

ALLERGY CONSULTANTS

Adult and Pediatric Allergy

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Asthma

Asthma is a chronic, inflammatory lung disease characterized by recurrent breathing problems. Patients who have asthma may experience one or more of the following symptoms: wheezing, coughing, chest tightness or shortness of breath. Symptoms and severity can differ greatly from one person to another. Some people experience occasional symptoms while others may have daily symptoms which can vary from mild to severe. Patients with more severe asthma may have a sudden onset of symptoms that require emergency care.

Everyone has a series of air passages (bronchial tubes or airways) in the lungs resembling an upside down tree. The windpipe (trachea) divides into large branches to the left and right lungs, and these large branches form progressively smaller branches all the way out to the edges of the lungs. Each branch has a thin blanket of mucous lining the inside of the bronchial tube to help trap inhaled pollutants, germs and allergy particles (allergens). The bronchial tubes are also surrounded by a layer of muscle. It is these bronchial tubes that are affected by asthma.

Asthma affects the breathing tubes (airways) of the lungs in three important ways:

1. **Inflammation:** This is characterized by swelling of the wall of the airway and increased mucous production. The inflammation of the airways makes them narrower for air to flow through which may cause a wheezing or whistling sound.
2. **Muscle constriction:** The muscles surrounding the airway contract, further narrowing the airway.
3. **Triggers:** The airways become overly sensitive to a variety of triggers that worsen the inflammation and muscle contraction. Common triggers include:
 - Exercise
 - Allergies
 - Irritants such as cold air, smoke, perfumes, or weather changes.
 - Infections such as viral respiratory infections or sinus infections. Patients often report that "colds always settle in my chest."

Asthma is treated in several important ways:

1. **Environmental control**—eliminating triggers of your asthma is important! Cigarette smoking (and passive smoke exposure) should be avoided. Measures to reduce allergic exposures are helpful. Avoiding pets, pollens, dust mites, and molds may reduce asthma symptoms and lessen the requirement for long term medication.

2. **Medications** are the mainstay of treatment. Patients who experience symptoms more than three days a week usually require a preventative, or controller, maintenance medication. People who experience occasional symptoms may require only a rescue inhaler to be used as needed. Patients with severe asthma may require two or more daily medications to adequately control symptoms. Each patient should have a plan tailored to the frequency and severity of symptoms, and know what to do if symptoms worsen. Commonly prescribed medications include:
 - a. **Inhaled corticosteroids**—act directly by blocking the inflammatory response of the airways. These inhaled medications have far fewer side effects than oral corticosteroids such as Orapred or Prednisone. Inhaled steroids are the most powerful and effective medications to reduce inflammation and are recommended by the National Heart Lung and Blood Institute for patients who need daily anti-asthma medication (e.g. Pulmicort, Flovent, Asmanex, Advair, Symbicort).
 - b. **Leukotriene antagonists**—are non steroid oral medications that also prevent inflammation of the airways (e.g. Singulair). They may relieve nasal symptoms in some patients.
 - c. **Bronchodilators**--help to relax the muscles of the airways and open them. There are short acting, **quick reliever or “rescue” forms** (e.g. Albuterol, Maxair, Xopenex) and long acting (e.g. Serevent, Foradil) forms of them. Bronchodilators provide temporary relief of symptoms but do not control the underlying inflammation.
 - d. **Combination medications**—some products combine an inhaled steroid with a long acting bronchodilator which is useful if anti-inflammatory therapy alone is not effective at controlling symptoms or preventing flares or attacks (e.g. Advair, Symbicort). There is some evidence in the medical literature that the addition of a long acting bronchodilator in a small percentage of children may be associated with an increase in asthma exacerbations. We trust that you would contact us immediately if you suspect that your asthma symptoms worsen.

3. **Immunotherapy** (allergy shots) may reduce an allergic person’s sensitivity to pollens, dust mites or cat allergens when avoidance and medications do not successfully control the symptoms.

Asthma control: there is no cure for asthma, but it can be controlled. When asthma is well controlled, a person should be able to sleep all night without awakening, exercise without symptoms, have good work/school attendance and avoid the need for emergency or urgent treatment. During each office visit there are certain questions we ask that help us to decide if your asthma is optimally controlled.

- Doses of rescue medicine—ideally fewer than two doses per week for symptoms.
- Ability to sleep all night without using a rescue medicine.
- Ability to participate fully in exercise or activities that you choose (whether or not you require a preventative dose of an inhaler).
- Work/school attendance—not having to miss school or work because of asthma.
- Need for oral steroid medication to control an attack.
- Need for emergency or acute care.
- Infections or other illnesses that may impact asthma symptoms.
- Compliance with medications—ideally taking all doses of preventative medicines every day.