

AIRONYL...

WHAT A LONG BREATH



What Is Asthma?

Asthma (AZ-ma) is a chronic (long-term) lung disease that inflames and narrows the airways. Asthma causes recurring periods of wheezing (a whistling sound when you breathe), chest tightness, shortness of breath, and coughing. The coughing often occurs at night or early in the morning.

Asthma affects people of all ages, but it most often starts in childhood. In the United States, more than 22 million people are known to have asthma. Nearly 6 million of these people are children

Overview

The airways are tubes that carry air into and out of your lungs. People who have asthma have inflamed airways. This makes the airways swollen and very sensitive. They tend to react strongly to certain substances that are breathed in.

When the airways react, the muscles around them tighten. This causes the airways to narrow, and less air flows to your lungs. The swelling also can worsen, making the airways even narrower. Cells in the airways may make more mucus than normal. Mucus is a sticky, thick liquid that can further narrow your airways. This chain reaction can result in asthma symptoms. Symptoms can happen each time the airways are irritated. Asthma

Sometimes symptoms are mild and go away on their own or after minimal treatment with an asthma medicine. At other times, symptoms continue to get worse. When symptoms get more intense and/or additional symptoms appear, this is an asthma attack. Asthma attacks also are called flareups or exacerbations.

It's important to treat symptoms when you first notice them. This will help prevent the symptoms from worsening and causing a severe asthma attack. Severe asthma attacks may require emergency care, and they can cause death.

What Causes Asthma?

The exact cause of asthma isn't known. Researchers think a combination of factors (family genes and certain environmental exposures) interact to cause asthma to develop, most often early in life. These factors include:

- An inherited tendency to develop allergies, called atopy (AT-o-pe)
- Parents who have asthma
- Certain respiratory infections during childhood
- Contact with some airborne allergens or exposure to some viral infections in infancy or in early childhood when the immune system is developing

If asthma or atopy runs in your family, exposure to airborne allergens (for example, house dust mites, cockroaches, and possibly cat or dog dander) and irritants (for example, tobacco smoke) may make your airways more reactive to substances in the air you breathe.

Different factors may be more likely to cause asthma in some people than in others. Researchers continue to explore what causes asthma.

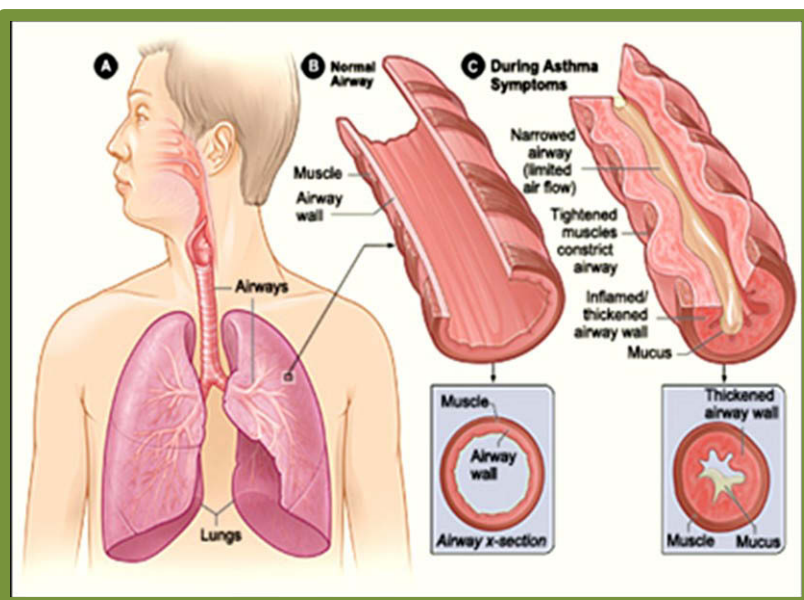


Figure A shows the location of the lungs and airways in the body. Figure B shows a cross-section of a normal airway. Figure C shows a cross-section of an airway during asthma symptoms.

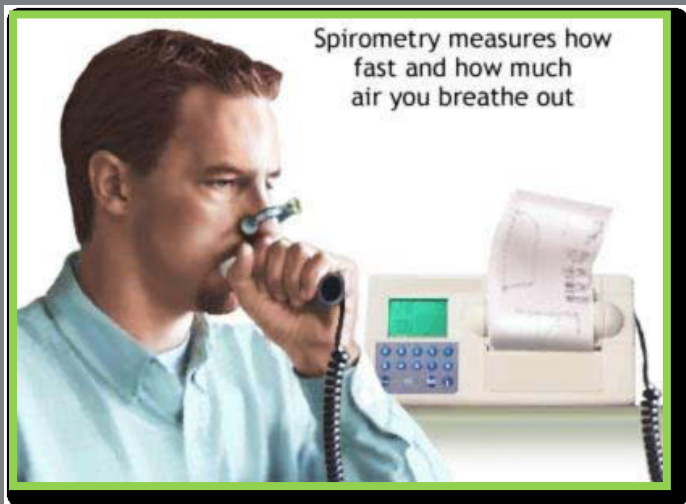
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Diagnostic Tests

Lung Function Test

Your doctor will use a test called spirometry (spi-ROM-eh-tre) to check how your lungs are working. This test measures how much air you can breathe in and out. It also measures how fast you can blow air out. Your doctor also may give you medicines and then test you again to see whether the results have improved.



If the starting results are lower than normal and improve with the medicine, and if your medical history shows a pattern of asthma symptoms, your diagnosis will likely be asthma.

Other Tests

Doctor may order other tests if he or she needs more information to make a diagnosis. Other tests may include:

- Allergy testing to find out which allergens affect you, if any.
- A test to measure how sensitive your airways are. This is called a bronco-provocation test. Using spirometry, this test repeatedly measures your lung function during physical activity or after you receive increasing doses of cold air or a special chemical to breathe in.
- A test to show whether you have another disease with the same symptoms as asthma, such as reflux disease, vocal cord dysfunction, or sleep apnea.
- A chest x ray or an EKG (electrocardiogram). These tests will help find out whether a foreign object or other disease may be causing your symptoms of allergies, including the allergic skin condition eczema.

Diagnosing Asthma in Young Children

Most children who have asthma develop their first symptoms before 5 years of age. However, asthma in young children (aged 0 to 5 years) can be hard to diagnose. Sometimes it can be difficult to tell whether a child has asthma or another childhood condition because the symptoms of both conditions can be similar.

Also, many young children who have wheezing episodes when they get colds or respiratory infections don't go on to have asthma after they're 6 years old. These symptoms may be due to the fact that infants have smaller airways that can narrow even further when they get a cold or respiratory infection. The airways grow as a child grows older, so wheezing no longer occurs when the child gets a cold.

A young child who has frequent wheezing with colds or respiratory infections is more likely to have asthma if:

- One or both parents have asthma
- The child has signs of allergies, including the allergic skin condition eczema
- The child has allergic reactions to pollens or other airborne allergens
- The child wheezes even when he or she doesn't have a cold or other infection

A lung function test along with a medical history and physical exam is the most certain way to diagnose asthma. However, this test is hard to do in children younger than 5 years. Thus, doctors must rely on children's medical histories, signs and symptoms, and physical exams to make a diagnosis. Doctors also may use a 4 to 6 week trial of asthma medicines to see how well a child responds.

“Breathing Is the Greatest Pleasure in Life”

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Bronchodilator

A bronchodilator is a substance that dilates the bronchi and bronchioles, decreasing resistance in the respiratory airway and increasing airflow to the lungs. Bronchodilators may be endogenous (originating naturally within the body), or they may be medications administered for the treatment of breathing difficulties. They are most useful in obstructive lung diseases, of which asthma and chronic obstructive pulmonary disease are the most common conditions. Although this remains somewhat controversial, they might be useful in bronchiolitis. They are often prescribed but of unproven significance in restrictive lung diseases.

Bronchodilators are either short-acting or long-acting. Short-acting medications provide quick or "rescue" relief from acute bronchoconstriction. Long-acting bronchodilators help to control and prevent symptoms. The three types of prescription bronchodilating drugs are β 2-agonists (short- and long-acting), anticholinergics (short-acting), and theophylline (long-acting).
Contents

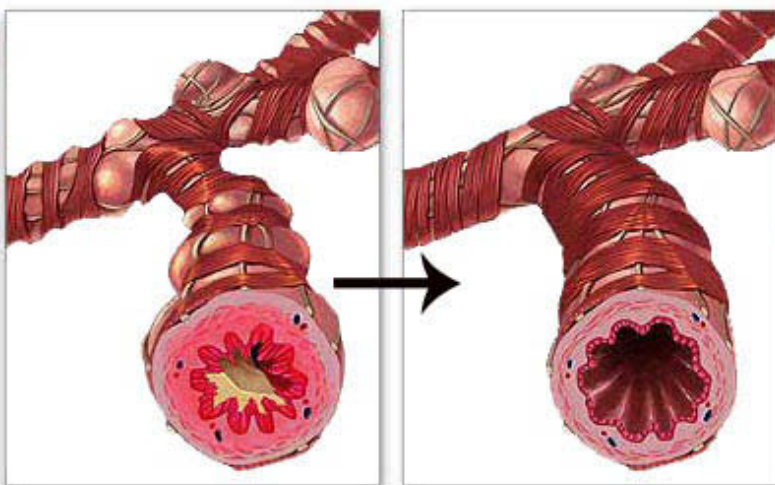
Short-acting β 2-agonists

These are quick-relief or "rescue" medications that provide quick fast, temporary relief from asthma symptoms or flare-ups. These medications usually take effect within 20 minutes or less, and can last from four to six hours. These inhaled medications are best for treating sudden and severe or new asthma symptoms. Taken 15 to 20 minutes ahead of time, these medications can also prevent asthma symptoms triggered by exercise or exposure to cold air. Some short-acting β -agonists (for example albuterol) are specific to the lungs; they are called β 2-agonists and can relieve bronchospasms without unwanted cardiac (β 1) side effects of nonspecific β -agonists (for example, ephedrine or epinephrine). Patients who regularly or frequently need to take short-acting β -agonists should consult their doctor, as such usage indicates uncontrolled asthma, and their routine medications may need adjustment.

Salbutamol is an example of a Short-acting β 2-agonists

Asthmatic Bronchiole

Bronchodilator Effect



Aironyl

Long acting beta-adrenoceptor agonist

These are long-term medications taken routinely in order to control and prevent bronchoconstriction. They are not intended for fast relief. These medications take longer to begin working, but relieve airway constriction for up to 12 hours. Commonly taken twice a day with an anti-inflammatory medication, they maintain open airways and prevent asthma symptoms, particularly at night. Terbutaline is a β 2-adrenergic receptor agonist. Terbutaline is currently on the World Anti-Doping Agency's list of prohibited drugs for Olympic athletes, except when administered by inhalation and a Therapeutic Use Exemption (TUE) has been obtained in advance.

Uses

Terbutaline is used as a fast-acting bronchodilator (often used as a short-term asthma treatment) and as a tocolytic[1] to delay premature labor. The inhaled form of terbutaline starts working within 15 minutes and can last up to 6 hours. Terbutaline as a treatment for premature labor is an off-label use not approved by the FDA. It is a pregnancy category 'B' medication and is routinely prescribed to stop contractions.

Properties:

Terbutaline sulfate is a selective beta_adrenoceptor stimulant, with selective bronchodilator action. It is more selectively acting on the B2_receptors of the tracheal and bronchial smooth muscles but its effect is relatively weak on the B1_receptors of the heart; therefore palpitations seldom occurs.

Indications:

Bronchial asthma, chronic bronchitis, emphysema, and other bronchopulmonary disorders involving bronchospasm.



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