

Medications for Asthma

Asthma is a disease of the airways that includes both inflammation and narrowing of the airway caused by smooth muscle tightening.

These changes lead to the typical symptoms of asthma, which include difficulty breathing, chest tightness, cough, and wheezing. Symptoms may vary from day to day and may be triggered by exposure to allergens (such as pollen, mold, dust, and animal dander), cold air, irritants (such as tobacco smoke), or certain medical conditions or medications (such as upper respiratory tract infections, allergies, or β -blockers).

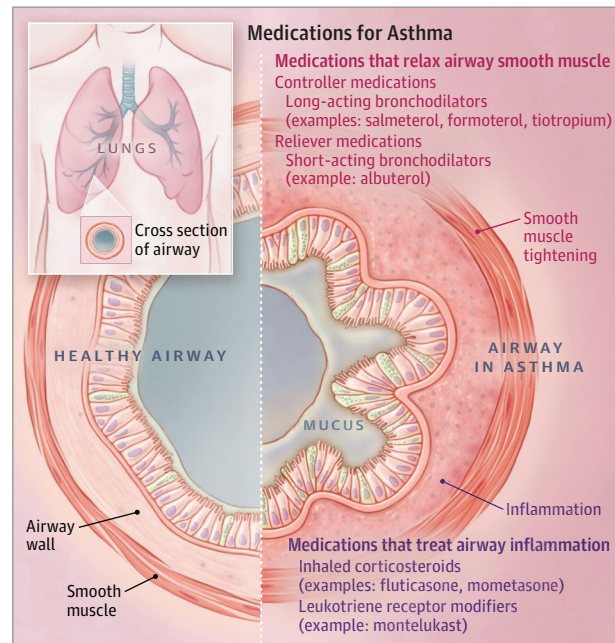
Medications Used to Treat Asthma

Medications are used to treat asthma to reduce the chance of symptoms worsening, which could lead to the need for additional medications or a visit to the hospital or emergency room. Two important categories of medications are used for daily management of asthma: rescue and controller therapies.

Rescue therapies are used on an as-needed basis to provide symptom relief within minutes. Some people with asthma need only a rescue inhaler, such as people who have symptoms only when they are physically active or people with intermittent asthma symptoms. However, using a rescue therapy too often (more than 2 days a week) may be a sign of uncontrolled asthma and should be brought to the attention of a doctor. **Short-acting bronchodilators** are the standard rescue therapy for patients of all ages. Albuterol is the short-acting bronchodilator used for asthma and comes as an inhaler and nebulizer solution.

Controller therapies are used daily to treat the underlying inflammation and airway narrowing in an effort to obtain overall asthma control. Controller medications are not used to treat acute asthma attacks. Not all patients with asthma need a controller medicine. If your asthma symptoms happen more than 2 times per week, you wake up more than 2 nights per month, you need a rescue inhaler more than 2 days a week, or your asthma interferes with your daily activities, your asthma is likely severe enough to need controller therapy.

- **Inhaled corticosteroids** are the standard controller therapy for asthma regardless of patient age. These drugs help decrease inflammation in the lungs and should be taken on a daily basis. It is important to rinse your mouth out after each use to prevent fungal infections in your mouth.
- **Long-acting bronchodilators** help relax the smooth muscles in the airway in older children and adults but are never used alone as a controller. They are always added to an inhaled corticosteroid when the corticosteroid is not enough to control asthma symptoms. Many inhalers contain both a corticosteroid and a long-acting bronchodilator.



- **Leukotriene receptor modifiers** are oral medications that help reduce chemicals released inside the body when it is exposed to an allergen such as pollen, mold, dust, or animal dander that would otherwise cause inflammation and tightening of the airways. In some patients, these drugs may be added to inhaled corticosteroids to help obtain better asthma control.
- Other types of medications are available but not used as commonly. **Biologic therapies** are injectable drugs that are added to other controller medications in specific types of asthma determined through blood testing.

FOR MORE INFORMATION

- American Academy of Asthma, Allergy & Immunology
<https://www.aaaai.org/conditions-and-treatments/asthma>
- Centers for Disease Control and Prevention
<https://www.cdc.gov/asthma/faqs.htm>
- National Heart, Lung, and Blood Institute
<https://www.nhlbi.nih.gov/health-topics/asthma>

Authors: Diana M. Sobieraj, PharmD; William L. Baker, PharmD

Conflict of Interest Disclosures: The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

Sources: Sobieraj DM, Baker WL, Nguyen E, et al. *JAMA*. doi:10.1001/jama.2018.2757
Sobieraj DM, Weeda ER, Nguyen E, et al. *JAMA*. doi:10.1001/jama.2018.2769

The JAMA Patient Page is a public service of *JAMA*. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, *JAMA* suggests that you consult your physician. This page may be photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, call 312/464-0776.