

Asthma

Definition

Asthma is a condition in which your airways narrow and swell and produce extra mucus. This can make breathing difficult and trigger coughing, wheezing and shortness of breath.

For some people, asthma is a minor nuisance. For others, it can be a major problem that interferes with daily activities and may lead to a life-threatening asthma attack.

Asthma can't be cured, but its symptoms can be controlled. Because asthma often changes over time, it's important that you work with your doctor to track your signs and symptoms and adjust treatment as needed.

Symptoms

Asthma symptoms vary from person to person. You may have infrequent asthma attacks, have symptoms only at certain times — such as when exercising — or have symptoms all the time.

Asthma signs and symptoms include:

- Shortness of breath
- Chest tightness or pain
- Trouble sleeping caused by shortness of breath, coughing or wheezing
- A whistling or wheezing sound when exhaling (wheezing is a common sign of asthma in children)
- Coughing or wheezing attacks that are worsened by a respiratory virus, such as a cold or the flu

Signs that your asthma is probably worsening include:

- Asthma signs and symptoms that are more frequent and bothersome
- Increasing difficulty breathing (measurable with a peak flow meter, a device used to check how well your lungs are working)
- The need to use a quick-relief inhaler more often

For some people, asthma signs and symptoms flare up in certain situations:

- **Exercise-induced asthma**, which may be worse when the air is cold and dry

- **Occupational asthma**, triggered by workplace irritants such as chemical fumes, gases or dust
- **Allergy-induced asthma**, triggered by particular allergens, such as pet dander, cockroaches or pollen

When to see a doctor

Seek emergency treatment

Severe asthma attacks can be life-threatening. Work with your doctor to determine what to do when your signs and symptoms worsen — and when you need emergency treatment. Signs of an asthma emergency include:

- Rapid worsening of shortness of breath or wheezing
- No improvement even after using a quick-relief inhaler, such as albuterol
- Shortness of breath when you are doing minimal physical activity

Contact your doctor

See your doctor:

- **If you think you have asthma.** If you have frequent coughing or wheezing that lasts more than a few days or any other signs or symptoms of asthma, see your doctor. Treating asthma early may prevent long-term lung damage and help keep the condition from worsening over time.
- **To monitor your asthma after diagnosis.** If you know you have asthma, work with your doctor to keep it under control. Good long-term control helps you feel better from day to day and can prevent a life-threatening asthma attack.
- **If your asthma symptoms get worse.** Contact your doctor right away if your medication doesn't seem to ease your symptoms or if you need to use your quick-relief inhaler more often. Don't try to solve the problem by taking more medication without consulting your doctor. Overusing asthma medication can cause side effects and may make your asthma worse.
- **To review your treatment.** Asthma often changes over time. Meet with your doctor regularly to discuss your symptoms and make any needed treatment adjustments.

Causes

It isn't clear why some people get asthma and others don't, but it's probably due to a combination of environmental and genetic (inherited) factors.

Asthma triggers

Exposure to various irritants and substances that trigger allergies (allergens) can trigger signs and symptoms of asthma. Asthma triggers are different from person to person and can include:

- Airborne allergens, such as pollen, animal dander, mold, cockroaches and dust mites
- Respiratory infections, such as the common cold
- Physical activity (exercise-induced asthma)
- Cold air
- Air pollutants and irritants, such as smoke
- Certain medications, including beta blockers, aspirin, ibuprofen (Advil, Motrin IB, others) and naproxen (Aleve)
- Strong emotions and stress
- Sulfites and preservatives added to some types of foods and beverages, including shrimp, dried fruit, processed potatoes, beer and wine
- Gastroesophageal reflux disease (GERD), a condition in which stomach acids back up into your throat

Treatments and drugs

Prevention and long-term control are key in stopping asthma attacks before they start. Treatment usually involves learning to recognize your triggers, taking steps to avoid them and tracking your breathing to make sure your daily asthma medications are keeping symptoms under control. In case of an asthma flare-up, you may need to use a quick-relief inhaler, such as albuterol.

Medications

The right medications for you depend on a number of things — your age, symptoms, asthma triggers and what works best to keep your asthma under control.

Preventive, long-term control medications reduce the inflammation in your airways that leads to symptoms. Quick-relief inhalers (bronchodilators) quickly open swollen airways that are limiting breathing. In some cases, allergy medications are necessary.

Long-term asthma control medications, generally taken daily, are the cornerstone of asthma treatment. These medications keep asthma under control on a day-to-day basis and make it less likely you'll have an asthma attack. Types of long-term control medications include:

- **Inhaled corticosteroids.** These anti-inflammatory drugs include fluticasone (Flonase, Flovent HFA), budesonide (Pulmicort Flexhaler, Rhinocort), flunisolide (Aerospan HFA), ciclesonide (Alvesco, Omnaris, Zetonna), beclomethasone (Qnasl, Qvar), mometasone (Asmanex) and fluticasone furoate (Arnuity Ellipta).

You may need to use these medications for several days to weeks before they reach their maximum benefit. Unlike oral corticosteroids, these corticosteroid medications have a relatively low risk of side effects and are generally safe for long-term use.

- **Leukotriene modifiers.** These oral medications — including montelukast (Singulair), zafirlukast (Accolate) and zileuton (Zyflo) — help relieve asthma symptoms for up to 24 hours.

In rare cases, these medications have been linked to psychological reactions, such as agitation, aggression, hallucinations, depression and suicidal thinking. Seek medical advice right away for any unusual reaction.

- **Long-acting beta agonists.** These inhaled medications, which include salmeterol (Serevent) and formoterol (Foradil, Perforomist), open the airways.

Some research shows that they may increase the risk of a severe asthma attack, so take them only in combination with an inhaled corticosteroid. And because these drugs can mask asthma deterioration, don't use them for an acute asthma attack.

- **Combination inhalers.** These medications — such as fluticasone-salmeterol (Advair Diskus), budesonide-formoterol (Symbicort) and formoterol-mometasone (Dulera) — contain a long-acting beta agonist along with a corticosteroid. Because these combination inhalers contain long-acting beta agonists, they may increase your risk of having a severe asthma attack.
- **Theophylline.** Theophylline (Theo-24, Elixophyllin, others) is a daily pill that helps keep the airways open (bronchodilator) by relaxing the muscles around the airways. It's not used as often now as in past years.

Quick-relief (rescue) medications are used as needed for rapid, short-term symptom relief during an asthma attack — or before exercise if your doctor recommends it. Types of quick-relief medications include:

- **Short-acting beta agonists.** These inhaled, quick-relief bronchodilators act within minutes to rapidly ease symptoms during an asthma attack. They include albuterol (ProAir HFA, Ventolin HFA, others) and levalbuterol (Xopenex).

Short-acting beta agonists can be taken using a portable, hand-held inhaler or a nebulizer — a machine that converts asthma medications to a fine mist — so that they can be inhaled through a face mask or a mouthpiece.

- **Ipratropium (Atrovent).** Like other bronchodilators, ipratropium acts quickly to immediately relax your airways, making it easier to breathe. Ipratropium is mostly used for emphysema and chronic bronchitis, but it's sometimes used to treat asthma attacks.
- **Oral and intravenous corticosteroids.** These medications — which include prednisone and methylprednisolone — relieve airway inflammation caused by severe asthma. They can cause serious side effects when used long term, so they're used only on a short-term basis to treat severe asthma symptoms.

If you have an asthma flare-up, a quick-relief inhaler can ease your symptoms right away. But if your long-term control medications are working properly, you shouldn't need to use your quick-relief inhaler very often.

Keep a record of how many puffs you use each week. If you need to use your quick-relief inhaler more often than your doctor recommends, see your doctor. You probably need to adjust your long-term control medication.

Allergy medications may help if your asthma is triggered or worsened by allergies. These include:

- **Allergy shots (immunotherapy).** Over time, allergy shots gradually reduce your immune system reaction to specific allergens. You generally receive shots once a week for a few months, then once a month for a period of three to five years.
- **Omalizumab (Xolair).** This medication, given as an injection every two to four weeks, is specifically for people who have allergies and severe asthma. It acts by altering the immune system.

Bronchial thermoplasty

This treatment — which isn't widely available nor right for everyone — is used for severe asthma that doesn't improve with inhaled corticosteroids or other long-term asthma medications.

Generally, over the span of three outpatient visits, bronchial thermoplasty heats the insides of the airways in the lungs with an electrode, reducing the smooth muscle inside the airways. This limits the ability of the airways to tighten, making breathing easier and possibly reducing asthma attacks.

Treat by severity for better control: A stepwise approach

Your treatment should be flexible and based on changes in your symptoms, which should be assessed thoroughly each time you see your doctor. Then your doctor can adjust your treatment accordingly.

For example, if your asthma is well-controlled, your doctor may prescribe less medicine. If your asthma isn't well-controlled or is getting worse, your doctor may increase your medication and recommend more-frequent visits.

Asthma action plan

Work with your doctor to create an asthma action plan that outlines in writing when to take certain medications or when to increase or decrease the dose of your medications based on your symptoms. Also include a list of your triggers and the steps you need to take to avoid them.

Your doctor may also recommend tracking your asthma symptoms or using a peak flow meter on a regular basis to monitor how well your treatment is controlling your asthma.

Prevention

While there's no way to prevent asthma, by working together, you and your doctor can design a step-by-step plan for living with your condition and preventing asthma attacks.

- **Follow your asthma action plan.** With your doctor and health care team, write a detailed plan for taking medications and managing an asthma attack. Then be sure to follow your plan.

Asthma is an ongoing condition that needs regular monitoring and treatment. Taking control of your treatment can make you feel more in control of your life in general.

- **Get vaccinated for influenza and pneumonia.** Staying current with vaccinations can prevent flu and pneumonia from triggering asthma flare-ups.
- **Identify and avoid asthma triggers.** A number of outdoor allergens and irritants — ranging from pollen and mold to cold air and air pollution — can trigger asthma

attacks. Find out what causes or worsens your asthma, and take steps to avoid those triggers.

- **Monitor your breathing.** You may learn to recognize warning signs of an impending attack, such as slight coughing, wheezing or shortness of breath. But because your lung function may decrease before you notice any signs or symptoms, regularly measure and record your peak airflow with a home peak flow meter.
- **Identify and treat attacks early.** If you act quickly, you're less likely to have a severe attack. You also won't need as much medication to control your symptoms.

When your peak flow measurements decrease and alert you to an oncoming attack, take your medication as instructed and immediately stop any activity that may have triggered the attack. If your symptoms don't improve, get medical help as directed in your action plan.

- **Take your medication as prescribed.** Just because your asthma seems to be improving, don't change anything without first talking to your doctor. It's a good idea to bring your medications with you to each doctor visit, so your doctor can double-check that you're using your medications correctly and taking the right dose.
- **Pay attention to increasing quick-relief inhaler use.** If you find yourself relying on your quick-relief inhaler, such as albuterol, your asthma isn't under control. See your doctor about adjusting your treatment.