



Diseases and Conditions

Asthma

Asthma medications have different purposes. Find out what they are and what they do.

By Mayo Clinic Staff

Asthma medications play an important role in managing signs and symptoms, such as coughing, wheezing and shortness of breath. Your age, your symptoms, the severity of your asthma and medication side effects all play a role in choosing the type and dose of asthma medications you need.

Because your asthma may change over time, work closely with your doctor to help track your symptoms and make adjustments to your asthma medications if needed.

Category	Purpose	Medication types
Long-term asthma control medications	Taken regularly to control chronic symptoms and prevent asthma attacks — the most important type of treatment for most people with asthma	<ul style="list-style-type: none">• Inhaled corticosteroids• Leukotriene modifiers• Long-acting beta agonists (LABAs)• Theophylline• Combination inhalers that contain both a corticosteroid and a LABA
Quick-relief medications	Taken as needed for rapid, short-term relief of symptoms —	<ul style="list-style-type: none">• Short-acting beta agonists such as albuterol

(rescue medications)	used to prevent or treat an asthma attack	<ul style="list-style-type: none"> • Ipratropium (Atrovent) • Oral and intravenous corticosteroids (for serious asthma attacks)
Medications for allergy-induced asthma	Taken regularly or as needed to reduce your body's sensitivity to a particular allergy-causing substance (allergen)	<ul style="list-style-type: none"> • Allergy shots (immunotherapy) • Omalizumab (Xolair)

Many people with asthma need to take long-term control medications on a daily basis. You take these medications even when you don't have symptoms. There are several types of long-term control medications, including the following.

Inhaled corticosteroids

These anti-inflammatory drugs are the most effective and commonly used long-term control medications for asthma. They reduce swelling and tightening in your airways. You may need to use these medications for several days to weeks before they reach their maximum benefit. Inhaled corticosteroids include:

- Fluticasone (Flovent Diskus)
- Budesonide (Pulmicort)
- Mometasone (Asmanex Twisthaler)
- Beclomethasone (Qvar)
- Ciclesonide (Alvesco)

In children, long-term use of inhaled corticosteroids may slightly delay growth, but the benefits of using these medications to maintain good asthma control generally outweigh their risks. Regular use of inhaled corticosteroids helps keep asthma attacks and other problems linked to poorly controlled asthma in check.

Corticosteroids don't generally cause serious side effects. When they do occur, side effects can include mouth and throat irritation and oral yeast infections. If you're using a metered dose inhaler, use a spacer and rinse your mouth with water after each use to reduce the amount of drug that can be swallowed and absorbed into your body.

Leukotriene modifiers

These medications block the effects of leukotrienes, immune system chemicals that cause asthma symptoms. Leukotriene modifiers can help prevent symptoms for up to 24 hours. Examples include:

- Montelukast (Singulair)
- Zafirlukast (Accolate)
- Zileuton (Zyflo)

In rare cases, montelukast has been linked to psychological reactions, such as agitation, aggression, hallucinations, depression and suicidal thinking. See your doctor right away if you have any unusual reaction.

Long-acting beta agonists (LABAs)

These bronchodilator (brong-koh-DIE-lay-tur) medications open up narrowed airways and reduce swelling. Their effects last at least 12 hours, and they're used to control moderate to severe asthma and to prevent nighttime symptoms. LABAs are used on a regular schedule along with inhaled corticosteroids. Although they're effective, they've been linked to severe asthma attacks. For this reason, LABAs are taken only in combination with an inhaled corticosteroid. Examples of LABAs include:

- Salmeterol (Serevent)
- Formoterol (Foradil, Perforomist)

Theophylline

You take this bronchodilator in pill form every day to treat mild asthma. Theophylline (Theo-24, Elixophyllin, others) relaxes the airways and decreases the lungs' response to irritants. It can be helpful for nighttime asthma symptoms. If you're taking theophylline, you may need regular blood tests to make sure you're getting the correct dose. Potential side effects of theophylline include insomnia and gastroesophageal reflux.

Combination inhalers: Corticosteroids and long-acting beta agonists

Some inhaled asthma medication combinations contain both a corticosteroid and a bronchodilator:

- Fluticasone and salmeterol (Advair Diskus)
- Budesonide and formoterol (Symbicort)
- Mometasone and formoterol (Dulera)

As with other LABA medications, these inhalers may increase your risk of having a severe asthma attack and should be used with caution.

These asthma medications open the lungs by relaxing airway muscles. They're often called rescue medications because they can ease worsening symptoms or stop an asthma attack in progress. They begin working within minutes and are effective for four to six hours. For some people, using a quick-relief inhaler before exercise helps prevent shortness of breath and other asthma symptoms. Possible side effects include jitteriness and palpitations.

Quick-relief medications include:

- Albuterol (ProAir HFA, Ventolin HFA, others)
- Levalbuterol (Xopenex HFA)
- Pirbuterol (Maxair)

If your symptoms are minor and infrequent, or you have exercise-induced asthma, you may be able to manage your symptoms with one of these medications alone. However, most people with persistent asthma need to rely primarily on an inhaled corticosteroid or other long-term control medication. Short-acting asthma medications are often used to treat asthma attacks and exercise-induced asthma, but they shouldn't be used on a regular, daily basis. If you need to use your inhaler more often than your doctor recommends, your asthma is not under control — and you may be increasing your risk of a serious asthma attack.

Ipratropium

Ipratropium (Atrovent) is a short-acting bronchodilator that's usually prescribed for emphysema or chronic bronchitis, but is sometimes used to treat asthma attacks. It may be used along with — or as an alternative to — short-acting beta agonists.

Oral corticosteroids for serious asthma attacks

These medications may be taken to treat severe asthma attacks. They can cause bothersome short-term side effects and more-serious side effects if they're taken for a long period of time. Examples include:

- Prednisone
- Methylprednisolone

Long-term use of these medications can cause side effects including cataracts, thinning bones (osteoporosis), muscle weakness, decreased resistance to infection, high blood pressure and reduced growth in children.

Medications that focus on treating allergy triggers include:

- **Allergy shots.** Allergy shots (immunotherapy) may be an option if you have allergic asthma that can't be controlled by avoiding triggers. You'll begin with skin tests to determine which allergens trigger your asthma symptoms. Then you'll get a series of injections containing small doses of those allergens.

You generally receive injections once a week for a few months, and then once a month for a period of three to five years. In some cases, desensitization can be done more quickly. Over time, you should lose your sensitivity to the allergens.

- **Omalizumab.** Omalizumab (Xolair) is sometimes used to treat asthma triggered by airborne allergens. If you have allergies, your immune system produces allergy-

causing antibodies to attack substances that generally cause no harm, such as pollen, dust mites and pet dander. Omalizumab blocks the action of these antibodies, reducing your immune system reaction that causes allergy and asthma symptoms.

Omalizumab is given by injection every two to four weeks. It isn't generally recommended for children under 12. In rare cases, this medication has triggered a life-threatening allergic reaction (anaphylaxis). Anyone who takes omalizumab should be monitored closely by health professionals after getting an omalizumab injection in case of a severe reaction.

- **Allergy medications.** These include oral and nasal spray antihistamines and decongestants as well as corticosteroid and cromolyn nasal sprays. Allergy medications are available over-the-counter and in prescription form.

Corticosteroid nasal spray helps reduce inflammation without causing the rebound effect sometimes caused by nonprescription sprays. Because it has few, if any, side effects, cromolyn is safe to use over long periods of time.

Carefully tracking symptoms and side effects — and adjusting your treatment accordingly — is the key to keeping your asthma symptoms under control. With your doctor or other health care providers, write a detailed plan for taking long-term control medications and for managing an asthma attack. Then, carefully follow your plan.

Know when to adjust your medications, when to see your doctor and how to recognize an asthma emergency. If your doctor has prescribed a peak flow meter to measure how well your lungs are working, use it according to your plan. Even if you feel well, keep taking your medications as prescribed and tracking your symptoms until you talk to your doctor.

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