

ASTHMA

Asthma is a chronic lung disease that inflames and narrows the airways. The exact cause is unknown and there is no cure. It most often starts during childhood and there is frequently a familial tendency. Asthma causes wheezing, chest tightness, shortness of breath, and coughing especially at night and early morning. Symptoms can range from a mild reaction that dissipates on its own to severe attack requiring hospitalization. Asthma can be controlled best by knowing the warning signs of an attack, staying away from triggers, treating symptoms early and following a personalized Asthma Action Plan prescribed by your primary care provider.

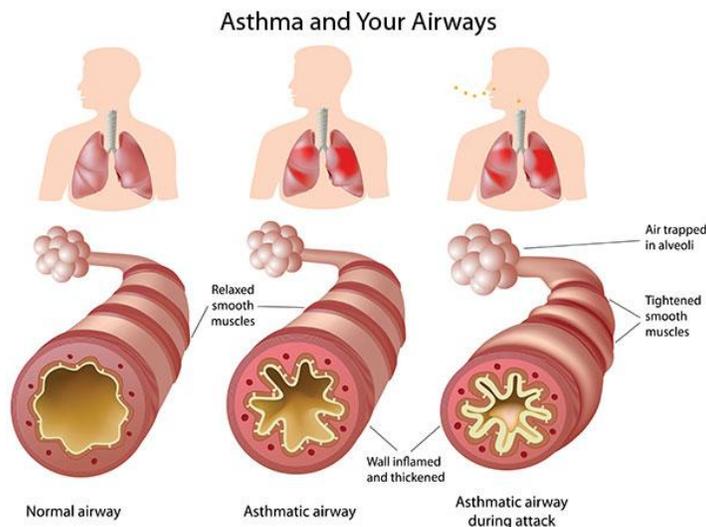
How is Asthma Diagnosed?

To establish the diagnosis of asthma, certain criteria should be met:

1. Reoccurring symptoms of airway restriction
2. A positive response to a rescue medication.
3. Differential diagnoses have been considered and excluded.

What happens to the lungs in asthma?

Two different reactions, bronchospasm and inflammation occur in the airways with asthma. *Bronchospasm* is the tightening of the muscles around the airways causing them to become narrow. *Inflammation* or swelling in the bronchial tubes cause narrowing of the airways and excess mucus. Bronchospasm and inflammation can occur at the same time or follow each other. The narrowing of the airways causes the typical asthma symptoms like wheezing, coughing, and feeling short of breath. Wheezing is a whistling sound made during expiration and sometimes inspiration as well when a person is having an asthma exacerbation.



<http://www.nlm.nih.gov/medlineplus/magazine/issues/fall11/articles/fall11pg4.html>

What Causes Asthma Attacks?

Numerous environmental stimuli called asthma triggers can induce an asthma attack. Some common triggers include:

Tobacco Smoke – It is imperative that no one smokes in the home or around the child with asthma. Even having smoke on your clothing can cause a child to have a reaction.

Dust Mites - Dust mites are tiny bugs that can be found in most homes. Using mattress and pillow covers help make a barrier between dust mites and the child. Down-filled pillows, quilts, and comforters are not recommended. Reduce the number of stuffed animals in the bedroom if possible. Wash your bedding in hot water.

Air Pollution - Outdoor pollution in the air from factories, cars, etc. can trigger an asthma attack. Pay attention to air quality forecasts and plan your outdoor activities for when air pollution levels are low.

Cockroach Allergen - Cockroaches and their droppings can trigger an asthma attack. Vacuum often and use pest control methods to reduce the problem.

Pets - Furry pets can trigger an asthma attack. If your child is sensitive to the dander, keep the pet out of the child's bedroom, bathe the pet weekly, and keep the animal outside as much as possible. Vacuum/mop floors frequently.

Mold - Breathing in mold can trigger an asthma attack. Reduce mold by controlling the humidity in your home using an air conditioner or dehumidifier. Use a hygrometer to check that humidity levels are no higher than 50%. Fix water leaks, which encourage mold to grow behind walls and under floors.

Smoke From Burning Wood - Smoke can cause an asthma attack so avoid burning wood in your home.

Other Triggers - Infections, allergies, breathing in some chemicals, and acid reflux can also trigger attacks. Physical exercise; some medicines; bad weather, such as thunderstorms or high humidity; breathing in cold, dry air; and some foods, food additives, and fragrances can also trigger an asthma attack. Strong emotions can lead to hyperventilation that can also cause an asthma attack.

What Tests are performed?

- **Spirometer** is a lung function test that measures the largest amount of air exhaled after taking a very deep breath. Measurements are taken before and after asthma medicine.
- **Peak Flow meter** is a portable device that measures lung capacity or how well your lungs are working. Using a peak flow meter regularly can help track your asthma control.
- **Pulse oximeter** measures the oxygen saturation in the blood. Ideally it is 95% or above.
- **Asthma Action Plan** is a written plan given to you by your medical provider which identifies when your child needs asthma medication, what medication and how much depending on the severity of symptoms.

How Is Asthma Treated?

Asthma medicines come in two types—quick-relief and long-term control. Quick-relief medicines, such as albuterol or xopenex, control the symptoms of an asthma attack. If you need to use your quick-relief medicines more and more, you should visit your healthcare provider to see if you need an additional medicine to help prevent attacks. Long-term control medicines such as pulmicort, flovent and QVAR, help you have fewer and milder attacks. These long-term control medicines help prevent attacks and should be taken even when you don't have symptoms.

The important thing to remember is that you can control your child's asthma. Avoid your child's asthma triggers, identify symptoms early and take action as soon as symptoms occur. Be sure to follow up regularly with your child's primary care provider.

Resources:

Acute Asthma Guideline, Cincinnati Children's Hospital Medical Center: Evidence-based care guideline for management of acute asthma exacerbation in children. Asthma Exacerbation in Children Pediatric Evidence Based Care Guidelines, Cincinnati Children's Hospital Medical Center, Guideline 4, pages 1-35, September 16, 2010

http://www.cdc.gov/asthma/pdfs/asthma_brochure.pdf

<http://emedicine.medscape.com/article/800119-overview>

<http://www.nlm.nih.gov/medlineplus/magazine/issues/fall11/articles/fall11pg4.html>

What is Asthma? Texas Children's Hospital, Caring for Your Child's Health. Houston, Texas. 2005

<http://www.cdc.gov/asthma/parents.html>