

Frightened of Food Living with Food Allergies

Imagine what life would be like if you had to constantly check out the ingredients in your favorite foods to make sure your life wasn't in danger after eating even a tiny bit. For some people with severe food allergies, that's become their way of life.

Food allergies cause about 30,000 severe allergic reactions and 150 deaths every year in the United States. They affect nearly 4% of adults and about 7% of children under 4 years old. Several studies show that food allergies are becoming more common.

Food allergies occur if your **immune system** has an abnormal reaction to food. Normally, your immune system protects you from germs and disease by fighting off the harmful organisms that can make you sick.

When your immune system makes a mistake and attacks a harmless substance you eat, it can cause serious, even life-threatening, allergic symptoms.

Symptoms of food allergy can include coughing; tingling in the mouth; skin reactions like hives and itching; and nausea, vomiting, stomach pain or diarrhea. Food allergies can also cause a sudden and severe allergic reaction called anaphylaxis.



Definitions

Immune System

The system that protects your body from invading viruses, bacteria and other microscopic threats.

Anaphylaxis brings life-threatening symptoms, which can include difficulty breathing, a drop in blood pressure and narrowing of the airways and wheezing (a whistling sound when you breathe).

Foods that can cause allergies include fish and shellfish such as shrimp, crayfish, lobster

genetic traits that combine to cause different levels of allergies in some people," Metcalfe says.

People with asthma are particularly at risk for anaphylactic reactions. "If a child has asthma," Metcalfe says, "it's very important for parents to know that their child is at greater risk, because most deaths in children from anaphylaxis to a food occur in children who have asthma."

Some children are actually born allergic to certain foods, whereas others develop food allergies over time. Children are more likely than adults to outgrow allergies to milk, eggs or soy as their digestive tracts mature and their immune systems develop.

They don't, however, outgrow allergies to peanuts. But scientists are testing whether individuals might be gradually desensitized to peanuts so that eventually they would not suffer an allergic reaction to them.

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and crab; eggs, milk, peanuts, and tree nuts such as walnuts. Peanut and tree nut allergies are the leading causes of anaphylaxis.

Research shows that you're more likely to develop food allergies if several members of your family have allergies. That includes any type of allergy, including hay fever. If you have 2 allergic parents, you're more likely to develop food allergy than someone with 1 allergic parent, according to Dr. Dean D. Metcalfe, chief of NIH's Laboratory of Allergic Diseases in the National Institute of Allergy and Infectious Diseases (NIAID).

"There are many different genes or

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Wise Choices Dangerous Food Allergy Symptoms

A sudden and severe allergic reaction is called anaphylaxis. Watch out for these life-threatening symptoms and call for help if you see or feel them:

- Difficulty breathing
- Drop in blood pressure
- Rapid heartbeat
- Swollen tongue, throat and other parts of the body
- Narrowing of the airways and wheezing (a whistling sound when you breathe)
- Fainting

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If you have an allergic reaction to a certain food, you may also be allergic to similar foods. This is called cross-reactivity. For example, if you're allergic to shrimp, allergy testing may show that you're also allergic to other seafood.

The only cure for a food allergy is to avoid that particular food. So if you have any unpleasant reaction to food, see your doctor to find out what's causing the problem. Although many people have bad reactions to certain foods, it may not always be allergy.

Skin tests are the most common tests for allergies like hay fever, but people with food allergies can have serious reactions to skin tests. According to Dr. Daniel Rotrosen, director of NIAID's Division of Allergy, Immunology and Transplantation, blood tests are a safer method. They're not always accurate, though, so a positive blood test doesn't necessarily mean you have an allergy to a particular food.

To help your physician, try to keep a daily diet diary that lists the foods you ate and when you ate them, along with the symptoms you had and when they surfaced. Metcalfe cautions not to overly focus on such food histories, as they can contribute to food phobias and misunderstandings. It's easy to mistakenly associate things that happen to you with something you've eaten hours before. Still, diet diaries can help your doctor decide what allergy tests to give you.

If you have a food allergy, it's best to prepare for an emergency in case you eat the wrong food by accident.

"When you have an allergic reaction to food," Rotrosen says, "you may have a good idea of how severe the reaction is, but not always, as it is very difficult to predict."

Since allergic reactions to food can be hazardous, Rotrosen recommends that people be very cautious. Call 911 if you or someone you know seems to be having an allergic reaction to food.



Web Links

For links to more information about food allergies, see this story online:

- http://newsinhealth.nih.gov/2008/May/docs/O1features_01.htm

"Physicians usually prescribe an auto-injector device that has epinephrine (adrenaline) for allergy sufferers," Rotrosen says. "Unfortunately, too few of these are prescribed, some people do not always carry it with them and some also fail to renew their prescriptions." Ask your doctor if you need to carry one and learn how to give that shot to yourself if needed.

NIH-supported researchers are working to understand why the immune system sometimes launches attacks against seemingly harmless foods. Researchers are also exploring methods that can lead to quick and accurate diagnosis and treatment of food allergies. Many potential treatments are also under study.

One established treatment for some allergies is called immunotherapy. It involves giving shots under the skin with tiny quantities of extract from the thing you're allergic to. Giving these injections over a long period can build up your tolerance. For food allergies, however, this procedure can be dangerous. NIH-funded scientists are currently testing various ways of making the approach safer, by modifying the substances themselves or by changing the way they're introduced into the body.

NIH-funded researchers are also exploring methods to help the immune system dampen allergic reactions and lower your chance of developing food allergies. Researchers hope that a few of the approaches being tested will work and become licensed therapies, giving people with food allergies options other than avoiding the foods they may love. ■

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Of Air and Asthma

Air Pollution's Effects

A growing number of Americans are sniffing and suffering with allergies and asthma. Several studies have shown that air pollution and indoor **allergens** make asthma symptoms worse and can bring on an asthma attack. If you're 1 of the 23 million Americans who suffer from asthma, you might get some relief by taking steps to reduce indoor allergen levels and modifying your lifestyle to avoid the ill effects of air pollution.

Asthma is caused by swelling and inflammation of your airways. When the airways narrow, less air gets through to your lungs, causing wheezing, coughing, chest tightness and trouble breathing.

Children with a family history of allergies and asthma are more likely to have asthma. Exposure to triggers in the environment, including allergens, pollutants and viral infections, also play a role. "The rapid increase in asthma cases from the late 1970s cannot be attributed to genetics alone," says Dr. Peter Gergen, medical officer at NIH's National Institute of Allergy and Infectious Diseases. "Changes in the environment, home surroundings and exposure to infections have also contributed to the prevalence of asthma."



Definitions

Allergen

A substance that your immune system mistakenly attacks to cause an allergy.

Understanding what makes asthma worse can help asthma sufferers keep their disease in check. NIH research has shown that children who live in inner cities are exposed to higher levels of allergens from dust mites, dogs, cats, rodents, cockroaches and mold in their homes. A recent study found that people with

asthma and allergies may be able to alleviate asthma symptoms by reducing allergen levels in their homes.

"Some simple measures—washing bedding in hot water, vacuuming and steam-cleaning, and using high-efficiency particulate air purifiers (HEPA) and mattress and pillow covers that do not allow allergens to pass through—can decrease the levels of household allergens," Gergen says.

But what if the air outside your home is filled with asthma triggers? A new 2-year study supported by NIH and the Environmental Protection Agency (EPA) showed that even modestly increased levels of air pollution cause more frequent asthma symptoms and lower lung function in children who have persistent asthma and live in inner city areas of the United States. Even



air pollution levels within EPA's safety standards made asthma worse in vulnerable children.

High levels of nitrogen dioxide, a component of motor vehicle emissions, had the greatest effect in the study, leading to many asthma-related school absences. Past research has also shown that ozone and particle pollution can affect asthma. Ozone, which is found in smog, is worse on hot days, especially in the afternoons and early evenings. Particle pollution, found in smoke and dust, is bad near busy roads and factories or when there's smoke in the air.

Researchers are studying different approaches to prevent and treat asthma. Asthma can't be cured, but most people with asthma can control it and live active lives. Talk to your doctor about developing a plan to manage your asthma symptoms. ■



Wise Choices Asthma and the Outdoors

If you have asthma:

- **Avoid outdoor activities in the afternoons on warmer days**, when the risk of air pollution is highest.

- **Avoid strenuous outdoor activities if the air is polluted.** Check your region's air quality index, which is often reported in the local news. Orange and red mean it's a bad air day and that children and adults with respiratory diseases should avoid the outdoors. Purple and maroon mean air pollution is extreme and everyone should try to stay inside.



Web Links

For links to more information about preventing asthma symptoms, see this story online:

- http://newsinhealth.nih.gov/2008/May/docs/01features_02.htm

Health Capsules

Keeping Off Lost Weight

Losing weight can be a struggle. But keeping it off can feel like a losing battle. Now a new study suggests that monthly personal counseling—usually less than 15 minutes by phone—can help. A web-based program also helped some people keep lost pounds at bay.

Excess weight is the nation's second-leading cause of preventable death. Extra pounds can lead to diabetes, high cholesterol and high blood pressure—all risk factors for **cardiovascular** disease. Weight loss can reduce these risks, but keeping that lost weight off is rarely easy.

NIH-funded researchers compared the success rates of 3 relatively low-cost approaches to maintaining

weight loss. They studied over 1,000 adults who had lost an average of about 19 pounds. Each person was randomly assigned to take 1 of 3 approaches to maintaining their weight loss.

One group had monthly personal counseling on diet and physical activity. People in the second group used an interactive web-based program that provided similar information. Those in the third group—the “self-directed maintenance” group—

were mostly left on their own.

By the end of the 2.5-year study, people who had personal counseling still had an average weight loss of 9.2 pounds. The web group kept off an average of 7.3 pounds, and the self-directed group 6.4 pounds.

“Most people in the study regained at least some of the weight they initially lost,” says lead scientist Dr. Laura Svetkey of Duke University. “However, both the personal counseling and the web-based program modestly alleviated weight re-gain for up to 2 years. Personal counseling ultimately proved to be the most beneficial by the end of the 2.5-year study.”

Even minor weight loss can have significant health benefits, the researchers say. ■



Web Links

For links to more information from NIH about the topics in these stories, visit this Health Capsules page online:

- <http://newsinhealth.nih.gov/2008/May/docs/02capsules.htm>



Definitions

Cardiovascular

The system of heart and vessels that circulates blood throughout the body.

Older Corneas Can Make Good Transplants

Each year, thousands of people have their eyesight saved by cornea transplants. To make sure that these transplanted corneas are healthy, eye banks usually require that donated corneas come from people in good health and no older than 65. But now a new study suggests that corneas from people as old as 75 can transplant as well as younger ones.

The cornea is a clear dome-shaped surface that covers and protects the front of the eye. When it becomes damaged or cloudy due to sickness or injury, it may need to be replaced with a donated cornea to help restore vision. Each year more than 33,000 cornea transplant surgeries are performed nationwide. Eye banks have generally had enough donated

corneas to meet demand. But some health officials worry about a shortage of corneas in the future.

To see if older corneas might also make good transplants, NIH-funded scientists looked at more than 1,000 people who had cornea disease and needed transplants. Some of the donated corneas came from people who were between 12 and 65 years old. Others came from donors who were ages 66 to 75.

Five years after surgery, the researchers found that the success rates were the same—86%—for corneas from younger and older donors. If eye banks were to accept these older donated corneas, the donor pool could grow by as much as 20-35%, the scientists estimate. ■



Featured Web Site Gear Up!

www.healthyvision2010.nei.nih.gov/hvm

As part of Healthy Vision Month in May, NIH is encouraging kids to Gear Up and use protective eyewear. Eye injuries are the leading cause of blindness for children in the U.S. Protective eyewear can prevent 9 of 10 sports-related eye injuries. Learn practical tips for keeping eyes safe while having fun this summer.

Healthy People 2010 Vision **Healthy Vision Month 2008** **Protective Eyewear** **Why Healthy Vision Month?**

Gear Up!
There's more to lose than the game. Use protective eyewear.

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Children's Eye



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