

It's a fact:
Asthma related mortality has been decreasing since 2000. Read up on this chronic inflammatory disorder and breathe easier with your next asthma case.

What is asthma?

Asthma is a chronic inflammatory disorder of the airways characterized by episodes of reversible airflow obstruction and manifest by symptoms that may include coughing, wheezing, difficulty breathing and chest tightness. More than 22 million Americans are asthmatic. The cause of asthma, while unknown, is felt to involve an interaction of genetic and environmental factors, and rather than being a homogeneous disorder, different types of asthma are felt to exist.

While asthma may commence at any age, most are diagnosed during childhood. Diagnosis is made based upon history, physical examination, and pulmonary function testing, although specialized testing called a metacholine challenge is occasionally performed when the diagnosis is evasive. During a metacholine challenge, the patient is given a substance to inhale in conjunction with pulmonary function testing, and a resulting airflow obstruction of at least 20% is considered to be a positive test.

What triggers asthma symptoms?

Some asthmatics may experience symptoms with exercise, viral respiratory infections,

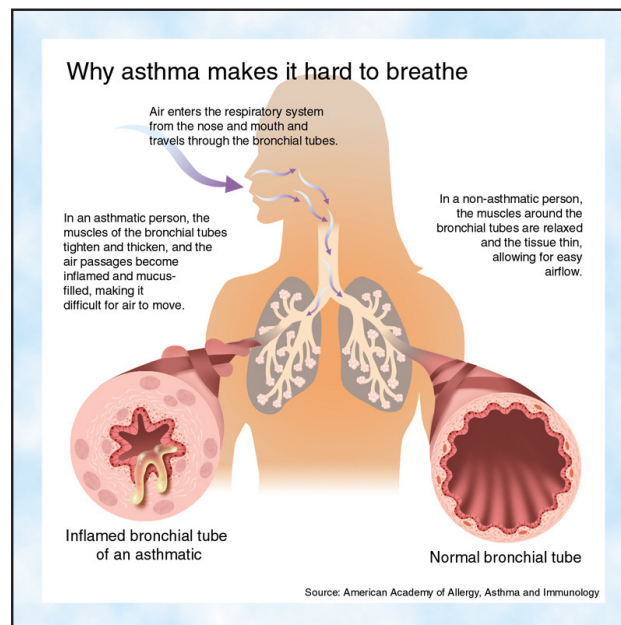
weather changes, stress, strong emotional expression, and upon exposure to a number of substances, including animal fur or hair, house dust mites, pollen, tobacco smoke, chemicals and others. Some asthmatics may also experience gastro-esophageal reflux (GERD), rhinitis, sinusitis and allergies.

In 2007, the National Asthma Education and Prevention Program issued new guidelines in the third Expert Panel Report (EPR3). To view the report, visit www.nhlbi.nih.gov/guidelines/asthma.

EPR3 stated that the goal of asthma therapy is asthma control,

with emphasis on reducing impairment, maintaining lung function and normal activity levels, meeting expectations of care, and reducing risk by preventing exacerbations, minimizing need for emergency care and hospitalization, preventing loss of lung function, and providing optimal use of medications with minimal or no side effects.

EPR3 identified the four components of asthma care to be assessment and monitoring,



ASTHMA MEDICATIONS

The generic drug is listed first in each category below. The brand drug follows the hyphen. **This is not a complete list.**

INHALED CORTICOSTEROIDS

Beclomethasone –Qvar
Budesonide–Pulmicort
Ciclesonide–Alvesco
Flunisolide–Aerobid
Fluticasone–Flovent
Mometasone–Asmanex
Triamcinolone–Azmacort

INHALED CORTICOSTEROID-LABA COMBINATIONS

Budesonide/formoterol
–Symbicort
Fluticasone/salmeterol
–Advair

OTHERS

Albuterol–Ventolin, ProAir,
Proventil
Cromolyn sodium–Intal
Formoterol–Foradil,
Perforomist
Ipratropium–Atrovent
Levalbuterol–Xopenex
Montelukast–Singulair
Nedocromil–Tilade
Omalizumab–Xolair
Pirbuterol–Maxair
Salmeterol–Serevent
Theophylline–Theo–Dur,
Theo-24, Uniphyl
Zafirlukast–Accolate
Zileuton–Zyflo

education, controlling environmental factors and comorbid conditions (other medical problems besides asthma that are present), and the stepwise use of medications, with therapy to be adjusted based upon the level of control. The importance of the asthmatic patient taking an active role in its management, with regular visits to the healthcare provider, was stressed.

One component of self management of asthma is the use of a peak flow meter, which is a handheld device that is blown into in order to obtain a numerical peak flow value. A lower than normal peak flow value could indicate the presence an asthmatic exacerbation and the need for further evaluation and treatment.

Four Categories of Asthma Severity

1. Intermittent
2. Mild Persistent
3. Moderate Persistent
4. Severe Persistent

How is asthma severity measured?

The four categories of asthma severity are intermittent, mild persistent, moderate persistent and severe persistent. Severity is

based upon a number of variables, including the frequency of symptoms, presence of nighttime awakenings, use of short acting medications known as beta-agonists for symptom control, interference with normal activity and lung function. It is possible for the severity class to change over time.

Overview of Asthma Medications

Medications to treat asthma can be categorized as either for the purpose of long-term control or for quick-relief. The most consistently effective long-term control medications are inhaled corticosteroids, which decrease inflammation via a number of different pathways and also decrease the adverse responsiveness of the airways to environmental irritants. (Please see the sidebar for a list of inhaled corticosteroids and for brand names of the medications mentioned in this article.)

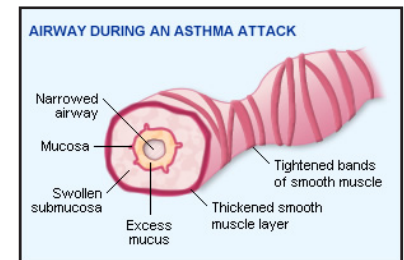
Long-acting beta-agonists (LABA), which include salmeterol and formoterol, are inhaled long-term control medications that dilate the airways for at least twelve hours after a single dose. Although not recommended as monotherapy (without the use of other medications) for asthma due to evidence of adverse outcomes, LABAs are available for asthmatics in combination formulations with inhaled corticosteroids, although experts are readdressing the question of whether LABAs in any form should be prescribed.

Other medications that may be used for the long-term control of asthma include:

- montelukast, zafirlukast, and zileuton, which are oral medications known as leukotriene modifiers, which block the action of certain substances and dilate the airways;
- cromolyn sodium and nedocromil, which are inhaled and decrease inflammation; omalizumab, which is injected and modulates the immune system by binding to certain antibodies;
- and theophylline, which is an oral medication of the methylxanthine class that dilates the airways and may decrease inflammation.

Subcutaneous allergen immunotherapy, commonly referred to as allergy shots, may be a viable treatment for some with persistent asthma when the symptoms are induced by exposure to a specific agent, such as house dust mites, pollen or animal dander.

Quick-relief medications, which are recommended for acute asthmatic symptoms and exacerbations, include inhaled short-acting beta-agonist bronchodilators (SABA), such as albuterol, levalbuterol, and pirbuterol, which relax the smooth muscle of the airways. SABAs are used as needed, and increased need for this treatment, or use of more than



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Applicants with high cholesterol... may qualify for our best underwriting class whether treated by medication or not. Standard scores cannot exceed 300; standard plus, 280; preferred, 250 and preferred plus, 220.

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Using AppAssist to save time and money on cases of less than \$250K... makes sense in today's economy when your customer can't afford more. Just complete the RLI online, ask the applicant to authorize the app by voice signature and we'll take it from there.

two days per week could reflect inadequate asthma control. SABAs are also helpful in those with exercise induced asthma, where use before the symptom inciting activity may prevent its occurrence.

Other medications that can be used for quick-relief include inhaled anticholinergics, such as ipratropium, and oral corticosteroids, with the latter only likely to be prescribed if inhaled medications are inadequate.

Asthma Related Mortality

The Centers for Disease Control and Prevention issued a report on asthma in 2007 that covered the 1980-2004 period, and noted that asthma related mortality increased from 1980 through 1995 and has decreased each year since 2000. For the three year period covering 2001 through 2003 an average of 4210 annual asthma deaths occurred in this country. About half of the deaths occurred in people at least 65 years of age, and more women died from asthma than men. Certain demographic groups have been found to have higher mortality from asthma.

Case Studies

Consider the following three applicants who have a history of asthma:

Applicant One has a history of mild exercise induced asthma, runs three times per week, successfully uses a short acting inhaled medication to prevent any symptoms.

Applicant Two uses a daily inhaled corticosteroid, has symptoms an average of once per month that require the use of a short acting inhaled medication, sees the primary care physician every three months and has not required oral corticosteroids or emergency department visits within the past five years.

Applicant Three has daily asthmatic symptoms that require the use of a short acting inhaled medication several times a day, wakes up short of breath most nights, has missed three doctor appointments in the past three months, has required oral corticosteroids four times in the past year and often forgets to use the daily prescribed inhaled corticosteroid.

Four Components of Asthma Care

1. Assessment and monitoring
2. Education
3. Control of environmental factors and comorbid conditions
4. Stepwise use of medications

The underwriting of asthma takes into account several variables, including severity, overall control, compliance with prescribed medications and medical appointments, the number of exacerbations, and the need for short acting medications and oral corticosteroids. Pulmonary function testing, which is expected to be abnormal during an asthma exacerbation, does not have a major role in the underwriting process and usually will not be requested.

Applicant One has well controlled, mild exercise induced asthma, and can qualify for Preferred Plus.

Applicant Two has well controlled intermittent asthma, is compliant with the prescribed treatment plan, and can qualify for Preferred.

Applicant Three has poorly controlled severe persistent asthma, is noncompliant and will be highly rated.