



## **Allergic Diseases and Cognitive Impairment**

Sneezing, wheezing, watery eyes and runny nose aren't the only symptoms of allergic diseases. Many people with allergic rhinitis also report feeling "slower" and drowsy. When their allergies are acting up, they have trouble concentrating and remembering.

For instance, allergic rhinitis can be associated with:

- Decreased ability to concentrate and function
- Activity limitation
- Decreased decision-making capacity
- Impaired hand-eye coordination
- Problems remembering things
- Irritability
- Sleep disorders
- Fatigue
- Missed days at work or school
- More motor vehicle accidents
- More school or work injuries

Many parents of children with allergic rhinitis observe increased bad moods and irritability in their child's behavior during the allergy season. Since children cannot always express their uncomfortable or painful symptoms verbally, they may express their discomfort by acting up at school and at home. In addition, some kids feel that having an allergic disease is a stigma that separates them from other kids.

It is important that the irritability or other symptoms caused by ear, nose or throat trouble are not mistaken for attention deficit disorder. With proper treatment, symptoms can be kept under control and disruptions in learning and behavior can be avoided.

### **Causes**

Experts believe the top two culprits contributing to cognitive impairment of people with allergic rhinitis are sleep interruptions and over the counter (OTC) medications.

Secondary factors, such as blockage of the Eustachian tube (ear canal), also can cause hearing problems that have a negative impact on learning and comprehension. Constant nose blowing and coughing can interrupt concentration and the learning process, and allergy-related absences can cause people to miss school or work and subsequently fall behind.

### **Sleep Disruption**

Chronic nasal congestion can cause difficulty in breathing, especially at night. Waking is a hard-wired reflex to make you start breathing again. If you have bad allergic rhinitis, you may waken a dozen times a night. Falling back asleep can be difficult, cutting your total number of

sleep hours short.

The average person needs about eight hours of sleep per night to function normally the next day. Losing just a few hours of sleep can lead to a significant decrease in your ability to function. Prolonged loss of sleep can cause difficulty in concentration, inability to remember things, and can contribute to automotive accidents. Night after night of interrupted sleep can cause serious decreases in learning ability and performance in school or on the job.

### **Over-the-Counter Medications**

Most allergy therapies don't take into account the effects of allergic rhinitis on mental functioning - they treat the more obvious physical symptoms. Some allergy therapies may even cause some cognitive or mental impairment.

In a recent poll in which allergy sufferers were asked how they treat their symptoms, about 50 percent responded that they use over-the-counter (OTC) medications. The most commonly used OTC medications for allergy symptoms are decongestants and antihistamines - both of which can cause sleep disturbances.

#### **Decongestants**

Decongestants constrict small blood vessels in the nose. This opens the nasal passageways and lets you breathe easier. Some decongestants are available over-the-counter, while higher strength formulas are available with a prescription. In some people, oral decongestants can cause problems with getting to sleep, appetite loss and irritability, which can contribute to allergy problems. If you have any of these symptoms, discuss them with your doctor.

#### **Antihistamines**

Antihistamines block the effects of histamine, a chemical produced by the body in response to allergens. Histamine is responsible for the symptoms of allergic rhinitis, including an itchy runny nose, sneezing and itchy eyes. OTC antihistamines are an inexpensive choice when it comes to treating the symptoms of an allergy - but all OTC antihistamines available in the United States also can cause drowsiness. Regularly taking OTC antihistamines can lead to a feeling of constant sluggishness, affecting learning, memory and performance.

Non-sedating antihistamines, such as Allegra<sup>®</sup> (fexofenadine) and Claritin<sup>®</sup> (loratadine), are available with a prescription. These antihistamines are designed to minimize drowsiness while still blocking the effects of histamine.

### **Solutions**

With all the allergic diseases, the best way to control your symptoms is to avoid coming into contact with your triggers - the substances that cause you to have an allergic reaction. This is often easier said than done. Sometimes it is impossible to avoid the substances that cause symptoms, especially when you are not in control of your environment.

If your allergens can't be avoided, your doctor can help you to create an allergy treatment plan. People who are allergic to indoor things like dust mites or animal dander may need medication on a daily basis, while people who have seasonal symptoms may only need treatment at certain times during the year. An allergist-immunologist can help you determine to which substances you are allergic.

Several types of non-sedating medications are available to help control allergies. One nonsedating nasal spray, Nasalcrom<sup>®</sup> (cromolyn), is available without a prescription. In addition to the newer antihistamines discussed above, your doctor may also prescribe nasal steroid sprays to treat nasal inflammation. Nasal steroid sprays are highly effective in treating allergy symptoms. The most common side effect associated with nasal sprays is headache.

If medications are not effective or cause unwanted side effects, your doctor may suggest immunotherapy, or "allergy shots." Immunotherapy is used to treat allergy to pollen, ragweed, dust mites, animal dander and other allergens. This process gradually desensitizes you to these substances by changing the way that your body's immune system responds to them. For example, if you are allergic to ragweed, immunotherapy treatments would involve injecting a tiny amount of ragweed pollen extract under your skin every week. Immunotherapy treatments usually last three to five years or longer. Once your body is able to tolerate the substance without producing the symptoms of an allergy, immunotherapy can be stopped, and the need for oral medications should be gone or greatly reduced.

### **Remember**

If allergies are affecting your ability to concentrate or function, several treatment options may be beneficial. Getting allergy symptoms under control can help you sleep at night and function during the day.

If you suspect that you or a family member may have an allergic disorder, make an appointment with your doctor for proper diagnosis. Treating allergies sooner rather than later can help prevent disruptions in learning and behavior.

© Copyright 2000 Medem, Inc. and American College of Allergy, Asthma and Immunology

## **The American Lung Association Website provides these facts:**

Air pollution affects everyone. You can't hide from it, even inside your own home. Just consider these facts...

- The Environmental Protection Agency ranks poor indoor air quality among the top five environmental risks to public health. Interestingly, five out of 10 Americans are not aware of this fact. (Source: American Lung Association and 3M survey, 2002)
- Levels of air pollution inside the home can be two to five times higher (and occasionally 100 times higher) than outdoor levels. (Source: Environmental Protection Agency, 2002)
- Over half of the United States population lives in areas which have unhealthy levels of either ozone or particle pollution. (Source: American Lung Association's State of the Air 2004 Report)
- It's estimated that 81 million Americans live in areas with unhealthy short-term levels of particle pollution and 66 million live in areas with chronically unhealthy levels of particle pollution. (Source: American Lung Association's State of the Air 2004 Report)
- Air pollution found in large and midsize U.S. cities increases the risk of premature death from lung cancer and heart disease. (Source: Journal of the American Medical Association, 2002)
- Air pollution contributes to lung disease, which claims close to 341,500 lives in America every year and is the third-leading cause of death in the United States. (Source: American Lung Association, 2002)
- It is estimated that 10.5 million Americans had an asthma attack in 1999. More than a third of them (at least 3.5 million) were children under the age of 18. (Source: American Lung Association, Trends in Asthma Morbidity and Mortality, 2002)
- Asthma, which can be triggered by either indoor or outdoor air pollution, annually accounts for an estimated three million lost workdays for adults and 10.1 million lost school days in children. Asthma costs our nation \$12.7 billion in health care costs annually. (Source: American Lung Association, Trends in Asthma Morbidity and Mortality, 2002)
- Approximately 160 million Americans are breathing unhealthy air – children and seniors are the age groups most at risk:
  - 29 million of these Americans are under the age of 14.
  - 15 million are over the age of 65.(Source: American Lung Association's State of the Air 2004 Report)

For more information and ways to reduce the dangers of indoor and outdoor air quality, visit [www.lungusa.org](http://www.lungusa.org) or [www.epa.gov](http://www.epa.gov) for more information.