Learning About Asthma
To Our Patients:

Your caregiver has made a diagnosis of asthma in you or your family member. We know that you have many questions about asthma such as what it is, how to treat it, and how it will affect your life. As we treat and monitor you or your family member, we will try to answer all of these questions, and more, so that you can learn to take control of your asthma.

While you are in our care, many people will speak to you about asthma. We know it is hard to remember everything, so we are giving you this packet of information to review when you are at home, and to share with others who may be affected by your asthma. The information in this packet has come from many resources. Much of it was developed by teams of asthma specialists, caregivers and educators throughout the State of Michigan to give our patients accurate, up-to-date information about asthma and how to take care of it. Other portions have been written by University of Michigan faculty and still other sections are taken from selected professional web sites. All outside sources are listed in the resources and we encourage you to take advantage of their information. As new information becomes available, we will attempt to update this packet.

Asthma care is a partnership between us, your caregivers, and you. To maintain optimal health, you need to understand your asthma, the medications to use and how to be aware of changes in the state of your lungs before you get into serious difficulty. This is not an easy task, and it will take you a while to feel comfortable with this. Feel free to ask questions if you don’t understand things, write questions down to review at your office visit, and consult the other sources of information mentioned in this pamphlet.

You CAN learn to control your asthma, and not let it run your life!
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**What is Asthma?**

Asthma is a chronic and potentially life-threatening lung disease in which airways become inflamed, leading to episodes of breathing difficulty (e.g. coughing, wheezing, shortness of breath). It is estimated that 20 million Americans suffer from asthma. Of these, 10 million (including 3 million children) suffer specifically from allergic asthma, according to the National Institute of Environmental Health Sciences.

Asthma cannot be cured, but it can be treated and controlled. When you have asthma, your airways are sensitive, or “twitchy.” They may react to many things. These things are called triggers. People who have asthma may wheeze or complain of feeling “tight” in the chest. They may also cough a lot when their asthma is not under control.

**Is Asthma a Serious Disease?**

Asthma is a serious disease, and can kill if it is not treated the right way. When it is treated the right way, people with asthma can live normal, active lives.

**What are the Symptoms of Asthma?**

Not all people with asthma have the same symptoms, however, the most common symptoms are:

- Shortness of breath, chest “tightness”
- Wheezing
- Cough lasting more than a week, or that happens during the night or after exercise
- Chronic cough (sometimes coughing is the only symptom you will have)
- When you have a cold, it lasts for more than 10 days, and goes into your chest

**Who Gets Asthma?**

Anyone can get asthma, at any age. Sometimes it starts in infancy, other times it starts later in childhood. Although some children seem to “outgrow” asthma, the disease never really goes away; there is just a time when you are not having any breathing problems. Asthma can also start at any time during adulthood, including the senior years. Some people start having asthma symptoms after a bad cold or flu. Other people develop asthma after a work-related exposure. If you suspect that you have asthma, see your doctor or health care provider.

**Asthma Triggers**

People with asthma have airways that are very twitchy or sensitive. They may react to things that can make asthma symptoms start. These things are called “asthma triggers”. Each person has different triggers. It is important to learn what your own triggers are.

Common asthma triggers include:
- Exercise
- Viral Infections
- Tobacco and other smoke
- Strong odors
- Heartburn or acid reflux (GERD)
- Allergies
  - House dust mite
  - Animals
  - Cockroaches
  - Mold
  - Food

**What is an Asthma Attack?**

An asthma “attack” or episode is a time when asthma symptoms flare up. The symptoms can be mild or severe. Anyone can have a severe attack, even a person with mild asthma. The attack can start suddenly or slowly. Sometimes a mild attack will seem to go away, but will come back a few hours later, and the second attack may be much worse than the first. Severe asthma symptoms need medical care right away.

**Normal Airway**

During an asthma attack, the lining of the airways in the lungs swells and the mucus glands make more mucus. The muscles around the airways tighten and make the airways narrower. All of these changes in the lungs block the flow of air, making it hard to breathe. Knowing what is happening in the lungs during an asthma attack will help you to know why it often takes more than one medicine to treat the disease.
What Can Be Done During an Asthma Attack?

The best time to plan for an asthma attack is long before one happens, at the doctor’s office. There, the doctor, the person with asthma and their family can make an Asthma Action Plan that will tell them what to do if asthma symptoms start.

Along with following the Asthma Action Plan, here are some other helpful hints:

1. Stay calm, and try to relax. It isn’t easy! But the more you panic, the worse your breathing will get.

2. Tell someone that you are having asthma symptoms. Get help if you need it. Don’t try to tough it out alone!

3. Take the quick-relief medication as your Asthma Action Plan tells you to. Not sure which medication is the quick-relief one? Ask your doctor, asthma counselor, or pharmacist about it before you need it in an emergency!

4. If the quick-relief medicine hasn’t helped in 5-10 minutes, call the doctor or 911.

5. Keep taking the quick-relief medicine every 5-10 minutes until the ambulance arrives.

6. Do not take the quick-relief medicine this often without seeking emergency care.

What Can You Expect from Your Asthma Treatment?

With proper treatment for your asthma, you should be able to:

- Stay active and symptom free (this includes exercising and playing sports)
- Reduce or even prevent asthma symptoms
- Maintain normal functioning
- No missed school or work because of asthma
- No or minimal need for emergency department visits or hospitalizations
- Sleep through the night without having asthma symptoms
- Have no or very few side effects from asthma medicines
- Have normal or near normal lung function
- Be satisfied with your asthma care

Never adjust your asthma medications or change how much you take unless your doctor has written it in your Asthma Action Plan or told you to do so over the phone.
Asthma attacks or episodes hardly ever happen without warning. The warning signs for an attack are not the same for everyone. They may be mild, and may not seem to be related to asthma. Warning signs may start 24 to 48 hours before an asthma attack begins, and should be treated as early asthma symptoms. You and your doctor or asthma counselor should include your warning signs on your Asthma Action Plan. By knowing your warning signs and treating them quickly, you may be able to avoid an asthma attack.

Think back to your last asthma attack. Did you have any of the signs below? Check off the warning signs that have happened to you, at the beginning of an attack, or when the asthma is not under control. Show them to your doctor and family.

### EARLY WARNING SIGNS
- Itchy chin
- A cough that doesn’t go away, especially at night
- Itchy, scratchy or sore throat
- Waking up at night
- Dark circles under eyes
- Runny, stuffy or congested nose
- Increased tiredness
- Peak flow readings in the “Yellow Zone”
- Mood change — grouchy or extra quiet
- Thirst
- Itchy, glassy or watery eyes
- Rubbing nose a lot
- Sneezing
- Stomach ache
- Headache
- Fever
- Feeling restless
- Change in face color — pale or flushed
- Throat clearing
- Eczema flare-up
- Other:

### SIGNS that an asthma attack is starting...ACT FAST!
- Cough
- Wheeze
- It feels hard to breathe out
- Chest feels “tight” or hurts
- Breathing faster than normal
- Get out of breath easy
- Drop in peak flow readings
- Other: _______________________

### DANGER SIGNS! Asthma is out of control....
- Bluish, gray or dusky color to lips and nail beds
- Trouble walking
- Trouble talking — can’t speak in whole sentences
- Skin between ribs or above breastbone sucks in when breathing (retractions)
- Fast heartbeat or pulse
- Peak flow reading in the “Red Zone”
- Nostrils flare when breathing
- Quick-relief medications do not work
- Other: _______________________

If you experience any of the warning signs above, follow your Asthma Action Plan and contact your doctor if necessary.
Asthma Medications

Most people with asthma take more than one kind of medicine. How much medicine to take and in what order to take it can be confusing. For your medicine to work, you must take it as your doctor tells you. Your Personal Care Plan (also referred to as your Asthma Action Plan or Asthma Management Plan) lists the medicines that your health care team has prescribed. Be sure to ask questions so you’ll know exactly what to take, why you are taking it, when to take it and how to take it.

There are two main kinds of asthma medications: Long-term control medications and quick-relief medications.

Long-term Control Medications

Long-term control medications help prevent and reverse asthma attacks. They decrease the swelling in the airways. These medicines treat the disease, not just the symptoms. Long-term control medications must be used every day for them to work. You must take them even when you are feeling well. It takes a few weeks before they begin to decrease the swelling that leads to asthma symptoms.

Long-term control medications cannot help the symptoms of an acute attack. But, they should be continued when you start your quick-relief medication. Other common names for long-term control medications are: maintenance, controllers or preventive medications.

Long-term control medications include inhaled corticosteroids, combination therapies, inhaled mast cell stabilizers and leukotriene modifiers.

Inhaled Corticosteroids include the following:

- Flovent HFA (fluticasone)
- Pulmicort and Pulmicort Respules (budesonide)
- Asmanex (mometasone)
- Azmacort (triamcinolone)
- QVAR (beclomethasone)
- Aerobid (flunisolide)

A spacer device should always be used with inhaled steroids that are delivered by a metered dose inhaler. The most common side effects of inhaled corticosteroids are yeast infections in the mouth (thrush) and hoarseness. Brush your teeth or rinse your mouth after using inhaled steroids to prevent thrush. A spacer will also help prevent thrush and improves the delivery of the drug.

Combination therapies include the following:

- Advair (fluticasone and salmeterol)
- Symbicort (budesonide and formoterol fumarate)

These contain inhaled corticosteroids and long-acting bronchodilators. Like all long-term control medications, combination therapies should be used every day.

Combination drugs contain inhaled corticosteroids. Brush your teeth or rinse your mouth and spit after using the medication to prevent thrush. The Advair Diskus is not used with a spacer.
Understanding **Asthma Medications**

**Long-term Control Medications (continued):**

*Inhaled mast cell stabilizers include the following:*

- Intal (cromolyn)
- Tilade (nedocromil)

These are non-steroidal medications that reduce and control the swelling of the airways. These drugs must be taken regularly for several weeks for the drug to work. Some people use it every day; others use it just before exercise. Remember, like all long-term control medications, it does not open up your airways during asthma flares and should not be used as a quick-relief medication.

*Leukotriene modifiers include the following:*

- Singulair (montelukast)
- Accolate (zafirlukast)
- Zyflo (zieuton)

Leukotriene modifiers only come in pill form. It may decrease your asthma symptoms and protect you from certain triggers, such as exercise, cold air, and aspirin.

The most common side effects of these medicines are:

- stomach pain
- nausea
- headaches.
- they may affect your liver and sometimes require lab tests

**Quick-Relief Medications:**

Quick-Relief medications help stop symptoms of asthma attacks by opening up lung airways. These medicines can relieve symptoms within minutes. But they do not reduce or prevent the swelling that causes the symptoms. Every asthmatic, regardless of how bad their asthma is, should have a quick-relief medication available. If you have to use your quick-relief medication more than two times per week to relieve asthma symptoms, talk to your health care provider about adding a long-term control medication. Other common names for quick-relief medications are: relievers, rescue medications, or bronchodilators.

*Some commonly used quick-relief medications are:*

- Proventil, Proventil HFA, Ventolin HFA (albuterol)
- Maxair (pirbuterol acetate)
- Xopenex (lev-albuterol)
- Alupent (metaproterenol)

*Some possible side effects of taking quick-relief medications are:*

- Rapid heartbeat
- Nervousness
- Tremors
- Shakiness
- Nausea
Other Medications Used for Asthma:

- Oral corticosteroids
- Long-acting bronchodilators
- Anti-IgE medication

**Oral corticosteroids** are used for severe attacks and include:

- Prednisone tablets or liquid
- Prednisolone liquid

Do not stop taking these medicines or change the dose unless your doctor tells you to. Never take oral corticosteroids on an empty stomach. Taking these medicines with food will help to reduce stomach upset. Avoid salty foods while taking these medicines.

Consult your doctor if you have any of these problems:

- increased appetite
- weight gain
- fluid retention
- acne
- mood swings
- swelling of the face
- high blood pressure
- changes in blood sugar
- joint discomfort.

**Long-acting bronchodilators** include the following:

- Serevent (salmeterol)
- Foradil (formoterol fumarate)

They work to open the airways in the same way that quick-relief medication does. Long-acting bronchodilators are different from quick-relief medications because they take longer to start working and last 10 to 12 hours. They should **never** be used without an inhaled corticosteroid and **should not be used for an asthma attack.**

**Anti-IgE medication**

The only **anti-IgE medication** available at this time is Xolair (omalizumab). It is given every two to four weeks by injection and should be limited to patients that are 12 years or older and have moderate to severe allergic asthma who are not controlled with appropriate asthma therapy or have complications with or the inability to use standard asthma medications.
<table>
<thead>
<tr>
<th>COMMON NAME OF MEDICATION</th>
<th>TYPE OF MEDICATION</th>
<th>HOW THEY WORK</th>
<th>WHEN ARE THEY USED?</th>
</tr>
</thead>
</table>
| Flovent HFA               | Long-term Control  | • Reduces airway swelling  
| Pulmicort Turbuhaler     | Inhaled Corticosteroids | • Reduces asthma symptoms and need for quick-relief medications | Daily  
| Pulmicort Respules        |                    |               | Control of persistent asthma symptoms |
| Asmanex                   |                    |               |                   |
| Azmacort                  |                    |               |                   |
| QVar                      |                    |               |                   |
| Aerobid                   |                    |               |                   |
| Advair                    | Long-term Control  | • Reduces airway swelling  
| Symbicort                 | Combination drug-  | • Relaxes the muscles around the airways.  
|                           | contain inhaled    | • Takes about one hour to start working, last up to 12 hours | Daily  
|                           | corticosteroids and long-acting beta-agonist | | Control of persistent asthma symptoms  
|                           |                    |               | Reduces asthma symptoms and need for quick-relief medications |
| Intal                     | Long-term Control  | • Blocks airway swelling  
| Tilade                    | Mast Cell Stabilizers | • Reduces need for quick-relief medications | Alternative to low-dose inhaled steroids |
|                           |                    |               |                   |
| Singulair                 | Long-term Control  | • Blocks airway swelling  
| Accolate                  | Leukotriene Modifier | • Reduces asthma symptoms and need for quick-relief medications | Used alone or together with inhaled steroids |
| Zyflo                     |                    |               |                   |
| Albuterol                 | Quick Relief/ Rescue | • Quickly relaxes the muscles around the airways.  
| Proventil HFA             | Short-acting Beta-agonist | • Takes about 15 minutes to start working.  
| Ventolin HFA              |                    | • Only lasts 4 to 6 hours. | Quick-relief of asthma symptoms  
| Maxair Autohaler          |                    |               | Treat exercise induced asthma  
| Xopenex                   |                    |               | Contact your doctor if you need to use this medication more than two times per week for asthma symptoms  
| Alupent                   |                    |               |                   |
| Pediapred                 | Quick Relief/ Rescue | • Reduces airway swelling | Given for a short period of time to gain control of poorly controlled asthma  
| Prelone                   | Oral Corticosteroid |               | Given long-term for people with severe persistent asthma |
| Prednisone                |                    |               |                   |
| Prednisolone              |                    |               |                   |
| Orapred                   |                    |               |                   |
| Medrol Dosepak            |                    |               |                   |
| Serevent                 | Long-term Control  | • Relaxes airway muscles  
| Foradil                   | Long-acting Beta-agonist | • Slower onset, longer duration than short-term beta-agonists  
|                           |                    | • Does NOT treat acute symptoms | Given for a short period of time to gain control of poorly controlled asthma  
|                           |                    |               | Given long-term for people with severe persistent asthma |
| Xolair                    | Long-term Control  | • Blocks allergic response | Moderate to severe allergic asthma that is not controlled with other medications |
|                           | Anti- IgE           |               |                   |
Q: Will you get big and muscular using an inhaled long-term controller steroid medicine?

A: NO. The corticosteroids used in your controller medicine are different than the anabolic steroids people use to build large muscles, and work in a different way. The corticosteroids in your inhaler are a lot like those made naturally in your body. When you inhale them, they go down your airway to get rid of the inflammation (swelling) that causes asthma symptoms. You only need a small dose of corticosteroids because they are working directly on your lungs, and have fewer side effects than oral steroids.

Q: Will I gain weight by taking inhaled steroids or steroid tablets?

A: NO. Your inhaler contains such a low dose of steroids that it will not make you put on weight. Sometimes steroid tablets can make you feel hungry, and eating more will make you start to gain weight. The tablets themselves don't make you gain, so eat your normal amounts while you take them and your weight should be fine.

Q: What are the side-effects from inhaled steroids or steroid tablets?

A: Your controller inhaler might make you a little hoarse every now and then, because some of the medicine can stay in your mouth and throat if you don't use a valved-holding chamber or spacer. It's also possible to get thrush in the back of your throat or tongue from this medicine. You can prevent this by making it a practice of brushing your teeth, gargling and spitting it out after each use of your inhaled steroid medication (long-term control medication).

Steroid tablets give you a higher dose of steroids than your controller inhaler. You need this higher dose if your asthma gets really bad. When you only need to take them for a week or so, there are no serious side effects. You might get a little indigestion or heartburn, and if you do, tell your doctor. If your asthma is so serious that you need to be on steroid tablets for months or years, there can be side effects like weight gain, thinning of the bones and skin and increased blood pressure. Before you start long-term treatment with steroid tablets, you and your doctor or asthma counselor should have a talk about the risks and benefits of this kind of medicine.

Q: Will inhaled steroids or steroid tablets stunt my child's growth?

A: Most studies have shown that children grow normally when they take low-dose inhaled steroids. Long-term steroid tablet use shows the most risk for growth problems. The doctor will carefully track how your child is growing while he or she is on these medications, and may try to step-down (decrease the dosage) this therapy when possible. On the other hand, having your child's asthma out of control itself can lead to growth problems. Recent studies have shown that there is no known long-term growth delays associated with inhaled steroids. At the present time, there are many studies being done on steroids; not only on how they work, but also on the possible side-effects from them. Talk with your child's doctor about any concerns you have about steroids or any other medications.

Q: Can people with asthma use steroid medicines, including inhaled steroids or steroid tablets, while participating in team sports?

A: YES. The tests that are sometimes given to athletes to find out if they use performance enhancing anabolic steroids do not look for corticosteroids, the kind of steroids used to treat asthma. There is no ban on inhaled corticosteroids by the NCAA (National Collegiate Athletic Association) or the IOC (International Olympic Committee). However, the IOC does require prior notification if the athlete is taking steroids for asthma.

CAMP study proves that inhaled corticosteroids are safe and effective

According to the “Childhood Asthma Management Program (CAMP),” a 5-year, 8-center study funded by the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health, (NIJH) inhaled corticosteroids are safe and effective for the long-term treatment of children with mild to moderate asthma.

CAMP is the longest and largest controlled study of treatments for childhood asthma to date. It showed that inhaled corticosteroids provide superior asthma control. Their only side effect was a temporary one—a small reduction in the children's rate of growth observed just in the first year of treatment. The inhaled corticosteroids greatly reduced airway sensitivity that leads to asthma symptoms after exposure to certain triggers and allergens.
How to Use your **Metered-Dose Inhaler**

Using a metered-dose inhaler is a good way to take asthma medicines. There are few side effects because the medicine goes right to the airways inside the lungs. A spacer or valved-holding chamber attached to the inhaler can help make your inhaler easier to use and more effective. For patients taking inhaled steroids, a valved-holding chamber or spacer may help prevent irritation to the mouth.

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

Use your inhaler in one of the two ways pictured to the right (A or B).

**STEPS FOR THE CORRECT USE OF YOUR METERED DOSE INHALER (MDI)**

A spacer is a tool that is used to help get the asthma medication to the lungs. Spacers attach to the mouthpiece of the inhaler or have a place to connect the canister of the inhaler to the spacer itself and should be used every time you use your MDI. (Note: the Maxair Autohaler (pirbuterol) does not require a spacer).

**Detailed instructions:**

1. Take off the cap and inspect the mouthpiece and the spray hole before use by tilting it forward and then blowing out any dust of other loose material.

2. Shake the MDI vigorously 10-15 times.

3. If the MDI is new or has not been used in more than 7 days, activate one spray into the open air to prime the spray system.

4. Push the inhaler mouthpiece into the end of the spacer.

5. Correctly position the inhaler and spacer comfortably in your hand. The metal canister should be upright with your first or second finger securely placed in the concave top and thumb securely on the bottom.

6. Inhale a comfortable breath.

7. Breath out all of the way.

8. Open your mouth and seal your lips around the mouthpiece of the spacer while keeping your jaw relaxed and teeth apart. It is important not to bite the mouthpiece or close your teeth in front of the mouthpiece. If you are using a mask with the spacer make sure that the mask fits tightly around your child’s nose and chin. There should not be any gaps.

9. Tilt your head back slightly to look at the ceiling, which will straighten the airway to allow easy inhalation of the medication into the lungs. Take in a slow, deep breath. It is very important to breathe in slowly- many spacers have whistles that sound if you are breathing in too fast.

10. Hold your breath as you count to ten slowly- or as long as you feel comfortable- to allow the medication to remain in your lungs then breathe out slowly.

11. If a second puff of your MDI is to be used, wait at least one minute between doses and start the process again at step three. Make sure that you track the number of doses you use. Different medicine inhalers will contain different numbers of doses, for example, 120 or 200.

**Clean Your Inhaler as Needed**

The inhaler should be cleaned often to prevent buildup that will clog the inhaler.

1. Once a day, clean the inhaler and cap by rinsing them in warm running water. Let them dry before you use it again.

2. Twice a week wash the plastic mouthpiece with mild dishwashing soap and warm water. Rinse and dry it well before putting it back.

**Know When to Replace Your Inhaler**

If the canister is new, it is full. The number of puffs a canister contains is listed on the label. Do NOT put your canister in water to see if it is empty. This does not work.

For a medicine you take each day: take the number of puffs in the canister when it is full, and divide it by the number of puffs you take every day. This will tell you how many days your inhaler will last. For example:

Your inhaler canister has 200 puffs in it, you are told to take 8 puffs total every day.

200 puffs per canister ÷ 8 puffs per day = 25 days

So this canister will last 25 days. If you started using this inhaler on May 1, replace it on or before May 25. You can write the date on your canister.

**For quick-relief medicine** take as needed and count each puff. Use a dosing card to keep track and get refills when about 20 doses remain.
Start by taking the Diskus® out of the box and foil and writing the “Pouch opened” and “Use by” dates on the label of the inhaler. The “Use by” date is one month from date of opening.

1. OPEN

When the inhaler is removed from the box, it will be “closed.” To open it, hold the outer case in one hand and put the thumb of your other hand on the thumb grip. Push your thumb away from you as far as it will go.

2. SLIDE

Hold the inhaler with the mouthpiece facing you. Slide the lever away from you as far as it will go until you hear and/or feel a click. The inhaler is now ready to use.

3. INHALE

• Hold the inhaler away from your mouth. Breathe out as far as is comfortable. Never blow into your Diskus®.

• Put the mouthpiece to your lips. Breathe in steadily and deeply — through the inhaler, not through your nose.

• Remove the inhaler from your mouth.

• Hold your breath for about ten seconds, or for as long as is comfortable.

• Breathe out slowly.

4. CHECK the dose indicator

The dose indicator on top of the inhaler tells you how many doses are left.

5. CLOSE

To close the inhaler, put your thumb in the thumb grip, and slide the thumb grip back towards you, as far as it will go. When you close the inhaler, it clicks shut. The lever automatically goes back to its starting position and is reset. It is now ready to be used again.

6. RINSE your mouth with water and spit the water out

Do not swallow.

The Diskus® delivers your dose of medication as a very fine powder. Most patients can taste or feel the powder, but some do not. You do not need to take another dose if you do not taste or feel the medicine.

7. STORE

Store your Diskus® at room temperature, 68° to 77° F, in a dry place away from direct heat or sunlight. Keep out of reach of children. The inhaler should be thrown away one month after it is taken from the foil pouch, or after every medication blister has been used (when the dose indicator reads “0”), whichever comes first.

Diskus® tips:

• Never breathe out into the inhaler.

• Never try to take the inhaler apart.

• Always use the inhaler in a level, horizontal position.

• Never wash the mouthpiece or any part of the inhaler — keep it dry.

• Always store the Diskus® in a dry place.

The Advair Diskus® is a registered trademark of GlaxoSmithKline.
Before you use a new PULMICORT TURBUHALER for the first time, you should prime it. To do this, turn the cover and lift off. Hold PULMICORT TURBUHALER upright (with mouthpiece up), then twist the brown grip fully to the right and back again to the left. Repeat. Now you are ready to use. You do not have to prime it any other time after this, even if you put it aside for a prolonged period of time.

FOLLOW THE INSTRUCTIONS BELOW:

1. LOADING A DOSE
   - Twist the cover and lift off.
   - In order to provide the correct dose, PULMICORT TURBUHALER must be held in the upright position (mouthpiece up) whenever a dose of medication is being loaded.
   - Twist the brown grip fully to the right as far as it will go. Twist it back again fully to the left.
   - You will hear a click.
   - Turn your head away from the inhaler and breathe out. Do not blow or exhale into the inhaler. Do not shake the inhaler after loading it.

2. INHALING THE DOSE
   - When you are inhaling, PULMICORT TURBUHALER must be held horizontal.
   - Place the mouthpiece between your lips and inhale quickly and deeply.
   - If more than one dose is required, just repeat the steps above.
   - When you are finished, place the cover back on the inhaler and twist shut. Rinse your mouth with water. Do not swallow.
   - Keep your PULMICORT TURBUHALER clean and dry at all times.
A nebulizer is a compressed air machine that turns liquid asthma medicine into a fine mist you can easily breathe. Nebulizers are good for young children, people who have trouble using metered dose inhalers, and people who have severe asthma. Nebulizers come in many forms. Your nebulizer may not look like the one pictured here, but they all work in about the same way.

**HOW AND WHEN SHOULD THE NEBULIZER BE CLEANED?**

After each treatment, rinse the nebulizer, mouthpiece or mask, and T-piece under hot running water. Shake off excess water, place the pieces face down, and let them air dry. Store the pieces in a clean bag. It is not necessary to clean the compressor tubing.

If you use the nebulizer frequently, you should clean it about 3 times a week. Wash your hands before handling the nebulizer.

If you have a dishwasher:

Take the unit apart and place all parts (except the tubing and tubing adapter) in the top rack of the dishwasher. After each cleaning, dry the nebulizer before reusing it for treatments. You do not usually need to wash the tubing. The inside of the tubing stays dry and clean because of the air blowing through it.

If you do not have a dishwasher:

1. Soak the nebulizer and mouthpiece or mask in warm water. Using a cloth, use friction to wash any excess mucus or debris off of the nebulizer and mouthpiece or mask.
2. Rinse each piece thoroughly in clean, warm running water.
3. Soak the equipment in a vinegar solution. To make the solution, mix 1/2 cup white vinegar with 1-1/2 cups of water. Soak the equipment for 20 minutes and rinse well under a steady stream of water. Shake off the excess water and allow to air dry on a paper towel. Always allow the equipment to completely dry before storing in a plastic, zipper bag.

By following these steps, you can keep your nebulizer clean and effective for your asthma treatment.

---

**HOW TO USE A NEBULIZER (compressor)**

Read the instructions that came with your nebulizer since there are many types of nebulizers available.

**GENERAL INSTRUCTIONS**

If your medicine is premixed, do not add normal saline. Add the medicine to the cup, then go to step 3.

1. Measure the correct amount of normal saline solution using a clean eyedropper. Put it into the plastic cup.
2. Measure the correct amount of medicine using a clean eyedropper. Put it into the cup with the saline solution.
3. Fasten the mouthpiece to the T-shaped part of the nebulizer. Then fasten this unit to the cup, or fasten the mask to the cup. When a child is able to use a mouthpiece unit, use that instead of a mask because it will give more medicine than a mask.
4. Put the mouthpiece in your mouth and seal your lips tightly around it, or place the mask on your face. Do not use “blow by” technique.
5. Make sure the air tubing has been connected to the machine and the cup. Turn on the machine.
6. Take slow, deep breaths in through your mouth.
7. Hold each breath 1-2 seconds before breathing out.
8. Continue until there is no more medicine in the cup (about 10 minutes). Tapping the sides of the cup can help get the drops to the bottom.
9. Store the medicine as directed after each use.
10. Clean the nebulizer after each use.

Adapted from Nebulizers Information Sheet, Astra Zeneca
GETTING IN CONTROL

Getting control over your asthma involves a partnership between you and your physician. You will be the person managing your asthma on a day to day basis, so you need to know:

1. What asthma medications are prescribed for you and how to take them.
2. Triggers that affect your asthma and how to avoid or limit your exposure to them.
3. Warning signs that your asthma is getting out of control.
4. What to do when your asthma is getting out of control, including when and how to call your healthcare provider.
5. How to treat asthma that is getting out of control to prevent further illness.

All of this information is put together and is used to develop an Asthma Action Plan.

The Asthma Action Plan is developed by you and your healthcare provider. It tells you:

1. How to tell when you are OK (Green Zone) and the medications to take every day.
2. How to tell when your asthma is getting out of control (Yellow Zone) and what changes you need to make to your medication.
3. When to seek emergency help (Red Zone).

There is a sample of an Asthma Action Plan in this section. Remember to ask your doctor to make an action plan for managing your asthma.

There are two ways to monitor your asthma, to determine when it is stable and when it is getting out of control. Both of these can be incorporated into your Action Plan:

1. Peak Flow Meter - This is a simple lung function test, looking at how well you can blow air out (remember, asthma is a disease that causes problems in “blowing out” not “breathing in”). There are instructions in this section, describing how and when to use this. It is available with a prescription from your healthcare provider. You can track your readings in the Peak Flow Meter log that comes with this book.
2. Symptoms – Some people use changes in symptoms to monitor their asthma. You must be certain that you know these symptoms well, if you use this method to monitor your asthma.

Reading this booklet is a first step toward asthma control! Remember you are an active partner in controlling your asthma! Make sure you understand what your role is.
A peak flow meter helps you check how well your asthma is controlled. Peak flow meters are most helpful for people with moderate or severe asthma. They can be used in conjunction with your Asthma Action Plan to determine what therapy you need to keep your asthma in control.

This guide will tell you:

- How to Take Your Peak flow
- How to determine your personal best peak flow
- How to set peak flow zones to use with your asthma action plan
- When to use your peak flow meter

How To Take Your Peak Flow

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

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

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

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

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

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

Ask your doctor to write an **Asthma Action Plan** for you that tells you:

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

Checking Your Asthma: When To Use Your Peak Flow Meter

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

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

**Bring to Each of Your Doctor's Visits**
- Your peak flow meter.
- Your peak flow numbers if you have written them down each day.

Also, ask your doctor or asthma coordinator to check how you use your peak flow meter — just to be sure that you are doing it right.
Determining Peak Flow Zones For An Asthma Action Plan

3. Circle your **Personal Best Peak Flow** number in the chart below in the white column.

4. Follow the numbers across from your **Personal Best Peak Flow** to find your **Green/Yellow/Red** zones.

5. Example: If your highest peak over 2 weeks was 360 then circle the number closest to 360, which is 350 and follow the line across to find your zones, which would be Green: >280, Yellow: 280 to 175, and Red: <175

<table>
<thead>
<tr>
<th>Personal Best Peak Flow</th>
<th>Green</th>
<th>Yellow</th>
<th>Red</th>
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<tr>
<td>50</td>
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<td>75</td>
<td>&gt; 60</td>
<td>60 to 38</td>
<td>&lt; 38</td>
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<tr>
<td>100</td>
<td>&gt; 80</td>
<td>80 to 50</td>
<td>&lt; 50</td>
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<tr>
<td>125</td>
<td>&gt; 100</td>
<td>100 to 63</td>
<td>&lt; 63</td>
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<tr>
<td>150</td>
<td>&gt; 120</td>
<td>120 to 75</td>
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<td>175</td>
<td>&gt; 140</td>
<td>140 to 88</td>
<td>&lt; 88</td>
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<td>200</td>
<td>&gt; 160</td>
<td>160 to 100</td>
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<td>225</td>
<td>&gt; 180</td>
<td>180 to 113</td>
<td>&lt; 113</td>
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<td>&gt; 260</td>
<td>260 to 163</td>
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<td>&gt; 280</td>
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<td>675</td>
<td>&gt; 540</td>
<td>540 to 338</td>
<td>&lt; 338</td>
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<tr>
<td>700</td>
<td>&gt; 560</td>
<td>560 to 350</td>
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> means greater than
< means less than

Track your peak flow number in your peak flow log.
My Asthma Care Plan

Date Plan Issued: ____________________ My Personal Best Peak Flow: ____________

<table>
<thead>
<tr>
<th>Maintenance Program</th>
<th>(Resumed when symptoms return to normal)</th>
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<tbody>
<tr>
<td><strong>Green Zone</strong></td>
<td>Peak Flow: ____________ (80% or higher of personal best)</td>
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<tr>
<td></td>
<td>- no breathing problems, no cough or wheezing, able to do normal activities -</td>
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### MEDICATION

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<tr>
<th>AM</th>
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(Anti-inflammatory)

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(Rescue/short-acting bronchodilator*)

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use 3-4 times daily only as needed in an acute attack or pre-exercise

*If using more than twice/week for rescue, call health care provider

### Breathing Problems

<table>
<thead>
<tr>
<th><strong>Yellow Zone</strong></th>
<th>Peak Flow: ____________ (50-80% of personal best)</th>
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<tbody>
<tr>
<td></td>
<td>- cough, wheezing, chest tightness, breathing problems at night -</td>
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</table>

### MEDICATION

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### Red Zone

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<th><strong>Red Zone</strong></th>
<th>Peak Flow: ____________ (less than 50% of personal best)</th>
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<td></td>
<td>- cough, wheezing, chest tightness, breathing problems at night -</td>
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</table>

If you develop breathing problems:

- call 911 or have someone drive you to the emergency room
- continue to use your inhaled bronchodilator — two puffs every 20 minutes as needed up to three times in 60 minutes

Managing Your Asthma 

3:5
Because you have asthma, your airways are very twitchy or sensitive. They may react to things that can trigger (that is, make) asthma symptoms start. These things are aptly called, “triggers.” When you are near an asthma trigger your airways may become swollen, tighten up, and produce too much mucus. You may start to wheeze, cough, have congestion, itchy eyes, or a runny nose. It’s important to find out what your asthma triggers are and figure out ways to control them.

Each person has different triggers. To help you find out what your asthma triggers are, you may need to keep a written record of your activities. For example, write down what you were doing, and where, whenever you have symptoms. This will help you find out if being near certain things causes your symptoms. For example, if your symptoms are worse when you make your bed or vacuum, dust mites may be a trigger. Controlling your triggers will help you have fewer asthma symptoms and make your asthma treatment work better.

Here are some common triggers and the actions you can take to control them.

**Indoor Asthma Triggers**

**Dust Mite Allergy**

Many people with asthma are allergic to dust mites. Dust mites are microscopic creatures that live on skin flakes shed by humans and pets. They thrive in warm, humid environments like mattresses, upholstery, pillows and carpets. They are found everywhere humans and warm-blooded animals live. It is especially important to keep your bedroom or sleeping area as “asthma-safe” as possible as you spend so much time there.

These are some actions you can take to gain control of dust mites:
- Dust weekly.
- Put your mattress and box spring in allergy-proof air tight or plastic covers.
- Damp wipe mattress cover weekly.
- Reduce clutter, toys and collections in bedroom.
- Place stuffed toys in freezer overnight every week.
- Put your pillow in an airtight allergy-proof cover or wash it every week in hot water (130°F).
- Avoid sleeping or lying on upholstered furniture.
- Remove carpets that are laid on concrete.
- Wash your bed covers and clothes every week in hot water (130°F).

Some additional actions include:
- Reduce indoor humidity to less than 50 percent. Use a dehumidifier if needed.
- Remove carpets and drapes from your bedroom. Use a washable window shade instead.
- Clean or replace heat/air conditioner filter as per manufacturer’s instructions, and if possible, use a high efficiency pleated filter like 3M Filtrete.

**Animal Allergy**

All warm-blooded pets, including dogs, cats, birds and rodents, can make your asthma worse if you are allergic to them. The flakes or scales from the skin, hair or feathers of these animals and dried saliva or urine can make people start coughing, wheezing, or get itchy, watery eyes. This is called an allergy. The length of a pet’s hair does not matter. There is no such thing as an allergy-free dog or cat.

How to stay away from or control this trigger:
- Remove the animal from the house. If you must have a pet with fur or feathers, keep the pet out of your bedroom at all times, especially when you are sleeping. If there is forced-air heating in the home and you have a pet, place a special filter over the heating registers. This comes in a roll and can be cut to fit any register.
- Wash the pet once a week, every week.
- Avoid visits to friends or relatives who have pets with fur or feathers.
- You may need to take your asthma quick-relief medicine 20 to 30 minutes before visiting homes or places where animals with fur or feathers are present.
- Choose a pet without fur or feathers.
- Avoid products made with feathers, for example, pillows and comforters.
- Also avoid pillows, bedding and furniture stuffed with kapok (silky fibers from the seed pods of the silk cotton tree).

**Cockroaches**

The waste products and rotting bodies of these insects are triggers for some people with asthma.

How to stay away from or control this trigger:
- Get rid of food sources by keeping foods in sealed containers and cleaning up any food messes quickly.
- Use roach traps.
Molds
Molds produce spores that can be carried in the air. These spores are triggers for some people with asthma.

How to stay away from or control this trigger:

**Foods**
- Try to avoid foods like beer, cider and certain cheeses, which can contain molds.

**Indoor Molds**
- Clean bathrooms, kitchens, and basements regularly.
- Use your bathroom and kitchen exhaust fans when cooking or bathing to cut down on moisture and odor-making that may cause breathing trouble.
- Keep bathrooms, kitchens, laundry rooms and basements well aired.
- Do not use humidifiers or vaporizers.
- Use dehumidifiers for damp basement areas. If possible, set the humidity level between 30 and 50 percent. Empty and clean the dehumidifier water tray regularly.

**Outdoor Molds**
- Avoid handling wet leaves, wet newspapers, compost piles, mulches, garden debris or soil.

Strong Odors and Sprays
Many aerosol sprays, cleaning products and perfumes are known to cause asthma attacks in some people with asthma.

How to stay away from or control this trigger:
- Do not stay in your home when it is being painted. Allow enough time for the paint to dry and be aired out. Try to use odor free, pollutant free paints (VOC) paints.
- Avoid perfume and perfumed cosmetics such as talcum powder and hairspray.
- Do not use room deodorizers.
- Use unscented household cleaning products whenever possible.
- Reduce strong cooking odors (especially frying) by using a fan and opening windows.

Smoke
Smoke from other sources can also trigger asthma attacks in some people with asthma.

How to stay away from or control this trigger:
- Avoid using a wood-burning stove to heat your home.
- Avoid using kerosene heaters.
- Try not to be near outdoor fires, including leaf and grass fires.
- Avoid wood-burning fireplaces. An enclosed, vented gas fireplace is usually not a problem.
Other Triggers

Colds and Infections
Some people with asthma will have an attack when they get an infection, such as a cold, the flu, bronchitis, a sore throat, etc. An increase in coughing, wheezing, shortness-of-breath, or production of yellow/green mucous means that a change is needed in your asthma care. Sinus drainage or infection can also make your asthma worse.

How to stay away from or control this trigger:
• Talk to your doctor about flu shots.
• Avoid other people with colds or flu.
• Wash your hands or use an anti-microbial hand cleanser often if people around you have a cold or flu. Keep your hands away from your face.
• The proper way to wash your hands is to wet, lather and vigorously scrub them for 15 seconds. Try singing Happy Birthday to yourself three times all of the way through. That will be plenty of time to kill all of the germs on your hands using just soap. Use a hand towel to turn off the faucet, not your clean hands.
• Talk to your doctor if your allergies or an infection are causing sinus drainage.
• Get medical advice early for any breathing problems.

Follow your Asthma Action Plan. When you are sick, be sure to follow your Asthma Action Plan, rest, drink plenty of fluids (6 to 8 glasses of water each day) to keep mucus loose and your body hydrated. Eat a balanced diet. Do not take over-the-counter cold medicines, such as antihistamines and cough syrup, unless you speak to your doctor first.

Non-asthma Medications
Certain kinds of medicines prescribed for health problems other than asthma can trigger or worsen asthma symptoms. Medications such as beta blockers, aspirin, nonsteroidal anti-inflammatories (NSAIDs) and ACE inhibitors can cause problems for some people who have asthma. Ask your doctor if you are taking any of these medicines.

How to stay away from or control this trigger:
• Ask your doctor about the safety of combining medicines each time a new one is prescribed.
• Talk to your doctor or pharmacist before using any over-the-counter medicines.

Heartburn or GERD

(Gastroesophageal Reflux Disease)
For many people, the valve between the stomach and esophagus does not close completely, allowing stomach acid to travel up the esophagus (the food tube connecting the back of the throat to the stomach). This reflux irritates not only the esophagus, but if it goes high enough, it will also irritate the lungs. People with GERD may have trouble breathing at night or upon awakening.

How to control this trigger:
• Raise the head of the bed up on six inch blocks or use a wedge on the upper half of the bed to elevate the head — gravity will help keep the stomach contents down.
• Do not eat or drink anything for at least two hours before lying down or going to bed.
• Avoid eating foods that can increase the amount of acid in your stomach, like fatty foods, alcohol, caffeine and spices.
• Take gastric-reflux medications as advised by your doctor.

Emotions
Although asthma is not caused by emotions, an attack can be strong feelings. For some people, laughing, crying, yelling or anxiety can trigger an asthma attack. Asthma can cause emotional stress all by itself. When you have trouble breathing, it is indeed cause for alarm. Learning to handle stress and anxiety can help you get better control of your asthma.

How to stay away from or control this trigger:
• Find ways to relax using breathing exercises when you are under stress (ask your doctor or visit your local library to learn more).
• Practice your relaxing and breathing exercises until you can do them easily when needed.

Foods
Some people have known food allergies that trigger asthma attacks. Other people are triggered by the preservatives found in some foods.

How to stay away from or control this trigger:
• Wear a medic-alert bracelet that identifies your food allergies.
• Carry injectable epinephrine to provide first aid during an emergency allergic reaction, see your doctor for more information about this.
• Read food labels closely to avoid eating hidden triggers.

Adapted from the National Asthma Education Program, U. S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, Public Health Service National Institutes of Health NIH Publication No. 93-3279
September 1993
Tobacco Smoke and Odors

Tobacco Smoke
Tobacco smoke irritates the airways, and over time, can cause permanent damage to the lungs. The nose and the lining of the lungs filter the air that is inhaled. When smoke (either from smoking tobacco or breathing it in second-hand) is inhaled, it can destroy this lining. When this happens, it may cause asthma attacks and respiratory infections to happen more often. It is best not to smoke or be near smoke.

Exposure to secondhand smoke can come from many locations including homes, restaurants, worksites, public places, and vehicles. Currently, there is a strong movement to cut secondhand smoke exposure in public places and workplaces. By putting policies that limit smoking in place, this movement has been helpful in cutting exposure to secondhand smoke in public places.

What Can Be Done To Protect Adults and Children From Smoke?

• DO NOT SMOKE!
  If you smoke, choose to quit. To help you, free Quit Kits are available by calling 1-800-537-5666 or visiting the Michigan Department of Community Health’s website.
  • Choose not to smoke in your home and don’t allow others to do so.
  • Teach your children how secondhand smoke affects their health and the health of others.
  • Choose not to smoke around children.
  • Choose to avoid smoke filled areas.
  • Choose to not smoke in your car.
  • Make sure your day care buildings are smoke-free.
  • Choose to eat at smoke-free restaurants.
  • Choose non-smoking hotel rooms.
  • Commit to make your home smoke-free and protect your children. Call the EPA’s toll free Smoke-Free Home Pledge Hotline at 1-866-Smoke-Free or 1-866-766-5337.

A Smoke-Free Home Kit will be mailed out to you, which includes: tips on keeping your home smoke-free, smoke-free home magnet and a smoke-free home certificate.

Secondhand Smoke Statistics

• Secondhand smoke is the second leading cause of deaths that could be prevented in Michigan.
• One nonsmoker dies of secondhand smoke for every eight smokers.
• People whose partners smoke are nearly five times more likely to develop asthma in adulthood than those who are not exposed to secondhand smoke.
• Nonsmokers who are regularly exposed to secondhand smoke at home or work have almost double the risk of heart disease. That translates to about 50,000 fatal heart attacks a year in nonsmokers.
• Smoke filled rooms can have up to six times the air pollution as a busy highway.

Health Effects of Secondhand Smoke

The exposure of secondhand smoke has been linked with many bad health effects, including many cancers, heart disease, sudden infant death syndrome, middle ear problems and respiratory conditions. Secondhand smoke is dangerous to everyone, although unborn babies, infants and children are at the most risk because their bodies are still growing.

Secondhand smoke contains: formaldehyde (embalming fluid), cyanide (poison) arsenic (poison), carbon monoxide (car exhaust), methane (poison), benzene (poison in cleaning solvent), nitro amines (cancer-causing compounds), cadmium (toxic metal), benzopyrene (cancer-causing substance found in gasoline and tar), aniline (poison used in dye) and polonium (radioactive materials).

Listed below are the known health effects of secondhand smoke:

Adults
• Secondhand smoke exposure can cause lung cancer.
• Secondhand smoke exposure increases the risk of getting nasal sinus cancer.
• Secondhand smoke is well known as a risk factor for heart attack and stroke.
• Secondhand smoke irritates the lungs, leading to coughing, excess mucus, chest discomfort, and poorer lung function.
• Eye and nose irritation in adults can occur after being around secondhand smoke.

Children
• Children who breathe secondhand smoke can have more frequent and more severe asthma attacks.
• Secondhand smoke may cause children to develop asthma.
• Children who breathe secondhand smoke are more likely to get pneumonia, bronchitis, breathing problems that don’t get better, and poor lung function.
• Children who breathe secondhand smoke are more likely to have more middle ear infections.
• Infants who breathe secondhand smoke are at a higher risk for Sudden Infant Death Syndrome (SIDS), the main cause of death in babies between one month and one year of age.
• Secondhand smoke can result in infants with low birth weight or be small for gestational age.

Secondhand Smoke and Older Adults

Tobacco has been called a “childhood disease” because children are the targets of tobacco company ads, and childhood is when 90% of current smokers were addicted. However, tobacco/secondhand smoke is also a “senior disease” because that is when the disease and death caused by tobacco usually happens.

Exposure to secondhand smoke has been found to start attacks of angina, irregular heartbeats, and the symptoms of asthma. About 53,000 people in the U.S. die every year from secondhand smoke-related diseases. If you use the same
percentages of smoking-related deaths to secondhand smoke deaths, then over 50,000 of these deaths are to people aged 50 and over; and over 37,000 of these people are to people aged 65 and over.

For more information about tobacco and seniors, go to The Center for Social Gerontology's website, and the section “Tobacco & Elderly” at www.tcsg.org/tobacco.htm.
Tobacco smoke, whether you inhale from your own cigarette or breathe in secondhand smoke, is dangerous to your health. When you have asthma, it can be even worse.

**What is Secondhand Smoke?**

Secondhand smoke, also known as Environmental Tobacco Smoke, is a combination of the smoke from a burning cigarette, cigar or pipe and the smoke exhaled from a smoker’s lungs. The Environment Protection Agency (EPA) states that over 4,000 different chemicals can be found in tobacco smoke. More than 50 of them are known or probable causes of cancer, and six are hazardous to growing children and unborn babies.

**Tobacco Cessation Medications:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Form</th>
<th>Common Brand Name(s)</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bupropion</td>
<td>Gum</td>
<td>Nicorette</td>
<td>Over-the-counter (OTC)</td>
</tr>
<tr>
<td></td>
<td>Patch</td>
<td>Nicoderm, Habitrol, Prostep, Nicotrol</td>
<td>OTC and prescription</td>
</tr>
<tr>
<td></td>
<td>Inhaler</td>
<td>Nicotrol</td>
<td>Prescription</td>
</tr>
<tr>
<td></td>
<td>Nasal Spray</td>
<td>Commit</td>
<td>Prescription</td>
</tr>
<tr>
<td></td>
<td>Lozenge</td>
<td>Zyban, Wellbutrin</td>
<td>OTC</td>
</tr>
<tr>
<td></td>
<td>Pill</td>
<td></td>
<td>Prescription</td>
</tr>
</tbody>
</table>

Source: Coverage For Tobacco Use Cessation Treatments, Department of Health and Human Services, Center for Disease Control and Prevention

**Tobacco Cessation Resources**

**American Cancer Society**
Phone: 734-971-4300 (Ann Arbor)

**American Lung Association of Michigan**
Phone: 734-994-0155

**Ann Arbor Veterans Administration Center**
Phone: 734-769-7100 ext. 5494 (Ann Arbor)
Contact: Education

**Blue Care Network Members-Blue Healthline**
(health information) 800-811-1764
- Freedom From Smoking through University of Michigan Health System 734-936-5988
- Smoke Stoppers through St. Joseph Mercy Health System, one-on-one 734-827-3768

**Care Choices Stop Smoking Program**
Contact 800-424-5252

**Chelsea Community Hospital**
Phone: 734-475-4103 (Chelsea)
Contact: Community Health Services

**Eastern Michigan University**
Phone: 734-487-2226 (Ypsilanti)
Contact: Health Education

**M-CARE Tobacco Cessation Program**
Phone: 888-448-3865
Email: lifelong@mcare.org

**Michigan Resource Center**
Phone: 800-536-5666
Web site: http://www.michigan.gov/mdch

Order a Michigan Department of Community Health “Quit Kit” or a smoke-free worksite kit by contacting the Michigan Resource Center

**Smoke-Free Support Group for Older Adults**
Phone: 734-764-2556

**St. Joseph Mercy Health STOP** (Ann Arbor)
Phone: 734-827-3768
Contact: Joan Schmidt

**Turner Geriatric Clinic-Smoking Cessation Classes for Seniors**
Phone: 734-764-2556

**University of Michigan Health System: M-Fit Tobacco Consultation Services** (Ann Arbor)
Phone: 734-975-4463 ext. 226

**Washtenaw County Tobacco Reduction Coalition**
Phone: 734-544-6874 (Ypsilanti)
Having asthma doesn’t mean you can’t be active. Some people who have asthma will have symptoms, like coughing and wheezing, when they are active. Other people have asthma that is triggered only by exercise (exercise-induced asthma). In both cases, symptoms of asthma can almost always be prevented. Some people avoid the symptoms by keeping their asthma under control with their regular long-term control asthma medications. For other people, taking quick-relief asthma medicine before they exercise helps them avoid symptoms. You and your doctor or asthma counselor can create a written Asthma Action/Management Plan that includes ways to control asthma triggered by exercise so you can stay active.

**Exercise-Induced Asthma (EIA)**
When asthma is triggered only by physical activity, it is called exercise-induced asthma (EIA). Just as with other asthma triggers, a person who is triggered into an asthma attack by exercise has airways that narrow and tighten after they begin to exercise. In addition, the symptoms of EIA can be much worse with seasonal allergies. Fast, hard breathing, wheezing and a tight chest are signs of an asthma attack. People with EIA may also have extra mucus in their lungs that is produced during an attack which makes them cough. The symptoms may begin as soon as 5 minutes after starting to exercise, and may last for 30 minutes. An asthma attack can be very serious and scary. If a person with EIA does not get treatment, they will often limit their participation in physical activities.

**Asthma Action Management Plan**
Make sure you discuss with your doctor or asthma counselor what to do before, during and after exercise to keep from having an asthma episode. Then follow the Asthma Action Management Plan prescribed by your doctor. The following steps can help you and your doctor make a plan that works for you.

Keep an activity diary where you write down your activities and the asthma symptoms you have during these activities. It is also a good idea to write down the steps you took to get relief so your doctor will be able to see how the treatment plan is (or is not) working.

When you take your medication can be very important. Ask your doctor about the best times to take each of your medications in relation to your exercise schedule.

When you are actively working out, pay attention to the type of exercises that feel best to you, and the amount of time you can do them without asthma symptoms. For example, can you get through a complete workout cycle without any symptoms? How far can you walk comfortably? By talking openly and honestly with your doctor about any symptoms you may have during exercise, he or she may be able to adjust the type or dosage of asthma medication to help you exercise without getting breathing problems. He or she may also be able to help you find new or different ways to be active.

**Dealing with Asthma and Exercise**
Experts think it's important for people with asthma to get regular exercise to condition and strengthen their lungs. Try these tips to help you cope:

- Follow your doctor’s instructions about using medication before or after exercise.
- The type of exercise you choose is important because people with asthma tolerate some sports better than others.
- Avoid triggers that may cause or worsen your asthma. (For example, avoid exercise if symptoms are present; don't exercise outdoors when pollen counts are high).
- Start with a 15-minute warm-up to allow the lungs to adjust to the increased demand for oxygen.
- End with a 15-minute cool-down rather than stopping abruptly.
- In cold weather, cover your mouth and nose with a scarf to help warm the air before it gets to the lungs. Breathe through your nose, if possible, to warm the air.
- If you're on a team, give your coach a copy of your written Asthma Action Plan.

Here are some medicines that your doctor might prescribe for asthma symptoms with exercise:

**Short-acting inhaled beta2-agonist "quick-relief medicines" such as Albuterol**

**TO PREVENT SYMPTOMS:** Use about 30 minutes before exercising

**TO STOP SYMPTOMS:** Use at earliest sign of asthma symptoms

**Cromolyn sodium (Intal), nedocromil sodium (Tilade)**

**TO PREVENT SYMPTOMS:** Use about 30 minutes before exercising

**Long-acting beta2-agonist such as salmeterol (Serevent) or formoterol fumarate (Foradil)**

**TO PREVENT SYMPTOMS:** Use at least 30 minutes before exercising

Regular use of a long-term controller medicine allows many people with asthma to have fewer symptoms with exercise.

If you have symptoms, use a quick-relief medicine right away. Don't push yourself, stop and rest if you need to. Remember, long-term controller medicines like cromolyn, salmeterol and corticosteroids are not recommended during an asthma attack because they do not immediately open the airways.

Be sure to talk about your asthma with your family and friends. The more they know about it, the more they can help you make your Asthma Action Plan work.
**Professional Organizations**

**Asthma Initiative of Michigan**
Michigan has a strong and unique asthma movement. Michigan’s official asthma project started in February of 2000, when the Michigan Department of Community Health pulled together 125 asthma experts from across the state from public and private agencies with knowledge in the areas of clinical care, education, environmental quality and surveillance. As part of the effort to improve care and education of patients with asthma, they sponsored a website that is frequently updated to provide complete, current and correct information about asthma in one place.


1-866-EZLUNGS (1-866-395-8647)

**American Lung Association of Michigan**
Resources:
- Pamphlets and educational materials on asthma management, treatment and equipment
- Fact sheets and patient information for adults and children
- Educational programs, environmental information
- LungNet, Michigan’s lung health advocacy network

[http://www.alam.org/](http://www.alam.org/)

25900 Greenfield, Ste. 401
Oak Park, MI 48237
Phone: 248-784-2000 or 1-800-543-LUNG (5864)
Fax: 248-784-2008

**Other Helpful Resources**

**Allergy & Asthma Network — Mothers of Asthmatics**
Founded in 1985, AANMA is a national nonprofit network of families whose desire is to overcome, not cope with, allergies and asthma. The shortest route to that goal is knowledge — that's why AANMA produces the most accurate, timely, practical, and livable alternatives to suffering.


2751 Prosperity Ave., Suite 150
Fairfax, VA 22031
Phone: 1-800-878-4403
Fax: 703-573-7794

**Asthma & Allergy Foundation of America**
The Asthma and Allergy Foundation of America is a nonprofit organization dedicated to helping patients with asthma live healthy and active lives. They offer: free information about asthma and allergies, education programs for consumers and health professionals, advocacy to improve quality of life for patients and research to find a cure.


[http://www.sleepworkplay.com](http://www.sleepworkplay.com)

**American College of Allergy, Asthma & Immunology**
The ACAAI is a professional association of 4,900 allergists/immunologists. Established in 1942, the ACAAI is dedicated to improving the quality of patient care in allergy and immunology through research, advocacy and professional and public education. The ACAAI's goals are to:

- Improve the quality of patient care in allergy, asthma and immunology
- Maintain and advance the diagnostic and therapeutic skills of members and foster their appropriate application
- Sponsor and conduct educational and scientific programs and publications
- Develop and disseminate educational information for members, patients, health plan purchasers and administrators, and other physicians and health professionals.

**Patient education website:** [http://allergy.mcg.edu/](http://allergy.mcg.edu/)

85 West Algonquin Road, Suite 550
Arlington Heights, IL 60005
Phone: 1-800-842-7777

**Asthma**
This is a tutorial for children and parents from the University of Virginia. It provides a general overview of Asthma and answers any questions children might have.

[http://galen.med.virginia.edu/~smb4/tutorials/asthma/asthma1.html](http://galen.med.virginia.edu/~smb4/tutorials/asthma/asthma1.html)
Environmental Protection Agency
Indoor Air Quality and Asthma Information:
www.epa.gov/iaq/pubs/asthma.html

Outdoor Air Quality Information:
www.epa.gov/airnow
1-800-621-8431

JAMA Asthma Information Center
The American Medical Association provides information on asthma, news, treatment options, resources for patients & links to other websites concerning asthma.

http://www.ama-assn.org/special/asthma

National Asthma Education and Prevention Program
This is the organization that has published the National Asthma Management Guidelines. These were last published fully in 1997, with an updated published in 2002. The guidelines and patient information are available online:

www.nhlbi.nih.gov
301-251-1222

National Jewish Medical and Research Center
This is an institution long known for asthma care and research. They have professional and patient education resources for asthma and other allergic diseases which are available online.

www.njc.org
1-800-LUNG (1-800-222-5864)

Starbright Foundation
This organization has a website with asthma information, plus they will send a free asthma education game or CD ROM to patients with asthma.

http://www.starbright.org