

Management of Asthma Symptoms

What is Asthma?

Asthma is a disease of the airways in the lungs caused by sensitivity to certain stimuli or “triggers.” These triggers cause the airways (**bronchi**) to become obstructed by:

1. Tightening or contracting the smooth muscles around the airway thus, narrowing the passageways. These are the “**bronchoconstriction**” or airway spasm events.
2. The membranes that line the bronchi swell.
3. Thick, sticky mucus is formed and fills the bronchi. These last two events are the “**inflammatory events**”.

When these events happen, you experience the typical symptoms of asthma: shortness of breath, wheezing, tightness in the chest, and/or cough that comes only at night and/or lasts for weeks. The obstruction and thus the symptoms are reversible and should be treated aggressively. Asthma can be life threatening and must always be taken seriously.

How Often Do Episodes of Asthma Occur?

The frequency and duration of episodes of shortness of breath, wheezing, and coughing vary widely from person to person. This frequency can also vary considerably in the same person as that individual ages, as well as being dependent on many other factors, most that are manageable. These include allergies, home and work environment, and levels of physical, intellectual and emotional stresses.

Stress does not “cause” asthma. You were born with that genetic tendency. However, when you have demands put on your body, even just the routine demands of daily living, the “flight or fight” response, or the “alert” signal kicks in, in lesser or greater degrees.

When adrenalin kicks in, the biochemical regulator of the “fight or flight” alert responds, and the following happens: your heart beats a little faster, your hearing is peaked, your pupils are dilated, and you breathe faster. Everybody’s lungs will tighten a little with increased rate of breathing. For the asthmatic that has a genetic pre-disposition for “twitchy” or “inflammatory reactive” airways, the increased rate of breathing can set-off an asthma attack.

This means that stress is in your body, NOT in your head. However, you can use your head to heal your body.

The most difficult part of having asthma is coming to terms with the understanding that:

There is no cure. There is no “easier” way to control asthma, no magic pill, and no magic cure. You were born with the genetic tendency of asthma, and curing you would mean changing that, something we cannot do.

The good news is that now, much more so than before, we have ways to relieve most, if not all the symptoms, if you are committed to working on what it takes. **You will be in charge of making yourself feel better,** armed with the information and medications we have to offer. Staying on top of your asthma, treating it aggressively, will keep your lungs as healthy as possible and make a difference for the rest of your life. So, you can see this is pretty important.

Asthma tends to get worse in the middle of the night. It is an illness that has a cyclic character to it. Anticipate this middle of the night worsening, and keep your inhalers at your bedside. In some patients, particularly children, all they get is a nighttime cough, we sometimes call “cough-asthma”.

The Management Plan: Consists of Two Steps

First Step: Life Style Changes

Avoid Substances and Irritants That Trigger Asthmatic Episodes:

This includes making all the environmental changes required to minimize exposure to your allergens. It also means treating your allergies aggressively so you don't wheeze. Read and follow carefully “The Management of Allergy Symptoms”. Sometimes weather changes, especially cold can trigger an episode.

Exercise:

Do exercise regularly, 20-30 minutes 3-4 times a week at a minimum. In the long run, it will improve your general well-being and your lung's ability to function. Most asthmatics can tolerate the same level of physical activity as those without asthma. Often, we will strongly recommend you use one of your inhalers **BEFORE** you exercise. Some individuals have exercise-induced asthma (EIA). (Refer to the sections below on bronchodilators and cromolyn sodium)

Avoid Infections:

Follow a nutritious diet to keep your resistance up. Eat five fruits and/or vegetables per day. Any illness, but especially infections of the throat, sinuses, or lungs can aggravate your asthma. So call us promptly whenever you are sick, to get the appropriate treatment going early.

Do not smoke, and Do not let anyone smoke around you:

Quit smoking if you are smoking now. We have some newer medications that can help you succeed in quitting. Avoid other air-polluted environments such as smoke-filled rooms. Close the windows and use the air-conditioner at home and in the car on smoggy days or high pollen days, and even every day.

Eat a Low Fat Diet; Decrease the percentage of Saturated Fats in the Diet, and Lose Weight:

By decreasing the fats in your diet, it seems to decrease the pre-cursors or building blocks that make the bio-chemical substances that cause the airway obstruction. If you have less of these substances around, you may have fewer episodes. This is a very simplistic explanation of the very complex cascade that occurs in asthma, but it gets the idea across.

Drink Plenty of Fluids:

Remember one of the things that happens with asthma is the formation of sticky thick secretions. If you drink plenty of fluids to keep your secretions watery, your lungs can clean themselves more successfully and this will decrease airways obstructions.

You should routinely drink plenty of fluids daily. If you feel an asthma attack coming on, or you have any symptoms of a cold or illness, immediately start drinking 6-8 glasses of fluid each day.

Use of a Surgical Face Mask or Painter's Mask, or Sleeping with Mouth & Nose Under the Covers:

If you can sleep with a mask that covers your nose and mouth, you will do several things: humidify the air you breathe; warm the air you breathe (cold air causes airway constriction); minimizes allergens you breathe in. Yes, it is a little hard to sleep with a mask; another trick is to sleep with your face (nose and mouth) under the covers

Doing the above measures on a regular basis can decrease the need for medications.

Step Two: Take your controller medicines *everyday*

Quick-Relief Medicines: Inhaled Short-acting Bronchodilators

Albuterol, Maxair, Proventil, Ventolin, BreathAir and others (Inhaled short-acting beta2 agonists)

Atrovent (anticholinergic)

These medications work by reversing the bronchoconstriction. They “open up the airway”. They work immediately. Bronchodilators can work as preventative measures and as treatment in the middle of an acute attack.



Serevent is a bronchodilator but is actually a **controller medicine**. Because it's method of action is easy to discuss here, you'll find it in both sections.

Pre-exercise:

Some people have “exercise-induced asthma” (EIA). One or two puffs BEFORE exercise prevents the wheezing. This can be repeated as needed during and after exercise. You want your lungs as wide open and free of wheezing as possible.

At the First Sign of a Cold:

Start using the inhaler to keep the lungs from closing down and making it possible for the secretions to accumulate. The “bugs” love these secretions, so get them out by opening up your airway. Most “bronchitis” are viral and antibiotics do not shorten the course of illness. However, even in patients without asthma, bronchitis coughing (**post-viral inflammatory cough**) improves sooner with a bronchodilator.

During Any Wheezing Episodes:

Start using the inhaler at the earliest sign of wheezing so you stay ahead of your asthma. Once the airways start to tighten, it is harder to get the medication down where you want it.

You may need to use 2, 3, or even 4 puffs at about 3-5 minutes apart for each treatment. Each inhaler is a little different so make sure you know what the correct dosing and frequency is for your particular brand.

You may repeat the bronchodilator treatment as needed at about every 3-4 hours although this too is different for each inhaler. If you need a second treatment you must now also start a **controller medicine (see below.)** If you feel no improvement, or have some improvement with each treatment but remain tight and breathless after several such self-treatments, you must call us. Or if you remain tighter than usual for two or more days in a row, we need to see you.

The first puff goes only as far as the airways are open, the second puff reaches deeper, the third deeper. However, more is not always better. Ask us!

If you are using several different types of inhaled medications, bronchodilators are used first to open up the lungs to let the other medications get deeper into the lungs, where they are needed. Some bronchodilators do tend to make you feel a little jittery. We like the inhaled forms because it goes to where you need it, and they don't make you as jittery as the oral pill forms. There are inhalers called “metered-dose inhalers” or MDIs. There are also some diskus Inhalers like Advair Diskus.

Please make sure you know how to use your inhalers correctly. That includes all of the different inhalers that you have, with or without the spacers. Ask your doctor to review this with you, and whenever you have any questions. We cannot stress this enough, because it is not that easy. It usually takes about 6 months for a person to finally, really learn how to use the metered-dose inhalers (MDIs) correctly.

Serevent is not used in the same way as the other bronchodilators. It is to be used only **2 puffs twice a day. Never more than this!** You can consider it your **Controller** bronchodilator, one that you use routinely. You may use one of the other bronchodilators several hours later if you need a “rescue” for ongoing wheezing. An example would be Albuterol.

Controller Medicines: These are added for any “Persistent” Asthma

Inhaled Cromolyn Sodium - Intal or Tilade

Cromolyn sodium stabilizes the airway, decreases formation of secretions, and decreases the thick, sticky nature of the secretions. **In other words, it treats the inflammation.** It is for prevention and maintenance, and not for the immediate treatment of a tight airway. It is not to be used “just as you need it”. This is a long term medication, it takes about two weeks to get the full effects.

Whenever you start using Intal, always use 2-3 puffs 4-5 times each day, for a full two weeks. After 2-3 weeks, you may try tapering down to a dosing schedule that keeps you maximally clear. Tilade is used less frequently

Pre-exercise:

Use it in the place of and in the same way as a bronchodilator inhaler. (See “bronchodilators Pre-exercise” above)

Allergy Induced Asthma

Use daily during seasonal or perennial times of flare-up, or before times you know you’re going to be exposed to an allergen. Usually once you have started the Intal you will be using it for a minimum of 2-4 weeks for each episode, sometimes for weeks or months.

Acute and Chronic Stabilization

Use the inhaler as directed, 2-3 puffs, 4 times daily. More is not better

At The First Sign of Infection

If you tend to get pretty tight fairly quickly with an infection, and don’t usually have to use a steroid inhaler, start the Intal right away on the same schedule as for chronic stabilization.



If you are tight or wheezing, using a bronchodilator inhaler first, 2-4 puffs (i.e. MaxAir, Proventil) will open up the airway to get the Intal deeper into the lungs where you want it.

Inhaled Corticosteroids (Pulmocort Resplules, Flovent, Vanceril, Aerobid, Asthmacort and others)

Corticosteroids work to decrease the inflammation. In the last several years, we have come to recognize that the inflammatory reaction is what actually sets off the bronchoconstriction. If we only treat the airway spasm, we are just treating the symptom. We have to treat the inflammation too. This is a very important and powerful part of your treatment.

Corticosteroids do this better and faster than cromolyn sodium. We do take steroids seriously though, and are pleased to have the inhaled forms so as to avoid the side effects of the oral pill or injected forms.

When symptoms are mild, and intermittent you may be well managed on only a bronchodilator. If your symptoms do not reverse or you are getting worse then you will need to get more aggressive and add-in a corticosteroids early. Mild and intermittent symptoms means symptoms less than or equal to 2 times per week and/or less than 2 nights per month.

If you have symptoms more than 2 times per week and/or more than 2 nights per month then you have “mild persistent” asthma and we must add a low-dose inhaled Corticosteroid to your care plan. (Or a “leukotriene modifier”)

Inhaled Corticosteroids take about 2 weeks to reach maximum effectiveness. Sometimes, if you come into the office acutely and severely flaring, we will give you a steroid injection or prednisone tablets to get you started, even as you immediately start the inhaled Corticosteroids. We know that in 2 weeks the inhaled Corticosteroids will be reaching their peak and will take over as the injection wears off.

Inhaled Corticosteroids are to be used on a regular around the clock basis. The dosing (# of puffs, the number of mgs, and the # of times per day) is different for each one. Be sure you know which one you are using and how often you are suppose to use it. Do not use less or more. More is not always better.

Once you have been started on inhaled Corticosteroids, you will be on them a minimum of 4-6 weeks. Inhaled Corticosteroids are maintenance (**controller**) medications and not to be used on an as you need it immediate response basis.

Acute and Chronic Stabilization

Corticosteroids are used acutely and for chronic stabilization instead of Intal, and in the same way. (see above)

At the First Sign of Infection

At the first sign of infection Corticosteroids can be used instead of Intal. Corticosteroids are used more often than Intal for this purpose. Corticosteroids are used in the same way. (See above)

If you are tight or wheezing, use 2-4 puffs of a bronchodilator inhaler first, and then the Corticosteroid inhaler. This allows the Corticosteroid to get deeper into your lungs.

Inhaled Corticosteroids can predispose to thrush, which creates a white coating either on your tongue or cheeks or gums. To prevent this from happening, always rinse your mouth out with water after using the Corticosteroid inhalers. Be sure to rinse and spit and do not gargle. By rinsing and spitting you also decrease the amount that gets swallowed in the saliva and into your stomach where it gets absorbed into your blood stream. Thus you can decrease the adverse effects by decreasing stomach absorption.

Leukotriene Modifiers

Another class of “anti-inflammatories” and **controller medicine** is the leukotriene modifiers. (includes Singulair, Accolate, with new ones coming) These medications work at some very specific enzyme sites to stop inflammation. These medications are taken orally (by mouth).

Mucolytics

Mucolytics thin the secretions; decreasing the obstruction and helping your lungs clean and clear themselves. It is part of what we call pulmonary hygiene. Use them whenever you are wheezing and at the first sign of an infection. The gentlest brand with the least side effects is Robitussin Liqui-gel caps. This medication is available over-the-counter, and should be used as directed. Other alternatives include Entex LA or PSE, one tablet 2 times a day; or Duravent, also 2 times a day.

Another prescription medication we use occasionally is SSKI, 15 drops in ½ ounce of plain Robitussin. This is not recommended for anyone with thyroid problems and is not recommended for children because of the iodine.

Theophylline- An oral Bronchodilator but still a Controller Medicine

Theodur, Slobid, Uniphyll, Respide are examples

Theophylline is a bronchodilator (opens the airways) and works just like the bronchodilators discussed above. However, it is not as elegantly delivered. It is taken by mouth and is absorbed into your bloodstream and thus can cause more side effects. The side effects include: jitteriness, nausea and vomiting, decreased appetite, headache, and upset stomach primarily. These can be the early warning signs of toxicity, too, thus always call your physician if you develop them. Because Theophylline can be toxic, we will be following your blood level.

We strive to keep your Theophylline level at or below 15. This is dependent on the performing laboratory and our treatment goals.

Theophylline is started during an acute flare when your physician feels you are ill enough to need everything we have to offer. Usually you will continue on it for at least 2-4 weeks. You will be taking all of your other medications via inhalation as well.

We will try not to give you erythromycin, tagament, ciprofloxin, or noroxin when you are on Theophylline, because these medications can increase the Theophylline leveling your bloodstream and can become toxic. Please, always remind your physician if you are on Theophylline, and make sure we do not give you one of these medications with it.

Optimizing Treatment-How and Why It Is Important

Over time you will get to know your body's signs of distress and to learn how to optimally treat them. You will learn what medications you respond to best. You will also learn how early to start your medications and how long to treat. However, you will still be under our continued guidance as no two episodes are ever exactly alike. You should begin to feel like you know your own asthma better than we do but, you must not "just learn to live with it." Once we've shown you that you are having chronic symptoms, no matter how subtle, you must take charge right away and not let them smolder.

Investing in a peak flow meter will allow you even better management of your medication regiment. It will also make it very obvious when you will need to call us. Sometimes, you have gotten so used to being "tight" you do not realize just how obstructed your airflow really is.

By optimizing your treatment you will prevent as much wheezing as you can, and keep the bronchi as open and clear as possible. If you do not optimize your treatment, over time you will get scarring or fibrous of your airways, one air cell at a time or many. This

kind of scarring or fibrous leads to emphysema over many years. This can greatly affect your quality of life, as you get older. Thus, in the short run, and in the long run as well, treating your asthma aggressively is imperative.

Remember, no matter how good you get at being in charge of your symptoms, **ASTHMA IS LIFE-THREATENING!** Please never hesitate to call if you can't clear your breathing. If the thought crosses your mind, that "maybe I should call the doctor", then you should call us. If you are not sure how you are doing, not sure you are clear enough, or are unsure of what to do next, or have a question about a medication's effectiveness or side effects, it means you should call us immediately. You may not need to go to the emergency room, but let us help you decide that. Never decide that on your own. Call us sooner rather than later, **ALWAYS!**

Learn the Steps of Severity of Asthma:

Start your controller medications if you are developing "Persistent" asthma as defined below:

Step 1: MILD INTERMITTENT asthma: Symptoms occurring **twice a week** or less. No symptoms between exacerbations (lasting a few hours to days) with variable intensity. **Night symptoms occur no more than twice a month.**

Step 2: MILD PERSISTENT asthma: Symptoms occurring **more than twice a week**, Exacerbations may affect activity. **Night symptoms occurring more than twice a month.**

Step 3: MODERATE PERSISTENT asthma: **Daily** Symptoms, daily use of inhaled short-acting beta agonist, exacerbations affect activity. Exacerbations occur more than twice a week and may last for days. **Night symptoms occurring more than once a week.**

Step 4: SEVERE PERSISTENT asthma: **Continual** symptoms, Limited physical activity, frequent exacerbations. **Frequent night time symptoms.**

Call us if you have:

1. Persistent coughing and/or wheezing that is unresponsive to your medications
2. Vomiting that prevents administration of oral medications.
3. Difficulty in speaking because of respiratory distress
4. Fever
5. Chest, neck or throat pain
6. If you are receiving Theophylline and develop gastrointestinal side effects, loss of appetite, vomiting, headaches, hyperactivity and jitteriness
7. Missing school or work or have your sleep disturbed in anyway from your asthma, even a persistent coughing.

In Summary:

1. Control your allergies, and avoid allergens and irritants. **Never smoke** and don't let anyone smoke around you.
2. **Use your controller medicine every day.** Know when your asthma is becoming "persistent" as defined in the four steps of Asthma.
3. Exercise and eat a balanced diet
4. Push fluids
5. Use the mucolytics-starting with Robitussin liqui-gels
6. Use your bronchodilator to keep your lungs open as much as you can and as fully as you can. Do this at the first sign of a cold or the first signs of wheezing and before you exercise if you have EIA (exercise induced asthma)
7. Make sure you are using your inhalers correctly, with or without the spacers. Most importantly, take your asthma seriously, and call immediately for help, or if you have any questions, or if you are not improving as you usually do.

(Created 0/02)

This handout provides a general overview on this topic and may not apply to everyone. To find out if this handout applies to you and to get more information on this subject, talk to your family doctor.

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