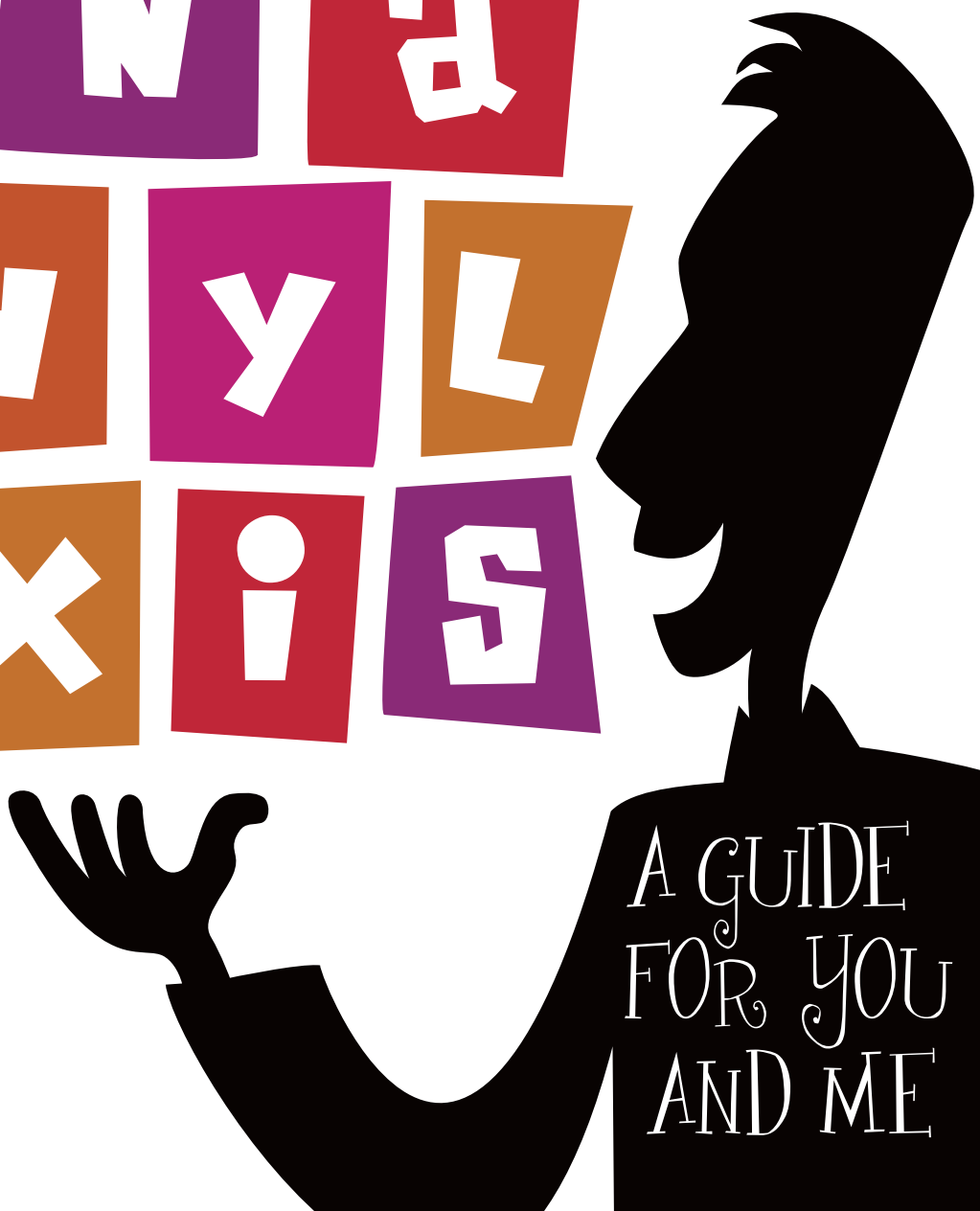
Allergy & Asthma Network
Mothers of Asthmatics

Allergy & Asthma today

2008 Special Edition

anaphylaxis



A GUIDE FOR YOU AND ME

helping others breathe easier

My older sister is allergic to bee stings. The bees seemed to be particularly attracted to Linda's face when we were growing up, so our mother stitched bridal veil material to a broad-brimmed beach hat and made Linda wear it every time she went outside. If Linda got stung by a bee, she'd swell up horribly. My mom would take out the stinger, give Linda a big dose of Benadryl® and take her to the hospital.

That was long before we had auto-injectable epinephrine and a full understanding of anaphylaxis – a life-threatening allergic reaction that can be set off by insect stings, latex, certain foods or medications, sometimes in combination with exercise.

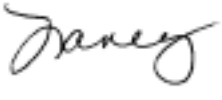
Today we know that anyone can develop a severe allergic reaction (anaphylaxis) at any time and that people with a history of allergies, asthma or eczema are at greater risk. People with asthma are especially vulnerable when anaphylaxis targets the respiratory system.

Even though peanut, seafood, latex and other life-threatening allergies are on the rise around the world, many patients and caregivers remain unaware of the threat and the necessary treatment. That's why we produced this magazine – to share what we've learned in more than 20 years of working with patients, families and the medical community.

At Allergy & Asthma Network Mothers of Asthmatics (AANMA), we use education, outreach and advocacy campaigns to help families and caregivers learn to prevent life-threatening allergy and asthma symptoms. This magazine is just one example of the patient-friendly tools we create.

In recent years, we have worked with federal and state lawmakers to guarantee students the right to carry and use their lifesaving asthma and anaphylaxis medications at school. Thanks to our award-winning Breathe: It's the Law campaign, 40 states now have laws protecting these rights for students with anaphylaxis, and volunteers are working to change laws in the remaining 10 states.

Education, outreach and advocacy – they're the core of our work here at AANMA. But we can't do it without you. If you're not already an AANMA member, please send in the enclosed membership card today. Together, we can help America breathe easier.



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Allergy & Asthma Network Mothers of Asthmatics (AANMA) is a 501(c)(3) national nonprofit organization that provides award-winning patient education, advocacy and community outreach services. To support our efforts or to become a member of AANMA, please call 800.878.4403 or e-mail *info@aanma.org* today. Visit *www.breatherville.org* for more information.

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ANAPHYLAXIS:

Allergies in Overdrive

Allergies come in different sizes and shapes. There's the runny-nose-bleary-eye version or the tickly-throat-itchy-eye kind – even the bumpy-itchy-red-skin variety. And then there's anaphylaxis (ann'-a-phil-ax'-sis).

Anaphylaxis is a life-threatening allergic reaction that affects two or more parts of the body at once, including your skin, mouth, stomach, lungs or heart. Often it occurs as a series of reactions – skin-related symptoms such as hives and swelling may appear first, followed by internal symptoms. But anaphylaxis can also occur without any skin symptoms at all.

Anaphylaxis is most often caused by exposure to

- **Foods**, especially peanuts, tree nuts, fish, shellfish, milk and eggs
- **Stinging insects** such as bees, wasps, hornets, yellow jackets and fire ants
- **Latex**, which can be found in household items from elastic waistbands to kitchen gloves
- **Medications** such as antibiotics, seizure medications, muscle relaxants and aspirin
- **Exercise**, especially associated with food allergy or non-steroidal anti-inflammatory drugs (NSAIDs)

Anyone can develop a severe allergic reaction at any time. However, people with a history of allergies, asthma or eczema are at greater risk for anaphylaxis than other people. And someone who has had anaphylactic symptoms at least once is more likely to have another anaphylactic reaction.

Recognizing anaphylaxis can be tricky because no two episodes are alike and some symptoms of anaphylaxis mimic symptoms of other illnesses. In addition, anaphylaxis often hits people who are not expecting it, either because it's the first time they've ever had an allergic reaction or they don't know they've been exposed to allergens.

The key to preventing serious problems from anaphylaxis – including death – is using epinephrine as soon as possible. In fact, virtually all deaths associated with anaphylaxis occur because epinephrine is not administered in time.

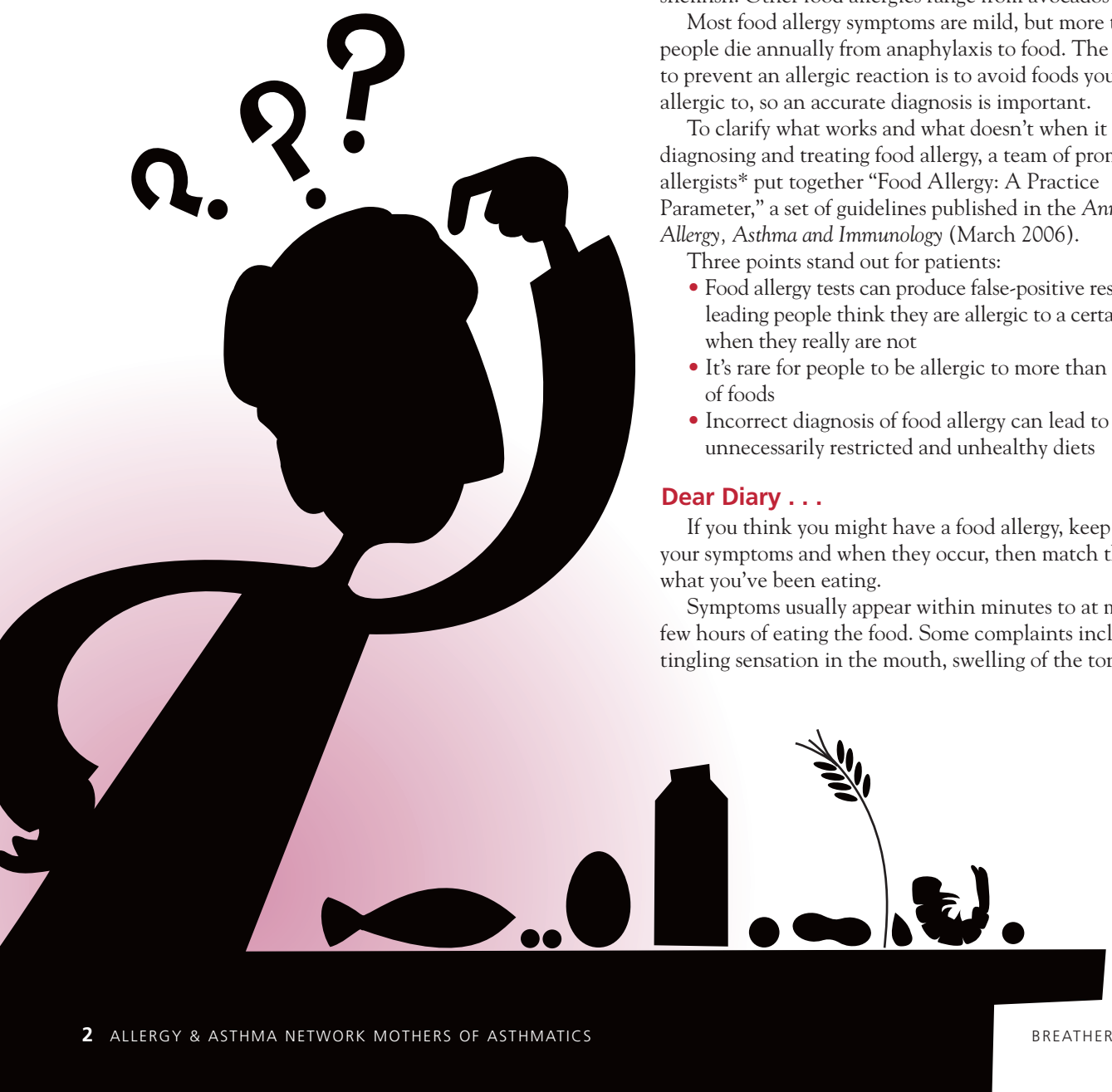
People at risk for anaphylaxis should carry auto-injectable epinephrine with them at all times – carry two, in case symptoms recur before you can get medical help. Keep them in your home, office, school or anywhere else you spend a lot of time. Parents of young children with life-threatening allergies should make sure teachers and caregivers have epinephrine auto-injectors on hand and know how to use them. Teach children about their symptoms, medications and when to ask for help.

With education and preparation, most deaths from anaphylaxis can be prevented. This magazine will get you started with an overview of the causes of anaphylaxis, plus an explanation of how auto-injectable epinephrine works to save lives. ■

FIND IT HERE

FOOD ALLERGY

Diagnosis



Approximately 12 million Americans have a food allergy, including more than 2 million school-age children and one out of every 17 children under the age of 3.

Eight foods account for 90 percent of all reactions in the U.S.: milk, eggs, peanuts, tree nuts, wheat, soy, fish and shellfish. Other food allergies range from avocados to yams.

Most food allergy symptoms are mild, but more than 150 people die annually from anaphylaxis to food. The only way to prevent an allergic reaction is to avoid foods you are allergic to, so an accurate diagnosis is important.

To clarify what works and what doesn't when it comes to diagnosing and treating food allergy, a team of prominent allergists* put together "Food Allergy: A Practice Parameter," a set of guidelines published in the *Annals of Allergy, Asthma and Immunology* (March 2006).

Three points stand out for patients:

- Food allergy tests can produce false-positive results, leading people think they are allergic to a certain food when they really are not
- It's rare for people to be allergic to more than a couple of foods
- Incorrect diagnosis of food allergy can lead to unnecessarily restricted and unhealthy diets

Dear Diary . . .

If you think you might have a food allergy, keep track of your symptoms and when they occur, then match that with what you've been eating.

Symptoms usually appear within minutes to at most a few hours of eating the food. Some complaints include a tingling sensation in the mouth, swelling of the tongue and

the throat, or difficulty breathing; skin problems such as hives or eczema; stomach discomfort such as abdominal cramps, diarrhea, or vomiting; or a drop in blood pressure, dizziness or loss of consciousness.

Keep a written diary, with the following information:

- What kind of symptoms did you notice?
- How long after consuming a food or liquid did you notice symptoms? Was it right away or later? How much later?
- How long did the symptoms last and how severe were they?
- Did you do anything to help ease symptoms (such as over-the-counter medications)?
- What exactly did you eat and how much?
- Where and how was the food prepared? Was it at home? A restaurant?
- Were you doing anything else during or just after your meal, like exercise?

Show your diary to your physician. Quite often, you and your physician will be able to spot an allergy right away. Other times, your doctor will perform tests to determine if your hunches are right.

"You don't want to avoid food that you are not allergic to," says Jay M. Portnoy, MD, associate editor of "Food Allergy: A Practice Parameter," "but you do want to avoid foods that you are allergic to. Allergists can be helpful in determining this because they have special training and experience in interpreting the test results."

Testing Troubles

The most reliable tests for food allergy – and the ones performed most often by allergists – are skin prick tests. A diluted extract of the food is placed on the patient's skin, then the skin is scratched with a needle. If the patient develops a raised skin reaction (called a wheal) at the place of the needle prick, that may be a sign of food allergy. If there is no reaction, you are unlikely to be allergic to the food.

According to the Practice Parameter, these tests are quite accurate for foods with stable proteins, including peanut, milk, egg, tree nuts, fish and shellfish. The tests are less reliable for fruits and vegetables, which have proteins that break down quickly.

It is important to note that a positive skin response does not necessarily mean that the patient would have an allergic reaction from eating the food. Some do, some don't.

"Just because you have a positive test to a food doesn't mean you are allergic to it," explains Dr. Portnoy. "Personally, I'm still seeing a lot of patients who have been told by a physician not to eat foods because of positive test results, when in fact they have never had a problem with the food."

An across-the-board set of tests for a wide range of foods could produce numerous positive results – most of which might be incorrect. Patients who think they are allergic to numerous foods may be forced to eat very restrictive diets, which can be unhealthy as well as difficult to follow.

That's why your symptom diary and a detailed patient history are so important.

In addition to skin-prick tests, blood tests that look for IgE antibodies (particles in the blood that indicate allergy) may be useful for identifying food allergies, although they can also produce false-positive results. These tests may be referred to as RAST (radio-allergosorbent), CAP-RAST or CAP-FEIA.

Be Prepared

If you are diagnosed with a food allergy, talk with your physician about how to avoid reactions. Most often, you will need to completely avoid eating the food you are allergic to. If you have a life-threatening food allergy, your physician will prescribe auto-injectable epinephrine to use in anaphylactic emergency situations. Be sure you know how to use it and carry it with you always. You also should consider wearing a medical alert bracelet that lists foods you are allergic to and has instructions to give you epinephrine if you are unable to do so yourself.

Many children will lose their food allergies over time, particularly if they are allergic to milk, egg or wheat. It is less common to outgrow an allergy to peanuts, tree nuts or shellfish, although it is still possible. So it's important to maintain a close relationship with your allergist, who can help you to determine whether the food allergy is still a problem. ■ *L.R.*

** "Food Allergy: A Practice Parameter" is a clinical review of food allergy research, put together by the Joint Task Force of Practice Parameters, representing the American Academy of Allergy, Asthma & Immunology, the American College of Allergy, Asthma & Immunology and the Joint Council of Allergy, Asthma & Immunology.*

Antibody Alternatives

Some nutritionists and food allergy researchers suspect that, while IgE antibodies produce classic, immediate symptoms, other antibodies such as IgM and IgG may be responsible for delayed allergy-like symptoms. The Practice Parameter allergists point out, however, that IgG antibodies to foods are found in allergic and nonallergic individuals and often represent a normal immune response to foods that one eats. Therefore, tests that look for these antibodies are not recommended for diagnosing food allergy.

Take the STING Out of Outdoor Fun

Three ways to protect yourself

Education: Recognize the difference between a normal local reaction to a sting and a more serious systemic (whole body) reaction; know when to seek immediate medical help.

Prevention: Learn to identify stinging insects and their nests; understand their feeding patterns and self-defense habits.

Protection: Consult an allergist if you think you are allergic to insect stings. Ask about auto-injectable epinephrine for emergency treatment and immunotherapy (allergy shots) for long-term prevention.

"We hope that, when the insects take over the world, they will remember with gratitude how we took them along on all our picnics…."

Bill Vaughan, American journalist

If you love being outdoors, no doubt you're all too familiar with bugs. Creeping, crawling or buzzing insects of every shape and size populate our gardens, fields and woods.

Most are harmless and good for the environment. Some, like mosquitoes, inflict painful or irritating bites and spread diseases. A few produce venom that can trigger life-threatening allergic reactions (anaphylaxis).

Insect sting anaphylaxis can happen to anyone – not just people with other allergies – and requires immediate medical attention.

The insects whose stings can cause anaphylaxis belong to the *Hymenoptera* order. There are more than 100,000 species, but the ones that cause the most problems in the United States are bees, wasps, yellow jackets, hornets and fire ants.

The best way to avoid being stung is to learn to recognize these insects, understand their eating and protective habits, and stay away from their nests.

Just like your grandma used to say, "They won't bother you if you don't bother them."

Bees

Honey bees are fat, dark brown, slightly hairy insects often found hovering around bright flowers or feasting on clover. Found most often in warm climates, these are the bees of folklore that build hives and produce honey. They can only sting once, leaving their stinger behind in the skin, then dying. Their cousins, the bumble bees, look very similar but will sting more than once if threatened.

Bees build their hives in protected areas, such as building cavities, holes in the ground or compost piles. Honey bees will use the same nest year after year, building elaborate honeycombs and living on the stored honey over the winter; bumble bees start new nests each spring.

Africanized honey bees – sometimes called killer bees – are a subspecies of honey bees with a reputation of being extremely aggressive. Like the honey bee, they can sting only once, but their hives are so large that they attack in swarms if you get too close. Always get professional help to remove a bee hive.


Honey Bee: Jerry A. Payne, USDA ARS; www.insectimages.org

Hornets

Hornets are slightly larger than yellow jackets – more the size of a bumble bee but with a defined, narrow waist – and most are black with white or yellow stripes.

Though feared because of their size, hornets do not usually sting people unless they are provoked. They are natural predators, killing other insects and even caterpillars to feed the larvae in their nest. Adults eat nectar and fruit pulp.

In the spring, the queen will build a small nest the size of a golf ball high in a tree or under the eaves of a building. Workers add layers throughout the summer as more insects are hatched; the nest can become as large as a football, always with the opening facing down.


Yellow Hornet: Hollister-Stier Laboratories LLC

Yellow Jackets

Also called ground bees, yellow jackets are actually part of the wasp family. These black and yellow insects swarm around picnic areas and trash cans, persistent in their search for food and aggressive if you get in their way.

From spring to midsummer, they forage for protein (insects or other meat) to feed the larvae in the nest, as well as sweets for themselves and the other adults. By late summer, their numbers peak and they go on a frenzied search for sweets wherever they can find them – especially in your picnic drinks!

Yellow jackets build their nests underground or in fallen logs; others nest in the walls of houses. They can sting numerous times, especially if provoked.


Eastern Yellow Jacket: Jerry A. Payne, USDA ARS; www.insectimages.org

Paper Wasps

Longer and slimmer than bees or hornets, paper wasps drag their long legs behind them as they fly. Their coloring ranges from reddish brown to black, with yellowish rings.

Wasps eat other insects and spiders, but will also forage for food in picnic areas and garbage cans. Their habit of building (and defending!) their nests on and around homes and small buildings makes them common garden pests.

You can recognize a wasp's nest by its papier-maché look and its interconnected web of cells, which are homes for the young wasps. Some nests are small, with only a dozen or so wasps; others house up to 100 insects. They often hang from trees or under eaves, and sometimes look like upside-down umbrellas. Some paper wasps build nests inside cavities such as bird boxes.


Golden Paper Wasp: Susan E. Ellis

Fire Ants

Red (and black) imported fire ants are found throughout southeastern regions of the U.S.; they cannot survive the cold winters of the north. There are many varieties of fire ants that can cause allergic reactions, but the imported ones tend to be more aggressive than the natives and will bite and sting repeatedly.

The easiest way to identify fire ants is to recognize their nests. These are large, dome-shaped mounds of crumbly earth up to 18 inches across and 8-12 inches high. Since the ants come and go through underground tunnels, the mounds do not have visible openings like traditional ant mounds. However, if you step on the nest, the ants will quickly swarm up onto your feet and legs. If you live in fire ant country, be careful walking in grassy areas.

Fire ants can also be identified by their size. Most domestic ants, including stinging red ants (red harvester), are fairly uniform in size, while fire ants vary from 1/16 to 1/4 inch.


Red Imported Fire Ant: Jerry A. Payne, USDA ARS; www.insectimages.org

From itch to anaphylaxis

For most people, insect stings are a short-term annoyance. The danger is that an allergic reaction can happen to anyone, even people with no other allergies and people who have been stung before with no problems. Protect yourself and others around you by learning to recognize the symptoms that call for immediate medical help.

Local reaction: Since most people are not allergic to stings, the most common reaction is swelling, pain and itching centered around the site of the sting. This is your body's response to the irritating enzymes and chemicals in the insect's venom; it is not an allergic reaction. Cold compresses or ice is the best treatment, along with antihistamines or calamine lotion to control itching.

Systemic (whole body) reaction: An allergic reaction will set off symptoms in other parts of the body, away from the sting. This is called a systemic, or whole body, reaction. The most common symptoms are skin-related, such as hives (a raised, itchy rash) or deep swelling.

Anaphylaxis is a life-threatening allergic reaction that spreads quickly through the body, sometimes resulting in a sudden drop in blood pressure and loss of consciousness. Early symptoms include hives, swelling in the mouth and throat, dizziness, difficulty breathing (especially people with asthma), headache, nausea or vomiting.

These symptoms require *immediate* medical attention. If you have auto-injectable epinephrine, use it right away. Insect sting symptoms usually occur quickly, sometimes within 10 minutes. The sooner you receive treatment, the more likely the symptoms are to improve. Because it's impossible to predict whether symptoms will progress from mild to life-threatening, it's safer to immediately administer epinephrine than to wait to see what happens. Always follow up with medical care: Insect sting anaphylaxis is long-lasting and can come back after the epinephrine wears off (after 30 minutes).

Consult an allergist

If you experience an allergic reaction to a sting, chances are strong that your next reaction will be even more serious. That's why it's important to consult an allergist. Be ready to describe where you were and what you were doing when you were stung, and to describe the insect, if possible. The allergist will combine that information with the results of allergy skin or blood tests to determine what kind of insect you are allergic to, then discuss options for protecting yourself in the future.

Immunotherapy: Immunotherapy, or allergy shots, is very effective at long-term prevention of allergic reactions to insect sting. Most patients maintain their protection from allergic reactions to stings after five years of venom immunotherapy. However, if you are stung again, you should notify your allergist.

Auto-injectable epinephrine: People at high risk of anaphylaxis should always carry and know how to use auto-injectable epinephrine. For insect sting, it's important to have two doses of epinephrine available. Check expiration dates and replace auto-injectors when necessary; store them at room temperature, away from extreme heat or cold. ■ *L.R.*

What to do if stung

- Brush the insect away if it is still on your skin, then walk (don't run) away from the area. Some bees will be threatened by quick movements and running may increase your body's absorption of the venom.
- Check to see if a stinger is left in the skin (the telltale mark of a honey bee). Remove the stinger by scraping it off with a flat surface, like a credit card; do not remove it with tweezers or your fingertips, as that could squeeze more venom out into the sting area.
- Apply ice or other cold compress (wet sand and mud work if you're at the beach) to reduce swelling.
- Watch for any of the following symptoms indicating a systemic (whole body) allergic reaction that requires immediate medical help:
  - — Hives or generalized itching other than at the site of the sting
  - — Swelling of the throat or tongue
  - — Difficulty breathing
  - — Dizziness
  - — Severe headache
  - — Stomach cramps, nausea or diarrhea
- If you have been prescribed auto-injectable epinephrine because of a previous allergic reaction to sting, use it right away and seek follow-up medical help at an emergency department. Insect sting anaphylaxis can be long-lasting, requiring more than one treatment with epinephrine.

Allergic To EXERCISE

Exercise-induced anaphylaxis – it's a diagnosis only a couch potato could love! But the truth is that exercise-induced anaphylaxis (or EIA) is a serious, potentially life-threatening condition that sounds so bizarre that some people find it hard to believe, even when it is happening to them!

Symptoms happen most often to people who are exercising at a good clip – their heart rate is up and their lungs are supercharging muscles with oxygen. That's when symptoms begin, usually with flushing or a rash on the body, feelings of extreme fatigue, then wheezing or difficulty breathing and/or gut-wrenching stomach pain and the urgent need to use the restroom.

If you think you have experienced EIA symptoms, consult your medical care provider or asthma specialist right away. Treatment will include testing to see why your body reacts to exercise in this way, specific medications to use when having symptoms and a plan to help you keep physically fit safely!

Finding the root cause of EIA symptoms is a little like doing a triathalon the first time: Every step gets you closer to the goal, but it takes every ounce of will and energy to get there – and sometimes you come up short! Experts aren't sure what causes EIA. There is no one-size-fits-all answer. But some see an association between eating food or taking medicines such as aspirin or other non-steroidal anti-inflammatory drugs (NSAIDs) and exercising, even with several hours between the two.

Pinning down the culprit can be tricky; you may not notice any food- or medication-related allergy symptoms except on days that you exercise. And you may not have symptoms every time you exercise. An allergist will help you sort through the possible causes, but be prepared to do some detective work. Report the things you ate and drank, medication you took and what you were doing the day symptoms happened. Tell the doctor what you did to make symptoms go away. Get a written plan of action and be sure to obtain a prescription for auto-injectable epinephrine. Keep your medication with you while exercising; do not leave it in your locker or gym bag.

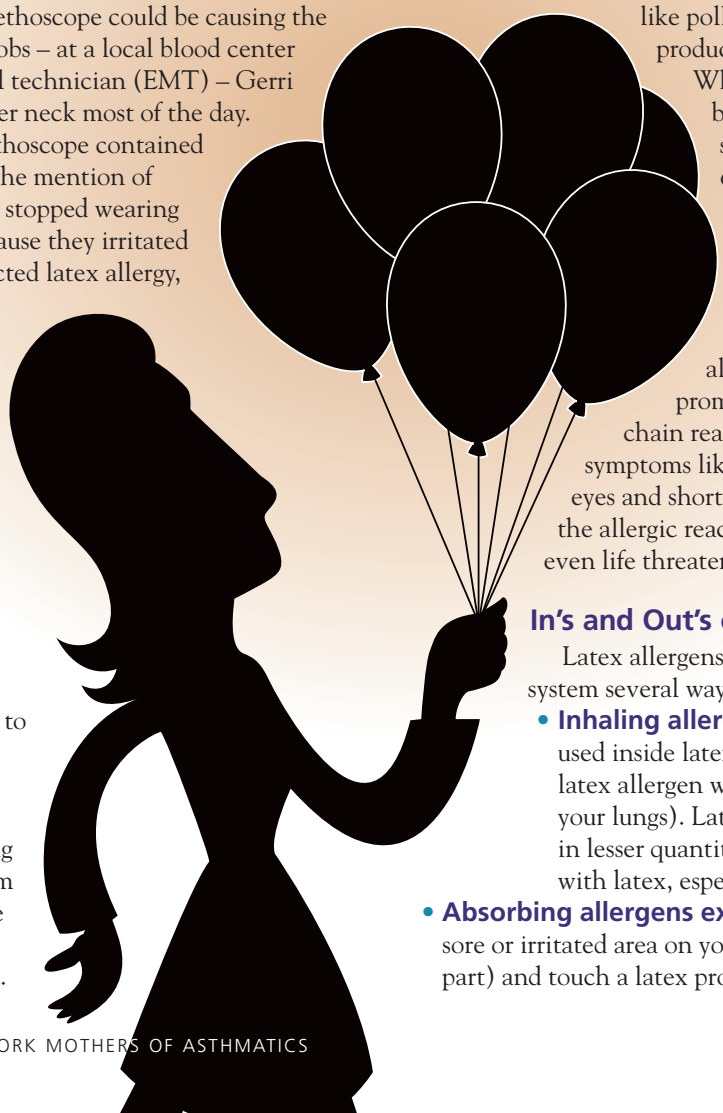
Savvy Workouts

- Wait to exercise 4-6 hours after eating or taking medication your physician suspects is associated with the anaphylaxis.
- If symptoms occur, stop the activity immediately.
- Always carry and know how to use auto-injectable epinephrine.
- Exercise with a friend who understands and can recognize symptoms of anaphylaxis and can help administer epinephrine in the event you are unable to do it yourself. ■ *N.S.*

LATEX Allergies Exposed!

Gerri Rivers woke up with an itchy, red rash on her neck and face. The rash did not spread, but it was still visible and itchy after several days, so she made an appointment to see her physician.

After taking Gerri's medical history, the physician suggested that a stethoscope could be causing the rash. Working two medical jobs – at a local blood center and as an emergency medical technician (EMT) – Gerri wore a stethoscope around her neck most of the day. The rubber tubing of the stethoscope contained latex, a known allergen. At the mention of latex, Gerri recalled that she stopped wearing latex gloves years earlier because they irritated her hands. The doctor suspected latex allergy, gave Gerri a prescription for an EpiPen® (a self-injectable dose of epinephrine that can temporarily stop symptoms of life-threatening allergic reactions) and sent her to an allergist to confirm his diagnosis. Life as Gerri knew it had just radically changed.



What's In That Rubber Tree Plant?

Latex allergy is a reaction to proteins in rubber tree sap, a milky fluid called *latex* or *natural rubber latex* used to manufacture products ranging from surgical gloves to helium balloons. The proteins in the sap that cause allergic reactions are called *latex allergens*. (*Allergen* is a term used to describe any substance that causes an allergic reaction.)

How does someone become allergic to latex? A person prone to developing allergies has an immune system that responds to ordinarily harmless proteins like pollen, pet dander or latex by producing an antibody called IgE. When IgE antibodies start to build up in the immune system through repeated exposure to the allergen, the person becomes sensitized to that allergen. The sensitivity builds up to the point that when the person comes in contact with latex allergens again, IgE antibodies prompt other cells to begin the chain reaction that leads to allergy symptoms like coughing, sneezing, watery eyes and shortness of breath. Sometimes the allergic reaction can be more serious – even life threatening.

In's and Out's of Latex Allergies

Latex allergens can get into your immune system several ways:

- **Inhaling allergens:** Cornstarch powder used inside latex gloves carries traces of latex allergen with it into the air (and into your lungs). Latex allergens can get airborne in lesser quantities from any product made with latex, especially latex balloons.
- **Absorbing allergens externally:** If you have a cut, sore or irritated area on your hands (or other body part) and touch a latex product, the allergens have an

open door to your immune system.

- **Absorbing allergens internally:** Your tissues can absorb latex allergens when a doctor or dentist does an internal examination wearing latex gloves, when a latex injection port is inserted for use with intravenous medications or even when you get a shot – stoppers on medication vials can contain latex.

These are the most obvious exposures to latex allergens. But many people who develop latex allergy have no idea how or when they developed it.

People with other allergies are at greater risk for developing latex allergy because their bodies are predisposed to overreact to proteins such as latex. However, medical care workers who wear latex gloves every day are at the highest risk: Up to 17 percent of healthcare workers in the United States have latex allergy, compared with 1 percent of the rest of the population.

How will latex allergy appear? As either a *localized allergic reaction* or a *systemic allergic reaction*.

A *localized allergic reaction* is a skin reaction in the spot you touched latex. Called *type IV (delayed-type) hypersensitivity,* this reaction can be from the latex allergen itself or the chemical additives in rubber products. Symptoms include a red, bumpy rash and itchy skin that can lead to blisters, and symptoms may appear 24–72 hours after touching a latex product (like breaking out from poison ivy the day after a camping trip).

It's easy to confuse a localized allergic reaction with *localized irritation (contact dermatitis)* – the symptoms are the same, and contact dermatitis is a common reaction to the powder inside latex gloves or friction caused by sweating inside latex gloves. However, contact dermatitis is not an allergic reaction and does not signal a sensitivity to latex allergens (or any other allergen). A *localized allergic reaction* signals that your body has built up latex-specific IgE antibodies and is possibly gearing up for a future *systemic allergic reaction*.

Systemic allergic reactions are also known as *type I immediate allergic reactions*. Symptoms include hives, sneezing, nasal congestion, tingling lips, tongue and throat swelling, coughing and wheezing, nausea, abdominal cramping, and facial swelling with itchy, watery eyes. Which of these symptoms a person will experience depends on how sensitive they are to latex and how much latex allergen they were exposed to.

Some people with type I latex allergy will develop anaphylaxis, an allergic reaction that involves multiple organ systems – skin, respiratory tract, gastrointestinal tract and/or cardiovascular system. At their most severe, anaphylaxis symptoms can include trouble breathing and loss of consciousness associated with a dramatic and sometimes fatal drop in blood pressure – anaphylactic shock. It's impossible to predict whether a systemic allergic reaction will turn into anaphylaxis, so you should take all allergic reactions seriously and carry auto-injectable epinephrine.

No two people with latex allergy are alike. A run-in with a latex balloon may give one person itchy hands but cause another to stop breathing. Local allergic reactions don't always signal the onset of systemic allergic reactions; a person could have a local allergic reaction every time he comes into contact with latex. On the other hand, a person who develops latex allergy could go straight to a systemic allergic reaction and possibly anaphylactic shock.

Although latex allergy often lasts a lifetime, a person's level of reaction to latex may change. According to Gerri Rivers, at the height of her latex allergy simply entering a restaurant where someone had a latex balloon earlier in the day sent her to the emergency room. But after years of strict latex avoidance, Gerri can feel an allergic reaction creeping up and can remove herself from dangerous situations before anaphylaxis symptoms kick in.

Where in the World Is Latex?

Some of the places you might find latex include

- Stethoscopes and intravenous drug ports
- Rubber bands and erasers
- Scuba suits
- Handgrips on bicycles and tennis racquets
- Balloons
- Pacifiers and baby bottle nipples
- Fasteners on disposable diapers
- Some carpet backings and pillows
- Raincoats and boots
- Gloves for household dishwashing

People with latex allergy can also have an allergic reaction to foods that contain proteins similar to those found in latex. This reaction is called cross-reactivity and is most frequently caused by bananas, avocados, kiwi fruit and chestnuts. "So it's important for people with latex allergy to avoid these foods," says Jordan Fink, MD, Professor of Pediatrics and Medicine, Allergy Division, Medical College of Wisconsin.

Synthetic rubber products, including latex house paints (which don't actually contain any latex), usually do not cause problems for latex-sensitive people.

Confirm the Diagnosis

Doctors can't tell you how many exposures to latex allergens are needed before you become sensitive to it (and therefore are likely to have an allergic reaction). If you suspect that you have

a latex allergy, make an appointment to see an allergist. Be prepared with as much medical history as possible, including where you were when you had reactions and what latex products you came into contact with. Your doctor will perform a blood test to look for latex-specific IgE antibodies in your system, which will show that your immune system has developed latex sensitivity.

Unlike tests for pollen or pet dander, a skin prick test is not normally used to detect latex allergy. According to Dr. Fink, there is no standardized skin test for latex allergy in the United States approved by the Food and Drug Administration. Some doctors will perform a skin-prick test using a latex glove to see how a patient reacts, but this type of test could be life-threatening if a person is allergic to latex.

To learn more about latex allergy, contact the American Latex Allergy Association (A.L.E.R.T, Inc.), a national nonprofit organization that connects consumers with educational materials, support groups, publications and product information on natural rubber latex allergy. Call 888.972.5378 or visit *www.latexallergyresources.org*.

Living Without Latex

If you've been diagnosed with latex allergy, the only way to prevent an allergic reaction is to avoid latex. No pills, inhaled medications or allergy shots are available to minimize symptoms. ■ *D.M.*

MEDICINES Don't Meddle

What if that spoonful of sugar helped the medicine go down – but the effect of the medication was anything but sweet? If a medicine causes you to bloom with hives and your throat to clamp shut, the diagnosis would be drug-induced anaphylaxis (DIA) and the treatment would be auto-injectable epinephrine.

Drug-induced anaphylaxis symptoms can begin within moments of ingesting a medication or start hours later. Symptoms of DIA include one or more of the following: hives, swelling in your throat, wheezing, light-headedness, nausea or stomach cramps after taking a medication.

Medications that most often cause anaphylaxis include

- Antibiotics
- Anti-seizure medications
- Drugs used in anesthesia
- Aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) like ibuprofen
- Insulin
- Vaccines (especially egg-based formulas if the patient has egg allergy)

Penicillin is the most common cause of drug-induced anaphylaxis, causing approximately 400 deaths per year. The most severe allergic reactions to medications usually happen when the medicine is given as a shot or intravenously (when a drug is administered directly through a vein).

If you develop flushing or hives within a few hours of taking a medication, call your medical care practitioner to talk about next steps. If you experience symptoms in multiple body parts – such as hives plus wheezing or stomach cramps – you need immediate medical attention. Follow that up with a visit to an allergist. Together you can confirm whether you have drug-induced anaphylaxis, make a list of safe medications and what to avoid in the future, and create an action plan to treat as well as prevent future anaphylaxis symptoms. ■ *N.S.*

The Waiting Game

Immunotherapy – a.k.a. "allergy shots" – can provide long-lasting relief for people with allergic asthma, allergic rhinitis and stinging insect allergy. But allergy shots can also lead to an anaphylactic reaction.

That's why your allergist requires patients to wait in the office 20-30 minutes after each shot – to be sure that if you have a reaction, it can be treated safely and quickly. Your allergist may also give you a prescription for auto-injectable epinephrine in case you have a reaction after your office visit. Allergists recommend avoiding strenuous exercising for several hours after an allergy shot because exercise speeds your body's absorption of the allergens in the shot, which increases your risk for anaphylaxis.

When ANAPHYLAXIS Looks Like ASTHMA

Early food allergy symptoms can be mistaken for asthma symptoms.

Using epinephrine early can save lives.

On September 29, 2003, Sabrina Shannon ate lunch at her high school cafeteria. She ordered a plate of French fries. Because she was allergic to milk, peanuts and tree nuts, Sabrina had checked at the start of the school year to be sure the ingredients in the fries and the oil in the deep fryer were safe.

About half an hour after lunch, Sabrina started to feel ill. She had trouble breathing, which she thought was due to her asthma, so she took several puffs from her inhaler. Sabrina went to the school office to call her mother, but her condition got worse before her mother could arrive. When a student told the school staff about Sabrina's food allergies, they called 911 and the operator dispatched an ambulance. A teacher ran to Sabrina's locker to get her auto-injectable epinephrine, but Sabrina collapsed into unconsciousness and stopped breathing. School staff started CPR and administered Sabrina's EpiPen®.

Sabrina arrived at the hospital just 30 minutes after she went to the school office with breathing problems. She died the next day. Although her symptoms started with bronchospasm, the cause of death was anaphylaxis. Sabrina was 13 years old.

What Do Your Symptoms Say?

Thirty million people in the United States have asthma. Many of them also have food allergies and are at risk of anaphylaxis – a potentially life-threatening allergic reaction. (Experts estimate that about 10 percent of children with asthma have food allergies too.) Symptoms of anaphylaxis can include hives, facial swelling, difficulty swallowing, abdominal cramps, vomiting, diarrhea, a drop in blood pressure, breathing problems and unconsciousness. However, according to Hugh Sampson, MD, Director and Division Chief,

Pediatric Allergy and Immunology, Jaffe Food Allergy Institute, Mt. Sinai School of Medicine in New York, "Patients experiencing anaphylaxis may not have all these symptoms during a reaction." In addition, early food allergy symptoms can be mistaken for asthma symptoms. "When skin symptoms are not present and the patient is having difficulty breathing," adds Sampson, "it can look and feel like an asthma attack."

To further complicate the issue, people with asthma are at risk for more severe anaphylaxis symptoms. "Individuals with food allergy who have underlying asthma are at an increased risk of more severe food-induced reactions because they frequently will have bronchospasm (tightening of the muscles in the airways) as a component of their reaction," says Mary Farrington, MD, an allergist at Virginia Mason Medical Center in Seattle, WA. "They may not initially realize that they are having an allergic reaction to an accidental ingestion of their food allergen, but rather think they are having a sudden, severe 'asthma attack.' This confusion can lead to a delay in epinephrine use, which is critical for the adequate treatment of anaphylaxis. If patients with food allergy and asthma have sudden onset of severe asthma symptoms following food ingestion, they should presume that they had an accidental ingestion of their food allergen and immediately use their epinephrine."

Dr. Farrington adds, "After epinephrine is used, patients need to be immediately evaluated in the emergency department for ongoing treatment of anaphylaxis. Some individuals will have a second episode of significant anaphylaxis symptoms following an initial improvement after epinephrine use."

Sabrina Shannon mistakenly thought her breathing problems were due to asthma.

Unpredictable Anaphylaxis

Emily Vonder Meulen, also 13 years old, died from anaphylaxis on April 13, 2006. She was shopping with her mother and sister at a local mall. They stopped to get a sandwich at a restaurant where Emily had eaten before. Emily checked that the ingredients were safe for her peanut allergy and then ate her sandwich. After eating, Emily felt a little tight in her chest, so she took two puffs of her asthma inhaler and thought she was fine. She then went to the restroom, leaving her mother and sister looking at clothes.

A few minutes later, Emily's mom got a call on her cell phone from a passer-by stating that Emily was having a bad asthma attack. Emily's mother rushed to the restroom and found Emily gasping for air. Emily tried to use her inhaler again, and her mother called 911. They tried CPR, but Emily died at the scene. Doctors told Emily's parents that Emily had died of anaphylaxis, not asthma. The apparently safe sandwich that Emily had eaten contained traces of peanuts.

Emily was very careful about checking ingredients. She'd never had any close calls with anaphylaxis, so she didn't always carry auto-injectable epinephrine with her. Instead, she relied on her body's "early warning system" – an itchy feeling in her mouth before a reaction started – to tell her if she'd accidentally eaten something with peanuts in it. Emily's family knew that her allergy was serious – that it could make her very sick – but they didn't think of it in terms of life or death.

"Even if an individual has had only mild food-induced allergic reactions in the past," says Dr. Farrington, "they may have a more severe life-threatening reaction with accidental ingestion in the future. This is particularly true for peanut allergic individuals. Because we can't predict who

these at-risk patients are, we stress that all food allergic individuals carry epinephrine with them at all times. Early administration of epinephrine for severe allergic reactions can mean the difference between life and death."

Emily's father, Paul Vonder Meulen, says, "Emily knew the dangers of her peanut allergy. She would never take chances, and if she accidentally came in contact with foods that contained traces of nuts, her tongue would itch and she would immediately expel the food. Because Emily knew what she could not eat and because of the itch sensation, we did not carry her epinephrine with us at all times. That was a mistake. But even on that dreadful day in April, when Emily died, we're not sure she or we would have known to use the epinephrine if she had it. From all the signs, we thought she was having an asthma attack. By the time we realized it was more than that, it was too late. If your food-allergic child is having any kind of reaction shortly after eating, we recommend using epinephrine right away. A few seconds could mean the difference between life and death."

When In Doubt, Use Epinephrine

If allergic individuals (or their caregivers) are knowledgeable about and prepared for an allergic emergency, the risk of dying from anaphylaxis is extremely remote. If you or your child has both food allergy and asthma, talk to your doctor about an emergency action plan and ask what to do in case of sudden, severe asthma-like symptoms after eating.

Reading ingredient labels and being careful about what you eat is crucial, but it is not enough. Accidents happen. Whether your food allergy reactions in the past have been mild or severe, it is important to have emergency medication on hand at all times and to know how (and not hesitate) to use it. If your child carries auto-injectable epinephrine with her at school, make sure she knows to keep it on her at all times and keeps a spare in the nurse's office.

According to Dr. Sampson, "When we reviewed a series of fatal anaphylactic reactions to food and compared it to nonfatal cases, one factor that stood out was the delay in getting epinephrine and medical care in most of the fatal cases. Inhalers won't stop anaphylaxis, but epinephrine will stop either an asthma attack or anaphylaxis. So if in doubt, use epinephrine and cover your bases." ■ *Anna McCartney*

Author Anna McCartney is cofounder of Food Allergy Action (www.foodallergyaction.org), a grassroots organization for parents of food allergic kids. The organization was instrumental in successful passage of the Food Allergen Labeling and Consumer Protection Act, which requires manufacturers to mark on product labels – in plain language – any of the 8 major food allergens (milk, egg, peanut, tree nut, fish, shellfish, wheat, soy) a product may contain.

Inhalers won't stop anaphylaxis. If in doubt, use epinephrine.

Emily Vonder Meulen's family didn't think of her peanut allergy as potentially life threatening.

EPINEPHRINE HOW-TO GUIDE

Laura Flannigan was horrified when her 3½-year-old son, Sean, stopped breathing during a recent family gathering. Laura had set out little bowls of mixed nuts around the house for guests to munch while socializing. She never imagined that these nuts could cause a potentially life-threatening allergic reaction called anaphylaxis.

Laura called 911. Emergency medical technicians took Sean to the emergency room, where he was treated for anaphylaxis. The next day, Laura took Sean to see an allergist, who diagnosed Sean with asthma and tree nut allergy. Laura left the doctor's office with a handful of prescriptions, including one for auto-injectable epinephrine.

"This is all so new for us," she says. "I'm trying to get my head around the various diagnoses and medications. I can understand a prescription that says to use a nebulizer every 4 hours. But how will I know when to use epinephrine on Sean when the symptoms of anaphylaxis can be so different? I'm scared I might hurt him

and that I won't use the medication correctly to give us the time we need to get to the hospital."

A 2007 survey showed that parents of children at risk for anaphylaxis were often uncomfortable using an auto-injectable epinephrine device on their children. If you're one of those parents – or if you're worried about trying to use epinephrine on yourself – AANMA has some basics that should help you prepare for the moment we all hope will never come.

What Is Anaphylaxis?

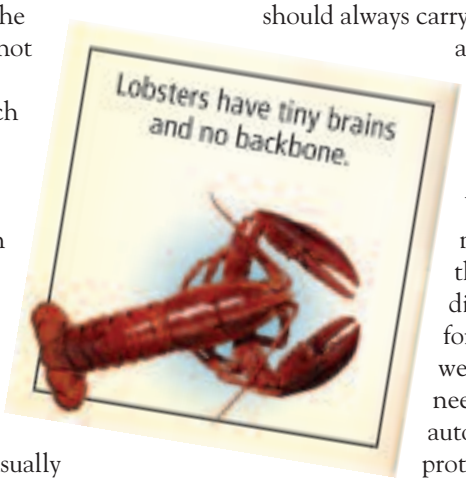
Anaphylaxis is a sudden and severe allergic reaction that affects your whole body. Symptoms can include

- Hives (red, itchy bumps on your skin)
- Lip, tongue and throat swelling
- Nausea, vomiting, diarrhea, cramping
- Shortness of breath, wheezing, coughing
- Drop in blood pressure
- Loss of consciousness

When diagnosing anaphylaxis, doctors usually look for skin symptoms like hives plus problems in one other organ system.

Anaphylaxis symptoms can start within seconds of exposure to allergens, such as an insect sting or eating a peanut. Gerri Rivers lived with immediate and severe reactions to latex. "My family went out to dinner one night, and I ended up in the emergency room. It turned out that someone had balloons in the restaurant earlier in day, and the latex allergens left in the air were enough to send me into anaphylactic shock. Ironically, as we walked out of the ER later that night to go home, someone walked in the door with a bunch of latex balloons – probably a thoughtful gesture for a sick friend, but they sent me right back into the emergency room with another bout of anaphylaxis!" On the other hand, you may not have any symptoms until hours later, which can make identifying the cause of anaphylaxis a little tricky.

Symptoms also can be different each time a person experiences anaphylaxis – and vary in severity each time – but once they start they usually progress quickly. Because any anaphylactic reaction could turn deadly, doctors recommend that at-risk patients carry auto-injectable epinephrine with them at all times and use it at the first sign of symptoms.



Exploring Epinephrine

Epinephrine is an adrenaline hormone your body produces naturally in response to stressful situations, often called the "fight or flight" response.

The epinephrine you get as a medication has a similar effect on your body. It increases your heart rate and blood pressure, relaxes muscles in your airways, reverses swelling and suppresses your immune system's response to allergens – temporarily halting life-threatening effects of an anaphylactic reaction. On the flip side, the increased heart rate also raises your body's demand for oxygen and puts you at risk for cardiac arrest (no effective heartbeat), which is why doctors say to use epinephrine and get to the hospital immediately.

Patients at risk for anaphylaxis should always carry an epinephrine auto-injector, a prescription device about the size of a magic marker. You get a pre-measured dose that comes in two different strengths for different body weights. The needle in an auto-injector sits protected inside the device until you push the injector against your thigh. The needle is designed to go through clothing, so you won't have to strip off your pants at the local park after a bee sting. Doctors have determined that your thigh muscle is the best place to inject the medication to get it to your heart and lungs quickly.

If you accidentally inject the epinephrine into your hand or anywhere other than your thigh, get to the hospital immediately. Epinephrine constricts your blood vessels, which can cause pain or numbness (and lack of blood!) in your fingers or hand.

Many physicians recommend taking antihistamines rather than epinephrine to relieve less severe symptoms of an allergic reaction such as hives. But according to Phil Lieberman, MD, of Allergy & Asthma Care in Germantown, Tennessee, "Epinephrine is the only drug that will

reverse an anaphylactic episode. There is no substitute for epinephrine. Antihistamines take an hour to begin to work. But in that time an attack could be fatal. In addition, antihistamines only counter the activity of histamine, and there are several other chemicals that produce the symptoms of anaphylaxis. So antihistamines are no substitute for epinephrine."

When to Inject

Talk with your doctor about exactly when you should use your auto-injectable epinephrine, but a rule of thumb is that when in doubt, use it! Anaphylaxis symptoms can sometimes mimic asthma symptoms (see page 16). If you experience shortness of breath and/or wheezing right after you've eaten, for example, consider that you may have been accidentally exposed to a food allergen and should use your epinephrine. According to Hugh Sampson, MD, Director of the Jaffe Food Allergy Institute in New York, "When we reviewed a series of fatal anaphylactic reactions to food and compared it to nonfatal cases, one factor that stood out was the delay in getting epinephrine and medical care in most of the fatal cases. Inhalers won't stop anaphylaxis, but epinephrine will stop either an asthma attack or anaphylaxis. So if in doubt, use epinephrine and cover your bases."

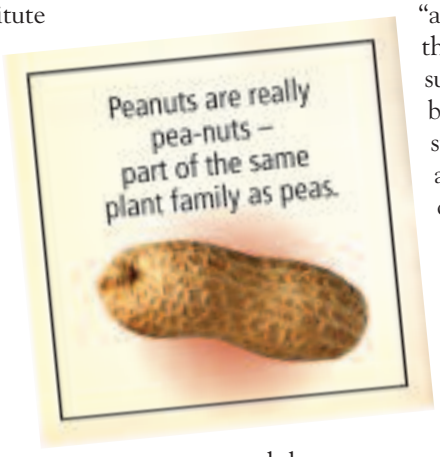
As many as 25 percent of people who have an anaphylactic reaction will have a second wave of symptoms, so your doctor may tell you to keep two doses of epinephrine with you at all times. You should also get to a hospital as quickly as possible after using your first dose of epinephrine.

Side Effects

Epinephrine may cause side effects. Tell your doctor if any of these symptoms are severe or do not go away:

- Upset stomach
- Vomiting
- Sweating
- Dizziness
- Nervousness
- Weakness
- Pale skin
- Headache
- Shaky hands
- Difficulty breathing
- Pounding, fast or irregular heartbeat

Worried that you might confuse symptoms of anaphylaxis with the side effects of epinephrine? Dr. Lieberman tells us that "although some of these side effects, such as fast heartbeat, resemble the symptoms of anaphylaxis, in our experience patients have little difficulty in making the distinction between the side effects due to epinephrine and the symptoms of an anaphylactic event. For example, the vast majority of patients experiencing an anaphylactic episode will have itching, flushing and/or hives (red welts) over the majority of their body. On the other hand, epinephrine rapidly reverses these symptoms and returns the skin to a normal color."



Storage Tips

Store your auto-injectors as close to room temperature as possible. Leaving them in extremely hot or cold temperatures may make the epinephrine ineffective or cause the injector to malfunction. But if you're outside, you do need to keep it close at hand, so try to keep your injector close to your body (to keep it warm) on cold days and in a purse or backpack on hot days. Do not store it your car or the refrigerator.

Keep your auto-injector out of direct sunlight, which can cause the epinephrine to oxidize (combine with oxygen, which changes the makeup of the drug) and become ineffective. Oxidized epinephrine will appear dark or have solid particles in it. Epinephrine can also oxidize on its own over time, so check your device regularly to be sure the liquid inside looks clear.

Epinephrine has an expiration date. Do you know when yours expires? Check the date right now and start a list of all your devices and when they expire, including backups that may be in a nurse's office or at a family member's house.

AANMA TIP: When you get a refill at your local pharmacy, check the expiration date before you leave the counter to make sure you're getting an auto-injector with at least 12 months of use left. Replace your devices before they expire to be sure you're protected.

Give Care With Confidence

Talking with your child about anaphylaxis symptoms, how to use auto-injectable epinephrine and what to expect after you use the auto-injector can help you both feel comfortable and confident about responding to anaphylaxis. ■ *D.M.*

Practice Session

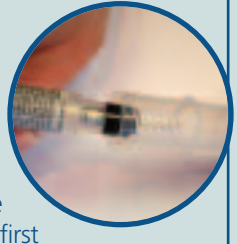
When your auto-injectable epinephrine expires, you can use it for an at-home or doctor's office training session. You'll need the expired auto-injector and a thick-skinned orange or grapefruit. (You won't be eating this fruit; it's what you'll stick instead of your thigh!) We used both the EpiPen® and Twinject® products in the demonstration pictured below. Read your own device's patient instructions for use before you start. You can also visit *www.epipen.com* and *www.twinject.com* for instructional videos and downloadable directions for patients.

EpiPen

Open the EpiPen case and remove the auto-injector. Instructions for use are on the side of the pen in 1, 2, 3 order.

Step one: Grasp the injector in your fist, keeping your thumb and fingers away from the ends. Remove the grey safety cap.

Step two: Hold the grapefruit on one side and firmly press the BLACK tip of the pen into the other side of the grapefruit. You'll hear and feel a THWANG! That means the spring-loaded auto-injector released the needle into the grapefruit. KEEP HOLDING the pen in place as you count to 10. A red flag appears in a window on the side of the pen signaling that the grapefruit received the full dose of epinephrine.



Step three: Slowly remove the pen and return it needle-first into the hard plastic carrying case. Then screw the top back on. The needle is now securely stuck into a foam-like layer at the base of the case, ready for disposal by a medical professional.

Twinject

Twinject is a single device that contains two doses of epinephrine. The first dose is auto-injectable; the second dose is manually injected. Instructions are printed on both sides of a label wrapped around the auto-injector.

To get started, remove the first green end cap. You'll see a red plastic tip that houses the needle. Keep your fingers away from the needle opening and remove the second green end cap, the safety release. Press the red end firmly into the grapefruit. You will feel another THWANG! Count to 10 and remove the needle.

To use the second dose, disassemble the auto-injector while carefully avoiding contaminating the needle. Here's how: Grasp the pen in one hand and unscrew the red cap housing the needle. After the red cap is off, carefully remove the syringe from the plastic housing. (The syringe is only a couple of inches long, the needle about another inch.) A spring may come out of the pen as well, which you can discard. Carefully remove the yellow collar – a C-shaped plastic clip around the plunger. Inject the needle into the grapefruit, depress the plunger, count to 10 and remove the needle.

A small amount of medicine will remain in the chamber; this is normal and doesn't mean that your grapefruit did not receive its full dose of epinephrine. Drop the needle point-down into the blue carrying case and press the case back together for disposal by a medical care professional; you can throw away the other pieces.

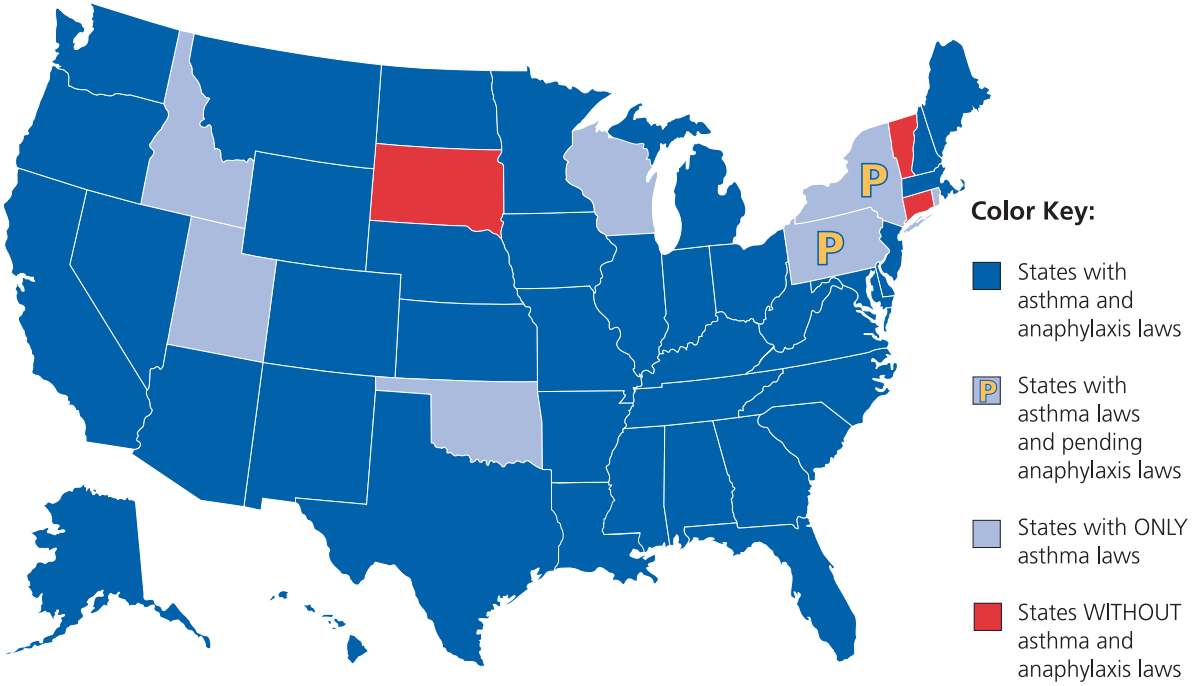
If you try this at home, take the spent device(s) to the nearest urgent care center, hospital or doctor's office for safe and sanitary disposal.

NOTE: If your child is at risk for a life-threatening episode of anaphylaxis, he should keep his prescribed medication with him at all times, including at school. Some state laws only allow a nurse to administer medication delivered by a manual syringe at school. Other state laws specify that only auto-injectable epinephrine can be used at school. To learn more about state laws protecting your child's right to carry and use auto-injectable epinephrine at school, visit *www.breatherville.org/cityhall* and click on Students and Medication at School.

BREATHE: It's the Law

State Statutes Protecting Student Rights to Carry and Self-Administer Prescribed Asthma and Anaphylaxis Medications

As of September 2007



Asthma and anaphylaxis are life-threatening conditions. Doctors instruct patients to carry their prescribed medications with them at all times. Yet every year children died at school because they couldn't get to their medications in time – many schools kept these medications locked up in a nurse's or administrator's office.

In 1998, Allergy & Asthma Network Mothers of Asthmatics held our first Asthma Awareness Day Capitol Hill (AADCH), asking Congress to protect students with allergies and asthma. We launched a national campaign, recruiting AANMA members and supporters from every state to let Congress know how this issue affected them and ask Congress to act.

Through the introduction of HR 2023, The Asthmatic Schoolchildren's Treatment and Health Management Act of 2004, and its passage into law (Public Law 108-377), Congress provided an incentive to states that, by law, protect a student's right to carry and self-administer asthma and/or anaphylaxis medications.

Since then we've been working with volunteers and state legislators to ensure states enact such laws. Today 47 states have laws addressing asthma inhalers at school and 40 have laws addressing anaphylaxis medications. You can find copies of these laws on our Web site at *www.breatherville.org/cityhall/ch_childrights.htm.* And spread the word about your state laws(s) by tearing out this poster and putting it up in your school, library, community center – wherever students will see it.

If you live in a state that's red or light blue on the map above, you can help protect schoolchildren in your state. Visit *www.breatherville.org* to ask your lawmakers to take action today.

We look forward to working with advocates, legislators and school personnel across the nation to ensure every student at every school has access to their prescribed lifesaving medications.

BREATHE: It's the Law

State laws protect student rights to carry asthma and anaphylaxis medications. LEARN MORE. Visit www.BreatheAtSchool.org.

definitions

asthma (ăz'mə) *n.* A chronic respiratory disease. Symptoms may include difficulty breathing, chest constriction and coughing.

anaphylaxis (ăn'ə-fə-lăk'sĭs) *n.* A life-threatening allergic reaction. Symptoms may include hives, difficulty breathing, nausea, a sudden drop in blood pressure and loss of consciousness.

Allergy & Asthma Network
Mothers of Asthmatics

800.878.4403

RESPIRAR: Es la ley

Las leyes estatales protegen el derecho de los estudiantes a llevar sus medicinas para el asma y la anafilaxis. Aprende más. Visita wwww.aanma.org (click “en español”)

Definiciones

Asma: Enfermedad respiratoria crónica. Los síntomas pueden incluir dificultad para respirar, opresión en el pecho y tos.

Anafilaxis: Reacción alérgica que puede causar la muerte. Los síntomas pueden incluir ronchas, dificultad para respirar, náusea, baja de presión y pérdida de conciencia.

Allergy & Asthma Network
Mothers of Asthmatics
800.878.4403

Education Advocacy Outreach

AANMA offers asthma and allergy resources to help your family stay healthy.

Allergy & Asthma Network Mothers of Asthmatics (AANMA) brings you readable resources you can't find anywhere else, including *The MA Report* newsletter and *Allergy & Asthma Today* magazine. We also offer a toll-free HELPline and e-mail support to answer your questions about health and advocacy issues.

When you join AANMA, you also become part of a nationwide network of families and medical professionals. You support efforts to protect patient access to specialty care and safe, effective medications. You support community education on asthma, allergies and food allergies. And you make your voice heard by lawmakers at the local, state and national levels.

Call 800.878.4403 for a member information packet or
visit *www.breatherville.org/headquarters* for an online membership form.

JOIN TODAY! Just $35 gives you a full year of individual membership benefits ($100/year for medical professionals).

Allergy & Asthma Network
Mothers of Asthmatics

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