

Asthma & Children Fact Sheet

Asthma is a chronic inflammation of the airways with reversible episodes of obstruction, caused by an increased reaction of the airways to various stimuli. Asthma breathing problems usually happen in "episodes" or attacks but the inflammation underlying asthma is continuous.

- Nationally, asthma is the most common chronic disorder in childhood, currently affecting an estimated 6.7 million children under 18 years; of which 3.8 million suffered from an asthma attack or episode in 2007.¹
- An asthma episode is a series of events that results in narrowed airways. These include: swelling of the lining, tightening of the muscle and increased secretion of mucus in the airway. The narrowed airway is responsible for the difficulty in breathing with the familiar "wheeze".
- Asthma is characterized by excessive sensitivity of the lungs to various stimuli. Triggers range from viral infections to allergies to irritating gases and particles in the air. Each child reacts differently to the factors that may trigger asthma, including:
 - respiratory infections, colds
 - allergic reactions to allergens such as pollen, mold, animal dander, feathers, dust, food and cockroaches
 - exposure to cold air or sudden temperature change
 - cigarette smoke
 - excitement/stress
 - exercise
- Secondhand smoke can cause serious harm to children. An estimated 400,000 to one million asthmatic children in the United States have their condition worsened by exposure to secondhand smoke.²
- Asthma can be a life-threatening disease if not properly managed. In 2005, 3,884 deaths in the United States were attributed to asthma. However, deaths due to asthma are rare among children. The number of deaths increases with age. In 2005, 138 American children under 15 died from asthma compared to 740 adults over 85.³
- Asthma is the third leading cause of hospitalization among American children under the age of 15. Approximately 32.7 percent of all asthma hospital discharges in 2006 were in those under 15, however only 20.1 percent of the U.S. population was less than 15 years old.⁴
- In 2005, there were approximately 679,000 emergency room visits in the United States due to asthma in those under age 15.⁵

- Current asthma prevalence in children under 18 ranges from 5.7 percent in South Dakota and Idaho to 11.9 percent in Delaware.⁶
- Within the last few years nationwide, mortality and hospitalizations due to asthma have decreased and asthma prevalence has stabilized, possibly indicating a better level of disease management, such as increased use of inhaled steroids.
- Asthma medications help reduce underlying inflammation in the airways and relieve or prevent airway narrowing. Control of inflammation should lead to reduction in airway sensitivity and help prevent airway obstruction.
- Two classes of medications have been used to treat asthma: anti-inflammatory agents and bronchodilators. Anti-inflammatory drugs interrupt the development of bronchial inflammation and have a preventive action. They may also modify or terminate ongoing inflammatory reactions in the airways. These agents include inhaled corticosteroids, cromolyn sodium and other anti-inflammatory compounds. A new class of anti-inflammatory medications known as leukotriene modifiers, which work by blocking the activity of chemicals called leukotrienes that are involved in airway inflammation, have recently come on the market.
- Bronchodilators act principally to dilate the airways by relaxing bronchial smooth muscle. They include beta-adrenergic agonists, methylxanthines, and anticholinergics.
- In July 2003, the Food and Drug Administration approved a new drug for patients with serious asthma. Xolair is the first in a new class of therapies that are bioengineered to target in the United States the antibody behind allergic asthma in the treatment of allergic disease.⁷
- The annual direct health care cost of asthma in the United States is approximately \$14.7 billion; indirect costs (e.g. lost productivity) add another \$5 billion for a total of \$19.7 billion. Prescription drugs represented the largest single direct cost, at \$6.2 billion.⁸
- Asthma is one of the leading causes of school absenteeism in the United States⁹ In 2003, asthma accounted for an estimated 12.8 million lost school days in children with an asthma attack in the previous year.¹⁰
- The American Lung Association funds a wide variety of asthma research. The American Lung Association-Asthma Clinical Research Centers network is a sponsored research program seeking to develop large clinical trials that will provide useful information important to the direct care of people who have asthma. The network is the largest of its kind, with 18 clinical centers and a data coordinating center. This work involves large numbers of subjects, making the focus of the network different from current federally funded and commercial research. Thus, the ACRC is playing a unique and important role in asthma research.

- Currently the ACRC is conducting the Study of Acid Reflux and Childhood Asthma which will determine if poorly controlled asthma improves when acid reflux is treated with a certain class of drug, proton pump inhibitors. Acid reflux is frequent in people with poorly controlled asthma and can lead to asthma attacks. To find out if you qualify for participation, visit the ACRC section on the American Lung Association Web site, www.lungusa.org.

For more information on asthma, please review the Asthma Morbidity and Mortality Trend Report in the Data and Statistics section of the American Lung Association Web site at www.lungusa.org, call the ALA at 1-800-LUNG-USA (1-800-586-4872). You may also find information on the Tennessee Department of Health Asthma Management Web site at <http://health.state.tn.us/MCH/asthma.htm>.

Sources:

- 1 Centers for Disease Control and Prevention: National Center for Health Statistics, National Health Interview Survey Raw Data, 2007. Analysis by the American Lung Association Research and Program Services Division using SPSS and SUDAAN software.
- 2 California Environmental Protection Agency: Respiratory Health Effect of Passive Smoking, June 2005.
- 3 Centers for Disease Control and Prevention. National Center for Health Statistics. Final Vital Statistics Report. Deaths: Final Data for 2005. April 24, 2008. Vol 56 No 10.
- 4 Centers for Disease Control and Prevention: National Center for Health Statistics, National Hospital Discharge Survey, 2006. Unpublished data provided upon special request to the NCHS.
- 5 Centers for Disease Control and Prevention: National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2005. Unpublished data provided upon special request to the NCHS.
- 6 Centers for Disease Control and Prevention: National Center for Health Statistics, National Survey of Children's Health through State and Local Area Integrated Telephone Survey, 2003. Analysis by the American Lung Association Research And Program Services Division using SPSS and SUDAAN software.
- 7 Lanier BQ, Corren J, Lumry W, Liu J, Fowler-Taylor A, Gupta N. Omalizumab Is Effective In the Long Term Control of Severe Allergic Asthma. *Annals of Allergy, Asthma, and Immunology*, August 2003; Vol 91: pp 154-159.
- 8 National Heart, Lung and Blood Institute Chartbook, U.S. Department of Health and Human Services, National Institute of Health, 2007.
- 9 Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion. Healthy Youth! Health Topics: Asthma. December 7, 2007. Available at <http://www.cdc.gov/healthyyouth/asthma/index.htm>. Accessed on December 20, 2007.
- 10 Centers for Disease Control and Prevention. National Center for Health Statistics. Asthma Prevalence, Health Care Use and Mortality: United States, 2003-05. January 2007. Accessed on October 5, 2007.

