE METERED DOSE INHALER?

It is important to plan ahead to make sure you don't run out of your medicine. Keep in mind the time it will take to refill your prescription, especially if you use a mail order service. Keeping track of the puffs left in your inhaler can help you do this.



To keep track of how many puffs you have used, use a chart like this one. Make a check mark each time you take a puff. When the number of check marks equals the number of puffs in your inhaler, your inhaler is empty. An inhaler may discharge even when there is no medicine left.

Inhaler	Number of puffs
albuterol	200
beclomethasone HFA	120
budesonide	200
fluticasone	120
ipratropium	200
mometasone	60 or 120
salmeterol	60

Another method is to divide the number of puffs in the canister by the number of puffs used each day. This will give you the number of days the medication will last. Mark this day on your calendar, and **plan ahead to replace your inhaler** before this day comes.

These MDIS include counters:

Inhaler	Number of puffs
Dulera	120
Advair HFA	120
Advair Diskus	60
Symbicort	120
QVAR	200

Some people try to float their inhalers in water to see how much medication is left. **This does not work!** We recommend that you use one of the counting methods above.

how to use inhaled medications for asthma

HOW TO USE A DRY POWDER INHALER

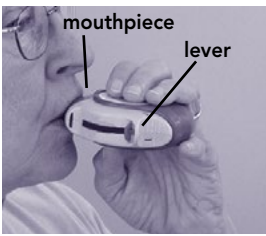
There are several types of dry powder inhalers. The most common are diskus, twisthaler, turbuhaler, or flexhaler. All of these inhalers are breath activated which means that when you take a deep breath, the medication is released. Always rinse your mouth and spit out the water after inhaling the medication.

All DPIs have dose counters to alert you when the medicine is running out.

Diskus

Follow these steps or give these instructions to your child:

1. Stand up straight.



2. Release a dose of medicine into the inhaler chamber according to the instructions for your DPI. Do not release more than one dose at a time.

3. After you have released the medicine, be sure not to turn the DPI over. The medicine might fall out. Also, do not blow into the DPI.

4. Breathe out first and then put your mouth completely over the inhaler opening.

5. Breathe in the dry powder quickly and deeply.

6. Hold your breath for 10 seconds.

7. When you are done taking the medicine, close the inhaler.

Twisthaler® (Asmanex, mometasone)

1. Gently breathe out.

2. Unscrew the cap. Seal your lips around the mouthpiece of the Twisthaler.

3. Inhale rapidly and deeply. Continue to take a full, deep breath.



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how to use inhaled medications for asthma

4. Take the Twisthaler out of your mouth while you hold your breath for 10 seconds.
5. Breathe normally. Make sure you do not breathe into the Twisthaler.
6. Close the Twisthaler by twisting on the cap. The arrow on the case should line up with the dose counter when the Twisthaler is closed. Keep the cap on the Twisthaler when not in use to keep the Twisthaler clean and dry.
7. Repeat steps 1-6 when more than one puff is prescribed.

Turbuhaler® or Flexhaler® (Pulmicort, budesonide)

1. Unscrew the cap.
2. Hold the Turbuhaler or Flexhaler with the mouthpiece up.
3. Turn the bottom all the way to the right and back to the left until you hear it click. This means the medication is loaded and ready.
4. Hold the inhaler away from your mouth and gently breathe out.
5. Seal your lips around the mouthpiece.
6. Inhale rapidly and deeply. Continue to take a full, deep breath.
7. Breathe normally.
8. Repeat steps 1-7 when more than one puff is prescribed.

Caring for a dry powder inhaler

It is important to keep your dry powder inhaler clean and dry. Use a cloth to wipe the mouth piece after each use and store your inhaler in a dry place.

Asthma does not stay the same all the time. Sometimes it will be in better control than at other times. By keeping track of your asthma, or your child's asthma, you can often predict when a flare-up is coming and follow your action plan (see **PAGE 30**) before it gets worse.

There are 2 ways to monitor asthma. It is important to use at least one of them. For best results, use both:

1. KEEP TRACK OF ASTHMA SYMPTOMS

This method requires that you pay attention to asthma symptoms and to how you or your child is feeling. You can tell that a flare up is occurring when:

- Asthma symptoms occur more often than usual, or you have more symptoms than usual.
- You need more puffs than usual of quick-relief medicine, or you are taking the medicine more often than 2 days a week (other than for physical activity).
- Asthma is causing you or your child to wake up at night more than 2 times a month.

2. PEAK FLOW MONITORING

This method uses a tool called a peak flow meter. It measures whether breathing tubes are opened enough for normal breathing. Peak flow measurements can let you know when a flare-up is starting, and they can help you to figure out how bad the flare-up is.

- When the peak flow reading is closer to the "personal best" (see **PAGE 27**), the breathing tubes are more open. Your or your child's asthma is in better control.
- When the peak flow reading is below your "personal best," the breathing tubes are more closed than they should be. Even if you or your child feels okay, a lower peak flow reading can be a sign that a flare-up is starting. Refer to your asthma action plan (**PAGE 29**) to determine if it's time to take action.



keeping track of asthma

Note: Different peak flow meters may give different readings, so always use the same peak flow meter. Bring your peak flow meter with you when you or your child has a routine medical visit or needs to go to the clinic, hospital, or Emergency Department.

WHO CAN USE A PEAK FLOW METER?

Most people over age 5 can use a peak flow meter. Ask your doctor about a peak flow meter for yourself or your child. Also, ask your doctor to check how well you or your child uses the peak flow meter.

HOW TO USE A PEAK FLOW METER

Follow these steps, or give these instructions to your child:



1. Stand up straight.
2. Put the indicator at the bottom of the scale.
3. Breathe in as much air as your lungs will hold.
4. Place the mouthpiece of the flow meter in your mouth and close your lips around the mouthpiece. Be sure no holes are covered by your hands or fingers.
5. Blow into the meter as hard and fast as you can.
6. Write down the peak flow reading.
7. Repeat steps 1-6 three times. The highest of the three readings is your peak flow reading. Do not average the readings.

FIGURING OUT THE “PERSONAL BEST” PEAK FLOW

At a time when you or your child is feeling well, measure and write down the peak flow 2 times a day for 1 to 2 weeks. The “personal best” peak flow reading is the highest peak flow reading you get at least 3 separate times.

After you figure out your own or your child's "personal best" peak flow, write it here:

My personal best _____

My child's personal best _____

The "personal best" peak flow will increase naturally as a child grows. "Personal best" peak flows should be updated every 3 months for a growing child.

WHEN TO MEASURE THE PEAK FLOW

- After you have figured out your "personal best" peak flow, it's a good idea to check your peak flow every morning before taking your asthma medicine.
- Even when you or your child is feeling well, check the peak flow at least 2 times a week.
- If you or your child is having asthma symptoms (or have a cold or the flu), it's important to check the peak flow at least twice a day.





USING AN ASTHMA DIARY

You or your child can keep track of symptoms and peak flow measurements by writing them in an asthma diary. (Your doctor can give you one or you can make your own.) Keeping an asthma diary can help you figure out:

- what triggers the asthma
- whether the medicines are working
- when flare-ups are starting

sample child asthma action plan

PLANS FOR THE GREEN, YELLOW, AND RED ZONES

 KAISER PERMANENTE.		Date _____	Provider _____
MY ASTHMA ACTION PLAN		MRN _____	Patient _____
 Green Zone		Prevent asthma symptoms every day and feel good!	
DOING WELL!	Take control medicines (controllers or preventers) every day. Use _____ puffs _____ times a day: <input type="checkbox"/> QVAR 40 / 80 <input type="checkbox"/> Advair 100 / 250 / 500 <input type="checkbox"/> Asmanex 110 / 220 (age > 4) <input type="checkbox"/> Singulair 4mg / 5mg / 10mg (take one tablet a day, at nighttime.) <input type="checkbox"/> Flovent 44 / 110 / 220 <input type="checkbox"/> Dulera 100/5 and 200/5 <input type="checkbox"/> Pulmicort Respules 0.25 UD / 0.5 UD		
<ul style="list-style-type: none">No cough, wheeze, chest tightness, or shortness of breathFeel good doing usual activitiesUse quick-relief medicines less than twice a week (except for exercise)	<p><i>Remember to rinse your mouth with water after using an inhaler!</i></p> If activity or exercise causes asthma symptoms, take quick-relief medicines. Use _____ puffs 15-30 minutes before starting activity or exercise: <input type="checkbox"/> Albuterol HFA (ProAir HFA, Ventolin HFA, Proventil HFA)		
Peak Flow (age 5 and up): _____ or more (80-90% of personal best)	Avoid things that increase asthma symptoms. (See other side for a checklist of triggers.)		
Personal Best Peak Flow (age 5 and up): _____	Other Medication:		
	Remember! Using a spacer with your inhaler gets more medicine into your lungs and lowers side effects.		
 Yellow Zone		Take action to get back in the green zone.	
CAUTION	CALL YOUR DOCTOR OR ADVISE NURSE IF YOUR SYMPTOMS GET WORSE OR DO NOT IMPROVE, OR IF YOU HAVE ANY CONCERNS! Phone Number _____		
<ul style="list-style-type: none">Slight cough, wheeze, chest tightness, or shortness of breathMild chest congestion from cold or allergiesCannot do all of your normal activitiesRegular breathing is a little faster than normalWaking up at night with coughUsing quick-relief medicines twice or more a week (except before exercise)	Take quick-relief medicines to improve your asthma symptoms. Use _____ puffs every _____ hours for up to _____ days until your symptoms resolve. <input type="checkbox"/> Albuterol HFA (ProAir HFA, Ventolin HFA, Proventil HFA) <input type="checkbox"/> Albuterol Nebulizer Solution 1 vial / 0.5mL + 0.3mL saline.		
Peak Flow (age 5 and up): _____ to _____ (50-60% to less than 80-90% of personal best)	Increase control medicines (controllers or preventers) until you are back in the Green Zone. Use _____ puffs _____ times a day for _____ weeks: <input type="checkbox"/> QVAR 40 / 80 <input type="checkbox"/> Advair 100 / 250 / 500 <input type="checkbox"/> Asmanex 110 / 220 (age > 4) <input type="checkbox"/> Singulair 4mg / 5mg / 10mg (take one tablet a day, at nighttime.) <input type="checkbox"/> Flovent 44 / 110 / 220 <input type="checkbox"/> Dulera 100/5 and 200/5 <input type="checkbox"/> Pulmicort Respules 0.25 UD / 0.5 UD		
	<p><i>Remember to rinse your mouth with water after using an inhaler!</i></p> Other Medication:		
 Red Zone		GET HELP NOW!	
FLARE-UP	TO BE SEEN TODAY, CALL _____		
<ul style="list-style-type: none">Persistent cough or wheezeVery short of breathCannot do usual activitiesWaking up more than once at night with cough or wheezeFast breathingSymptoms are not getting better after 2 days in the Yellow Zone	FLARE-UP		
Peak Flow (age 5 and up): _____ (less than 50-60% of personal best)	Take quick-relief medicines. <input type="checkbox"/> Albuterol HFA (ProAir HFA, Ventolin HFA, Proventil HFA). Use _____ puffs. <input type="checkbox"/> Albuterol Nebulizer Solution 1 vial / 0.5mL + 0.3mL saline.		
	If symptoms do not improve after 20 minutes, take quick-relief medicines again. Call your doctor. You need to be seen immediately! If symptoms still do not improve after 20 more minutes, take quick-relief medicines a third time. <i>Do not take quick-relief medicines more than three times.</i>		
	Take flare-up (burst) medicines. <input type="checkbox"/> Prednisone _____ mg tablets: _____ tabs _____ times a day. <input type="checkbox"/> Prednisolone _____ mg/5ml syrup: _____ tsp(s), _____ times a day.		
	Increase control medicines (controllers or preventers). Use _____ puffs _____ times a day for _____ weeks: <input type="checkbox"/> QVAR 40 / 80 <input type="checkbox"/> Advair 100 / 250 / 500 <input type="checkbox"/> Asmanex 110 / 220 (age > 4) <input type="checkbox"/> Singulair 4mg / 5mg / 10mg (take one tablet a day, at nighttime.) <input type="checkbox"/> Flovent 44 / 110 / 220 <input type="checkbox"/> Dulera 100/5 and 200/5 <input type="checkbox"/> Pulmicort Respules 0.25 UD / 0.5 UD		
	<p><i>Remember to rinse your mouth with water after using an inhaler!</i></p>		
DANGER! Call 911 immediately if:	<ul style="list-style-type: none">Child does not respond normally.Child is breathing so hard that s/he cannot walk or talk.Lips or fingernails are blue or gray.		
<ul style="list-style-type: none">Child is breathing very hard or fast.Skin is sucked in around neck, ribs, or stomach during breaths.			
05081-028 (Revised 11-11)	DISTRIBUTION: WHITE = PATIENT • YELLOW = SCHOOL, CHILD CARE		

sample adult asthma self-management plan

KNOW YOUR ASTHMA TRIGGERS

Asthma triggers can cause symptoms and flare-ups. Limiting exposure to them will help keep you in the Green Zone, feeling good. Each person has different triggers. What are yours?

INFECTIONS

Infections are one of the most common triggers.

- colds and flu
- sinus infections
- bronchitis and pneumonia

AIR POLLUTANTS AND OTHER IRRITANTS THAT MAY BOTHER YOUR LUNGS

- smoke from cigarettes, cigars, fireplaces, wood burning stoves, or incense
- smog
- plug-ins or air fresheners
- perfumes or other fragrances
- aerosol sprays, including hair spray
- strong chemical fumes from kitchen and bathroom cleaners, paints, and glues

COMMON ALLERGIES

Allergy testing can tell you which allergens you should avoid. Ask your doctor if allergy testing would be helpful.

- dust mites: tiny microbes too small to see without a microscope that live in household dust and bedding
- pets that have fur or feathers
- cockroaches
- molds which can grow in damp areas, such as the kitchen, the bathroom, and in the soil of houseplants
- pollen from grasses, trees, and weeds *

PHYSICAL ACTIVITY

Even though physical activity can be a trigger, it is still important to keep physically active. You can use medicines to help control asthma that is triggered by physical activity.

- exercise
- intense activity (climbing stairs, hauling heavy objects, etc.)

OTHER TRIGGERS

- stress
- changes in weather *
- cold, dry air *
- sulfites, a preservative found in dried fruits, wine, condiments, and certain other foods
- live Christmas trees
- aspirin or aspirin-like drugs, such as ibuprofen (In rare cases, these can trigger severe asthma attacks, more often in adults than in children.)

* Don't stay inside – but do everything you can to offset the effects of pollen and other outdoor triggers.

For more information and resources, visit your doctor's home page at kp.org/mydoctor or kp.org/asthma.

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor. If you have questions or need more information about your medication, please speak to your pharmacist. Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only.

If you have an emergency medical condition, call 911 or go to the nearest hospital.

An emergency medical condition is (1) a medical or psychiatric condition that manifests itself by acute symptoms of sufficient severity (including severe pain) such that you could reasonably expect the absence of immediate medical attention to result in serious jeopardy to your health or body functions or organs; or (2) active labor when there isn't enough time for safe transfer to a Plan hospital (or designated hospital) before delivery, or if transfer poses a threat to your (or your unborn child's) health and safety.

understanding and using an asthma plan

Asthma does not stay the same all the time. Each person's asthma is different, so it is important that you and your doctor work together to come up with a written asthma plan. (The forms on [PAGES 28](#) and [29](#) are examples.) The plan tells you which medicines to use when you or your child is:

- in good control (in the **"GREEN ZONE"**)
- having a mild or moderate flare-up (in the **"YELLOW ZONE"**)
- having a severe flare-up (in the **"RED ZONE"**)

You will know which zone you or your child is in by checking symptoms, peak flow readings, or both. Below is some general information about managing asthma in each zone. Remember that **your own personal plan** may differ from what you read here.

GREEN ZONE

In the green zone, asthma is in good control. Peak flow readings are between 80 and 100 percent of the "personal best." You or your child don't have asthma symptoms and feel well. The best way to manage asthma in the green zone is to avoid triggers and to use your medicines as prescribed. This may mean using both a long-term control medicine and a quick-relief medicine.

YELLOW ZONE

In the yellow zone, a flare-up is starting. Peak flow readings are between 50 and 80 percent of "personal best." You or your child may be wheezing or having other symptoms such as coughing, shortness of breath or difficulty breathing. If you or your child are using quick-relief medicine more than 2 days a week (other than for physical activity), you are in the yellow zone. The best way to manage asthma in the yellow zone is to avoid triggers and use asthma medicines according to the yellow zone plan. This may mean using more of the long-term control medicine and also using more quick-relief medicine.

understanding and using an asthma plan

Note: Yellow zone symptoms may seem mild at first, but a flare-up can get worse quickly if you don't take action. Be prepared to start using the yellow zone plan if your peak flow reading goes down even before you notice symptoms. Here are some guidelines:

- If you or your child is in the yellow zone and following the yellow zone plan for 2 days without getting better, call your doctor.
- If you or your child is in the yellow zone once a week or more, your asthma is not in good control. Contact your doctor to discuss your asthma plan.
- If you or your child is having cold, flu, or allergy symptoms, check the peak flow at least 2 times a day.

RED ZONE

In the red zone, a severe flare-up has started. This can be very dangerous. Peak flow readings are lower than 50 percent of the “personal best.” For adults and children of all ages, symptoms in the red zone may include:

- persistent coughing, wheezing, or chest tightness
- waking up several times a night due to coughing or wheezing
- taking longer to breathe out than to breathe in

The usual way to manage asthma in the red zone is to do the following (**in this order**):

1. Use quick-relief medicine immediately, taking 4 to 6 puffs from an inhaler or a nebulizer treatment. Repeat this every 20 minutes, but no more than 3 times. (Follow your own asthma action plan instructions if they differ from these.)
2. Take the flare-up reversing (“burst”) medicine prescribed by your doctor and continue to take your controller medicines.
3. If you have followed these steps and you still have symptoms, contact your doctor or go to the Emergency Department.
4. If you or your child have recently been in the red zone for asthma, it's important to contact your doctor. Stay on the red zone plan until your doctor says it is all right to stop.

DANGER SIGNS

In the red zone, it's important to watch for danger signs. The danger signs mean that there is a higher risk of dying from a severe asthma flare-up. Call 911 or go to the nearest Emergency Department immediately if you or your child has any of the following signs:

- difficulty talking, walking, or any signs of exertion due to breathing problems
- severe shortness of breath
- nostrils that flare (widen) with each breath
- skin pulled tight between the ribs or at the base of your throat
- wheezing when breathing in and when breathing out
- lips or nails turn blue

Infants and toddlers have some additional danger signs to watch for:

- breathing rate over 50 breaths a minute for an infant aged less than 1 year
- breathing rate over 40 breaths a minute for a toddler

Note: To measure a child's breathing rate, count the number of times the chest rises and falls in one minute while the child is resting or asleep. If you cannot see the chest rise and fall, place a moistened finger under the nose to feel each breath.

Be sure to have a plan for getting emergency care quickly.
Always carry quick-relief medicine.

asthma and physical activity

Regular physical activity makes your heart and lungs stronger and helps reduce stress. It also can improve asthma. It is important for everyone to be physically active.

You or your child can be physically active or play sports even with asthma. In fact, many professional and Olympic athletes have asthma. The key is for you or your child to prevent and manage flare-ups by doing the following:

- Make sure asthma is in good control before starting physical activity.
- If needed, take 2 puffs of your quick-relief medicine about 10 to 15 minutes before starting physical activity.
- Wear a scarf or mask over your nose and mouth if the weather is cold and dry.
- Be physically active indoors if there are high levels of outdoor triggers, such as pollen and smoke, and be careful exercising when the weather is hot and windy.
- Try swimming in an outdoor pool. This is an activity that doesn't usually trigger asthma symptoms. Indoor pools may have higher levels of chlorine, which can cause problems for people with asthma.

If you are still having problems with physical activity, talk with your doctor.



relaxation and stress management

In addition to medications, relaxation and stress-management techniques can help control asthma symptoms. One relaxation technique you can try is called “deep breathing relaxation,” or “belly breathing.” Follow these steps or give these instructions to your child:

1. Put one hand on your belly. Put the other hand on your chest, right in the middle.
2. When you breathe in, push your belly out. You should feel the hand on your belly move out, but not the hand on your chest.
3. Close your eyes and push all the air out of your lungs through your mouth while almost closing your lips. Imagine that you are blowing up a balloon.
4. Next, take a slow, deep breath. Fill your lungs up, and feel your belly rise.
5. Breathe in and out three times in this deeper way.

For more information on relaxation and stress management, see kp.org/listen (PAGE 37) and/or consider a class (PAGE 39).

There may be times when relaxation and stress management techniques are not enough. In those cases, additional help may be needed. Talk with your doctor about the resources available at your Kaiser Permanente facility.



Managing asthma at work, school, and child care is as important as managing it at home. Work with your supervisor, or with your child's school and caregivers (such as babysitters), to make sure asthma stays in good control.

HOW TO MANAGE YOUR ASTHMA AT WORK

- Keep a set of your medicines with you at work.
- Keep a copy of your asthma plan with you.
- Talk with your supervisor about anything you need at work to control your asthma, such as...
 - keeping your work area free of triggers (PAGES 5-6)
 - taking your medicines when needed
 - taking breaks when needed
 - changing job duties as needed

HOW TO MANAGE YOUR CHILD'S ASTHMA AT SCHOOL OR CHILD CARE

- Keep a set of your child's medicines at school and at child care.
- Give the school and the caregivers a copy of your child's asthma plan. Make sure they know how to use it.
- Talk with your child's school and caregivers about...
 - helping your child to avoid triggers (PAGES 5-10)
 - allowing your child to take asthma medicines when needed
 - encouraging your child to be physically active, but allowing breaks or suggesting alternative activities, if your child is having a flare-up. See PAGES 8 AND 33 for more information about physical activity.

follow-up visits with your medical professional

Regular visits with your doctor can help reduce the chances that you or your child will go to the Emergency Department or spend time in the hospital because of asthma. If you or your child do not have a personal physician, please contact the appropriate department (Adult or Internal Medicine, Family Practice, or Pediatrics) at your medical center, or visit kp.org/mydoctor to choose a doctor. You can also visit your facility's Member Services Department or call 1-800-464-4000 for more information about choosing a doctor.



Kaiser Permanente has information and tools for people with asthma.

KAISER PERMANENTE ONLINE RESOURCES

1. kp.org/mydoctor – My Doctor Online is your gateway to a wealth of Kaiser Permanente resources. You can email your doctor, find reliable health information, learn about your doctor’s background and interests, view videos and interactive tools, and access time-saving online appointment and refill functions. You’ll also find links to the latest information about asthma care and management, including a copy of the asthma action plan and other helpful resources.
2. kp.org/asthma – The asthma “featured health topic” brings together online resources and tools—all collected in one convenient place. Here you’ll learn about controlling asthma in adults and children, asthma medications, tools for managing your asthma symptoms, and much more.
3. kp.org/healthyliving – Staying healthy is about making good choices. Kaiser Permanente’s customized online programs are designed to help you live well and thrive. In collaboration with HealthMedia®, we offer free programs for Kaiser Permanente members. Get a personalized health risk assessment as well as encouragement to make healthy changes—when you join our HealthMedia® Care™ for Your Health program.
4. kp.org/listen – Relaxation and stress management (guided imagery) podcasts are available for you to listen to, in order to help you to relax. Guided imagery is a type of relaxation exercise designed to engage your mind, body, and spirit. Guided imagery is gentle, but powerful. Research shows guided imagery can help:
 - relax, calm, and improve your mood
 - lower blood pressure, blood sugar, and cholesterol
 - inspire and motivate
 - lower anxiety and depressionAll you have to do is settle in, relax, and listen.

asthma education and resources

5. kp.org/quitsmoking – Quitting smoking is one of the best things you can do to help your own health as well as to improve your child's asthma. If you're a smoker thinking about quitting and looking for support, this is a great place to get the help that you need. Support for quitting smoking is also available at 1-800-NO-BUTTS.

EDUCATIONAL MATERIALS (VIDEOS, DVD AND BOOKS)

Understanding Your Asthma DVD (2007)

This DVD covers basic asthma management skills for adults, including how to:

- recognize symptoms
- identify and control triggers
- use an inhaler, a spacer, and a peak flow meter

It is available in English and Spanish.

Source:

- Kaiser Permanente Health Education Centers (\$5.00)
- View it online for free by going to your doctor's home page, at kp.org/mydoctor, and selecting "videos" under "Healthy Living Resources."



Understanding your Child's Asthma DVD (2006)

This Kaiser Permanente DVD will help you learn the skills you need to help your child improve asthma control and prevent flare-ups. It includes detailed instructions on how to use the peak flow meter and MDI with spacers.

Spanish DVD also available: **El asma y el cuidado de su niño.**

Source:

- Kaiser Permanente Health Education Centers (\$5.00)
- View it online for free by going to your doctor's home page, at kp.org/mydoctor, and selecting "videos" under "Healthy Living Resources."

HEALTH EDUCATION CLASSES

- Asthma classes are available at most Kaiser Permanente medical centers. Ask your medical professional or your health educator for the class nearest you.
- Relaxation and stress management classes are available at many Kaiser Permanente medical centers. Ask your doctor or your health educator for information.

ASTHMA WEBSITES FOR KIDS AND TEENS

- Online interactive asthma game for kids and teens, ages 7 to 15, to learn asthma self-management skills: starlight.org/asthma
- Games and activities for kids to learn about asthma: asthmakids.ca
- Kid-friendly activities from the American Academy of Allergy, Asthma & Immunology: aaaai.org/patients/just4kids
- Fun activities for kids to learn about asthma in English and Spanish from the National Jewish Medical and Research Center: [national-jewish.org/healthinfo/pediatric/asthma/asthma-wizard/](http://nationaljewish.org/healthinfo/pediatric/asthma/asthma-wizard/)

ALLERGY-CONTROL PRODUCTS COMPANIES AND ASTHMA ORGANIZATIONS

Allergy-control products companies

- **Allergy Supply Company**
(800) 323-6744
Fax: (703) 391-2014
allergysupply.com
- **Allergy Control Products, Inc.**
(800) 422-3878
Fax: (203) 431-8963
allergycontrol.com
- **National Allergy Supply**
(800) 522-1448
Fax: (770) 623-5568
natlallergy.com

Asthma organizations

- **Allergy and Asthma Network/Mothers of Asthmatics**
(AANMA)
2751 Prosperity Ave., Suite 150
Fairfax, VA 22031
(800) 878-4403
Fax: (703) 352-4354
aanma.org
- **American Academy of Allergy, Asthma and Immunology**
611 East Wells St.
Milwaukee, WI 53202
(414) 272-6071
Fax: (414) 272-6070
aaaai.org
- **American Lung Association**
(800) LUNG-USA or (800) 586-4872
lungusa.org

- **Asthma and Allergy Foundation of America**
5225 Wilshire Blvd., Suite 705
Los Angeles, CA 90036
(800) 727-8462
aafa.org
- **Sneeze.com**
(800) 469-6673
sneeze.com
- **National Jewish Medical and Research Center – Lung Line**
1400 Jackson Street
Denver, CO 80206-2762
(800) 222-LUNG
njc.org
- **National Heart, Lung, and Blood Institute**
P.O. Box 30105
Bethesda, MD 20824-0105
(301) 592-8573
Fax: (301) 592-8563
nhlbi.nih.gov

If you have an emergency medical condition, call 911 or go to the nearest hospital.

An emergency medical condition is any of the following: (1) a medical condition that manifests itself by acute symptoms of sufficient severity (including severe pain) such that you could reasonably expect the absence of immediate medical attention to result in serious jeopardy to your health or body functions or organs; (2) active labor when there isn't enough time for safe transfer to a Plan hospital (or designated hospital) before delivery, or if transfer poses a threat to your (or your unborn child's) health and safety, or (3) a mental disorder that manifests itself by acute symptoms of sufficient severity such that either you are an immediate danger to yourself or others, or you are not immediately able to provide for, or use, food, shelter, or clothing, due to the mental disorder.

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor. Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only.

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