

Understanding Anaphylaxis



How to prevent, treat and manage life-threatening allergies



Special Edition of

Allergy & Asthma Today



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Who We Are

Allergy & Asthma Network is the leading nonprofit patient outreach, education and advocacy organization for people with asthma, allergies and related conditions. Our patient-centered network unites individuals, families, healthcare professionals, industry and government decision makers to improve health and quality of life for millions of people affected by the conditions.

An innovator in encouraging family participation in treatment plans, Allergy & Asthma Network specializes in making accurate medical information relevant and understandable to all while promoting standards of care that are proven to work. We believe that integrating prevention with treatment helps reduce emergency healthcare visits, keep children in school and adults at work, and allow participation in sports and other activities of daily life.

Our Mission

To end needless death and suffering due to asthma, allergies and related conditions through outreach, education, advocacy and research.

Allergy & Asthma Network is a
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Anaphylaxis Answers

Superheroes come in all shapes, sizes and genders. Wonder Woman, the Fantastic Four and Superman are imaginary heroes. My favorite superheroes are real and perform feats that save lives. Andrea Tanner and Libby Stigaard Ilson come to mind.

Andrea is a school nurse from Indiana and works to support the thousands of school nurses who keep students healthy and safe; she also teaches school staff to be meticulously watchful over students at risk for anaphylaxis, a severe, life-threatening allergic reaction. Libby is a mom from Florida who saved her son after he experienced anaphylaxis upon eating food cooked with garlic, one of his allergens.



Ever vigilant, Andrea and Libby emphasize awareness, education, and always being prepared.

People at risk for anaphylaxis should carry epinephrine auto-injectors, the first-line treatment for anaphylaxis. If treated quickly with epinephrine, anaphylaxis symptoms usually reverse even before the patient reaches the hospital for follow-up care. On the other hand, if left untreated, the reaction can be deadly.

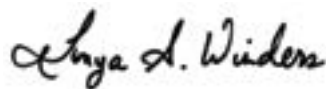
How do you know if you or a family member is at risk for anaphylaxis? How do you stay prepared and safe?

You are holding the first step in your hands right now: *Understanding Anaphylaxis*. This comprehensive guide approaches the subject logically and thoroughly, walking you through a number of potentially life-threatening allergies from food and medicine to latex and exercise, and many in between. The guide teaches you how to recognize signs and symptoms of a severe allergic reaction, how to use an epinephrine auto-injector and what to include as part of an Allergy and Anaphylaxis Emergency Plan.

I, too, know firsthand how it feels to watch your child have a severe allergic reaction. I know the pain of seeing fear in their eyes and wondering if they are going to be okay.

Life-threatening allergies are on the rise around the world; however, many people remain unaware of the threat and necessary treatment. That's why we produced this magazine. After reading *Understanding Anaphylaxis*, you will be prepared to respond when or if the need arises. You will know how to educate those you love and care about.

And you will live an empowered life by applying the knowledge and skills necessary to save a life – maybe even your own.



Tonya Winders
President and CEO
Allergy & Asthma Network

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WHAT IS ANAPHYLAXIS



Stephanie Miller sat with her family at an Italian restaurant. She ordered a pesto dish after the server assured her it did not contain peanuts; Stephanie has a severe allergy to peanut. Fifteen minutes after eating the meal, hives appeared around her mouth, her lips and tongue swelled, and she vomited. It turned out pine nuts in the pesto were ground in the same grinder used for peanuts.



Nolan Daniels leaned on a park bench and enjoyed the warm morning sun while his son played nearby. He didn't notice the wasp until it clasped to his ankle and stung him. After brushing away the wasp, Nolan noticed bright red welts on his skin where he was stung. Soon after, he had difficulty breathing and he felt nauseous and dizzy.



Jenna Dixon put on goggles in chemistry class and a few minutes later she felt itching around her eyes. Soon a rash developed and her face swelled significantly; the school called 911. The goggles were made with latex, so Jenna went to an allergist who confirmed her latex allergy.



Anaphylaxis: It's New to Me

Anaphylaxis – a severe, life-threatening allergic reaction usually to food, insect venom, medication or latex – is common in the United States. Research shows it occurs in about 1 in 50 people, although many believe the rate is higher.

Symptoms typically involve more than one organ system and can include:

- Skin: itching, redness, swelling, hives
- Mouth: itching, swelling of lips, tongue
- Stomach: vomiting, diarrhea, cramps
- Respiratory: shortness of breath, wheezing, coughing, chest pain and/or tightness
- Heart: weak pulse, dizziness, faintness
- Headache, nasal congestion, watery eyes, sweating
- Confusion, feeling of impending doom
- Loss of consciousness

Anaphylaxis can start within seconds of exposure to allergens, such as an insect sting or eating a peanut, or may not appear until hours later such as with red meat allergy. This makes identifying the cause of anaphylaxis a little tricky.

Symptoms can be different each time a person experiences anaphylaxis and vary in severity each time – but once they start they usually progress quickly.

While skin symptoms such as itchy rashes or hives are common with anaphylaxis, they do not always occur – 10-20 percent of cases have no skin symptoms.

Rules To Remember

- Epinephrine is the **ONLY** medication that can reverse the life-threatening symptoms of anaphylaxis. It is the first line of treatment. Administer epinephrine as soon as anaphylaxis symptoms occur.
- People at risk for anaphylaxis should carry two epinephrine auto-injectors at all times, use it at the first sign of symptoms and seek follow-up medical care right away. Thirty percent of people who experience an anaphylactic reaction need more than one dose of epinephrine to relieve symptoms.

Average time to respiratory or cardiac arrest due to anaphylaxis:

Food
allergy =



Venom
allergy =



Medication
allergy =



Source: *Clinical & Experimental Allergy*, Volume 30, Issue 8

You've Got Questions...

Right about now you may be asking yourself, "How do I know which is life-threatening and which is non-life-threatening?" And, "How do I reduce the risk of anaphylaxis happening again?"

The answer lies with having an accurate diagnosis, understanding your allergy and how to avoid it, carrying two doses of epinephrine everywhere, every day, and being prepared to use it right away in case of an emergency.



Is It Food Allergies?

Approximately 15 million Americans have a food allergy, including 6 million children. Eight foods account for 90 percent of all food-allergy reactions in the United States: cow's milk, eggs, peanuts, tree nuts, wheat, soy, fish and shellfish. Other food allergies range from avocados to yams to sesame. Some people are even allergic to meat although it is very uncommon.

Most food allergy symptoms are mild, but in the United States there are approximately 30,000 episodes of food-induced anaphylaxis every year, associated with 150-200 deaths annually.

The only proven way to prevent an allergic reaction

is to avoid foods you are allergic to, so an accurate diagnosis is essential.

“Board-certified allergists can help determine your food allergens because they have the special training and experience in interpreting symptoms,” says Jay Portnoy, MD, an allergist and immunologist at Children’s Mercy Hospital in Kansas City.

Some children will outgrow 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 or tree nuts, although it is still possible. Maintain a close relationship with your allergist who can determine whether the food is still a problem.



Dear Diary

The first thing a doctor looks at when diagnosing food allergy is your history of symptoms. If you think you might have a food allergy, keep a written diary with the following information:

- What exactly did you eat and how much?
- Where did you eat the food?
At home? A restaurant?
- Were you doing anything else during or just after your meal?
- What kind of symptoms did you experience?
- How long after consuming the food did you notice symptoms?
- How long did the symptoms last and how severe were they?
- Did you do anything to treat the symptoms such as take prescription or over-the-counter medications?

Allergy testing is not for do-it-yourselfers! If you think you're allergic to food, schedule an appointment with a board-certified allergist to undergo testing.

Show your diary to your healthcare provider. Quite often, the food allergy will be obvious but testing is necessary to confirm the diagnosis.

Food Allergy Testing

The Guidelines for the Diagnosis and Management of Food Allergy in the U.S. (National Institutes for Allergy and Infectious Diseases) say the diagnostic tests to evaluate food allergy should be based on the patient's medical history and not be comprised of general large panels of food allergens.

The food allergy tests 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 prick device. If you develop a raised skin reaction (called a wheal) at the site of the prick, that indicates a possible allergy. If there is no reaction, you are unlikely to be allergic to that food.

Skin prick tests are quite accurate for foods with stable proteins, including peanut, tree nuts, milk, egg, fish and shellfish. They are less reliable for fruits and vegetables, which have proteins that break down quickly.

Blood tests that look for allergen-specific IgE antibodies (Immunoglobulin E, particles in the blood that indicate allergy) are also useful for identifying food allergies.

They are particularly helpful for people whose allergy history puts them at high risk of a serious reaction to

skin prick test; whose skin problems make skin-prick testing uncomfortable or dangerous; or who take certain medications that interfere with skin prick test results.

Your healthcare provider may recommend an **oral food challenge test** to diagnose food allergy. The patient is asked to eat very slowly a tiny amount of a food, and then gradually larger amounts, to determine if there's any allergic reaction. Because an oral food challenge always carries risk, it should be performed by an allergist trained in how to conduct the test and at a medical facility that has epinephrine, oxygen, IV fluids and other treatments for potentially severe reactions. A 2017 study published in the *Annals of Allergy, Asthma and Immunology* found that oral food challenges are extremely safe, with about 2 percent experiencing anaphylaxis.

Be Prepared

1. If you or your child has been diagnosed with a food allergy, talk with your healthcare provider about how to avoid reactions. Ask for a written Anaphylaxis Emergency Action Plan. Give a copy of this plan to your child's school and all caregivers.

2. If you have a life-threatening food allergy, ask your doctor to prescribe two epinephrine auto-injectors to use in an anaphylaxis emergency.

3. Be sure to carry two epinephrine auto-injectors with you at all times and know how to use them. Make sure school, family, friends and other caregivers are also trained on how and when to use epinephrine.

4. Consider wearing a medical alert bracelet that lists foods you are allergic to and has instructions for administering epinephrine if you are unable to do so yourself.

ALLERGY MYTH

MYTH: Children younger than 3 years old cannot be tested for food allergies.

TRUTH: There is no specific age limit for food allergy testing. If you think your child has a food allergy, consult an allergist who will take a full history of symptoms and recommend options for testing.



Top 8 Food Allergens

(Account for 90% of all food allergy reactions in the United States)

Tree Nuts

Almonds, brazil nuts, cashews, hazelnuts, macadamia nuts, pine nuts, pistachio, trail mix or mixed nuts, walnuts



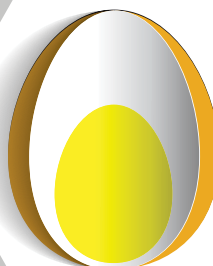
Peanuts

Peanut butter, trail mix or mixed nuts



Eggs

Batter-fried foods, breads and baked goods, crepes, ice cream, mayonnaise, pancakes, pastas, quiche, waffles



Fish

Anchovies, catfish, cod, salmon, tuna



Dairy

Cheese, cow's milk, creams, custard, ice cream, pudding, yogurt



Wheat

Barley, bran, breads, cookies, crackers, croutons, doughnuts and muffins, pancakes, pizza, rye, waffles, wheat-based cereals, flour and pastas



Soy

Edamame, soy milk, soy sauce, tofu



Shellfish

Crab, lobster, shrimp



* Food allergens may appear in more food items than those listed. Check ingredients and read food labels to confirm. When in doubt, call the manufacturer to determine if a food is allergy safe.

Sesame – the 9th food allergen?

Sesame allergy is on the rise in the United States. It's common in Middle Eastern, Indian and Asian cuisines and shows up in salad dressing, hummus, granola bars and on hamburger buns.

Less common food allergens include corn, garlic, gelatin, lupin, meat, mustard, sunflower seeds and poppy seeds.



How to Read a Food Label

In 2006, the Food Allergen Labeling and Consumer Protection Act took effect, making it easier for people with food allergies to avoid packaged products that contain their food allergens.

What You Need to Know

1. The law mandates that labels of food packages containing a Top 8 food allergen (see the infographic on the opposite page) list the allergen in clear language, either in the ingredients or in a “Contains” statement placed immediately after or next to the ingredients.
2. The law applies to any food flavoring, spice, coloring or processing aid that contains a Top 8 food allergen.
3. The law does not apply to meat or poultry, certain whole egg products governed by the U.S. Department of Agriculture, sesame and other seeds and gluten-containing grains other than wheat.
4. Molluscan shellfish, such as clams, oysters, mussels and scallops, are not considered a major food allergen under the labeling laws.
5. Food manufacturers are not required to list highly refined peanut, tree nut or soy oils because processing separates the allergen protein from the oil and they are considered safe.



Safety Tips

- “First look for the ‘Contains’ statement, and if your allergen is listed, put the product back on the shelf,” says Rhonda Kane, a registered dietitian and consumer safety officer with the U.S. Food and Drug Administration (FDA). “If there’s no ‘Contains’ statement, it’s still important to read the full ingredient list to see if your allergen is present. If you see its name even once, it’s back to the shelf for that food, too.”
- Avoid foods with advisory statements on allergens, such as “May contain,” “Produced in a facility that,” or “Manufactured on shared equipment with” – this means there’s a chance the food allergen is present in the product or it was made using equipment that made other foods containing an allergen.
- Food manufacturers can change ingredients without notice, so even if a food was previously “safe,” recheck the ingredient list every time.
- “If you’re unsure about whether a food contains any ingredient to which you are sensitive, don’t buy the product, or check with the manufacturer first to ask what it contains,” Kane says.

HIDE & SEEK

Ingredients derived from common food allergens can be listed under many different names on the food label.

Dairy

- Casein
- Curds
- Ghee
- Lactalbumin
- Sodium caseinate
- Tagatose
- Whey

Egg

- Albumin
- Lysozyme
- Meringue
- Ovalbumin
- Surimi

Peanut

- Cold-pressed peanut oil
- Goobers
- Legumes
- Marzipan
- Nut meat
- Nougat

Sesame

- Benne
- Gingilly
- Sesamol
- Sim Sim
- Tahini

Soy

- Miso
- Natto
- Shoyu
- Soya
- Tamari
- Tempeh
- Textured vegetable protein

Wheat

- Farro
- Food starches
- Graham flour
- Malt
- Semolina
- Spelt



What Can I Eat?

Practical Steps to Conquer Anxiety

Eight-year-old Jordan is allergic to peanuts, tree nuts, soy, sesame, poppy, peas, beans and pumpkins. At school, she checks with teachers before eating anything not sent from home by her mom, Mary.

Most times this is enough. One time, after checking the label and asking school staff about the ingredients, Jordan ate a snow cone. Soon she felt sick to her stomach and went to the school nurse's office. The school nurse called Mary and told her that based on Jordan's symptoms – and reading the ingredient list for the snow cone – she didn't think this was an allergic reaction. Mary agreed. She suspected Jordan's reaction stemmed from anxiety rather than something in the snow cone or cross-contamination.

Food allergies can generate plenty of anxiety for parents and children alike, says Mary Klinnert, PhD, a licensed pediatric psychologist with National Jewish Health in Denver.

“For parents, it's a core fear that something bad is

going to happen to your child, something you could possibly prevent,” Dr. Klinnert says.

Feeling anxious and out of control is especially common when a child is first diagnosed with food allergy, adds David Swanson, PsyD, a psychologist in Encino, California. That's not necessarily a bad thing.

The initial anxiety about food allergies can motivate parents to seek information and strategize about avoiding allergens and handling emergencies. And children's anxieties can motivate them to be careful about what they eat. Once you've put the early nerves to good productive use, you and your child can manage – even banish – anxiety for good, Dr. Swanson says.

1. Make a Plan

Work with your child's medical care team to develop an Allergy and Anaphylaxis Emergency Plan, which will spell out your child's food allergies, signs and symptoms of a reaction, the appropriate responses, how





to administer medications and whom to contact. Share the plan with your child's school – including school nurses and teachers – and with any other caregivers. Deliver the plan and review it in person.

2. Investigate: Read the signs

Some kids tell parents exactly what's on their minds. Others aren't so open. You may have to investigate if you think your child has anxiety about his or her food allergies.

The best time to do that is at night before bedtime, Dr. Swanson suggests. That's when children are winding down and are less vulnerable to stress. Be brief, and ask open-ended questions such as, "How did it go today?" or "What went well today?" or "What do you wish had gone better?" instead of leading questions such as "Are you feeling sad about your food allergy?"

Children who are anxious about food allergies may ask a lot of questions before activities and seem afraid or hesitant, Dr. Klinnert says. Parents may find children are reluctant to do something that they usually like, such as going to a friend's birthday party or a soccer game. There also may be talk about death or limits on their future – what they can or can't be when they grow up – because of food allergies. That's an indication that "they're really working on this fear," Dr. Klinnert says.

Some children show other signs of anxiety, like repeatedly washing their hands out of fear that they've come into contact with an allergen. They may act out and suffer from headaches, insomnia, weight loss or vomiting.

3. Reassure and Repeat

Young children need reassurance that they're safe. Having an Anaphylaxis Emergency Action Plan in place helps parents to confidently assure kids they are protected and cared for whether at school, Little League, church or a scouting sleepover. Gently remind them "we carry our epinephrine auto-injectors everywhere, every day, and we're prepared to use them right away."

4. Don't Let 'Em See You Sweat

No matter how anxious you feel, it's important to appear calm. "Parents can sometimes overdo it when telling a child to avoid certain foods, even though they're trying to help," Dr. Swanson says.

Peppering your child with constant reminders before a play date, for example, can cause stress. Instead, call the friend's parents and explain your child's needs to them. An accident can always happen, but sound planning can reduce the likelihood of one occurring.

5. Think Outside the Box

Work with your school to find creative non-food alternatives for children's celebrations or provide allergy-safe foods so your child is not excluded.

6. Seek Help Through Rough Patches

As parents and children learn to manage food allergies, anxiety should lessen. If your child is still showing signs of anxiety – or you're feeling anxious much of the time yourself – seek help from a mental health professional for additional coping strategies and support. Ask your child's doctor if there are any local food allergy support groups in your area.

7. Empower and Build Confidence

When parents hand over some responsibility for managing food allergies, it helps kids feel stronger and more confident. Mary now asks daughter Jordan to read food labels and lets her choose foods at the grocery store. "It's like teaching kids to wear a seat belt," she says. "It's about learning to keep safe and take care of themselves."

8. Recipe for Success

Food allergies don't have to define your child – or your family. Jordan's family goes out to eat every Sunday, and Jordan is learning what questions to ask when ordering. "She's learning that she can have food allergies and still go out and have a good time," Mary says.

ALLERGY MYTH

MYTH: Children with egg allergy should not get the flu shot or the MMR (measles, mumps, rubella) vaccine.

TRUTH: Children who have had mild reactions to eggs – such as hives – may receive the regular flu shot, according to the Centers for Disease Control and Prevention (CDC), but they should be monitored in a doctor's office or pharmacist's office for 30 minutes after receiving the injection. Children with severe egg allergy should discuss vaccination options with a board-certified allergist.



Smart Dining

Eating out is an American pastime – even for the approximately 15 million who have food allergies. To avoid an accidental food allergy exposure, allergists recommend that diners:

- Call the restaurant ahead of time or check menus online before eating out.
- Communicate with the restaurant staff about your food allergies. Create a card that lists your allergies and ask that it be given to the chef or kitchen staff.
- Read menus closely and don't order foods likely to cause an allergic reaction. Ask about ingredients.
- Carry two epinephrine auto-injectors to treat anaphylaxis.

John and Joanne Morton love to go out to eat with their teenage son William, who is allergic to egg, peanut and tree nuts.

“We establish an open dialogue with everyone – the manager, host, servers and even the chef – to ensure William receives a safe meal,” Joanne says. “There’s always a chance for miscommunication. In many restaurants, you often get more than one server, and you cannot take it for granted that every person serving your table is informed.

“The more you talk with the restaurant staff, the more you develop an intuition whether the restaurant is

a safe place to dine. For example, if the restaurant staff is confusing food allergies with gluten-free, that’s a red flag for us.”

Says Stephanie Leonard, MD, a food allergy specialist at Rady Children’s Hospital-San Diego: “The bottom line is, if you don’t feel comfortable or you don’t feel the restaurant staff fully understands that your food allergy could be life-threatening, then the best choice is not to eat there.”

Safety First

Many restaurants and quick-service eateries now list allergens on their menus and post food allergy awareness information in the kitchen area. Cruise ships will cater to food allergies if you notify the cruise line when you book the trip.

At South Point Hotel, Casino and Spa in Las Vegas, the chef went a step further by requiring the wait staff to undergo food allergy training and their cooks to use special color-coded cutting boards and utensils to avoid cross-contact of allergens. Another precaution South Point takes is serving the food-allergic patron’s plate first so that it does not come into contact with any other food served.

For more on restaurants and food allergy training, download our “Allergy-Safe Dining” guide at AllergyAsthmaNetwork.org/allergy-safe-dining.



Avoiding Cross-Contact

When an unsafe food allergen comes into contact with a food that's safe for you, it's called "cross-contact."

It happens more often than you think. Dipping a knife in the jelly jar after using it to spread peanut

butter; using the same grill or pan to cook a hamburger after it was just used to cook salmon steak; chopping almonds on a cutting board and then slicing a tomato without cleaning the cutting board first. And removing walnuts from a salad won't fully eliminate traces of the tree nut allergen.

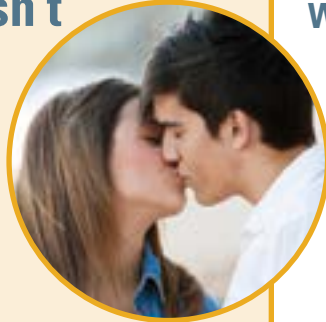
When a Kiss Isn't Just a Kiss

Ahh, the first kiss. The excitement, the spontaneity, the romance ... the hives? Allergic reactions from kissing can occur when a food allergen remains in your partner's saliva.

"Saliva can hold the allergen for hours after the food has been absorbed by the body," says Sami Bahna, MD, a board-certified allergist and immunologist from Shreveport, Louisiana.

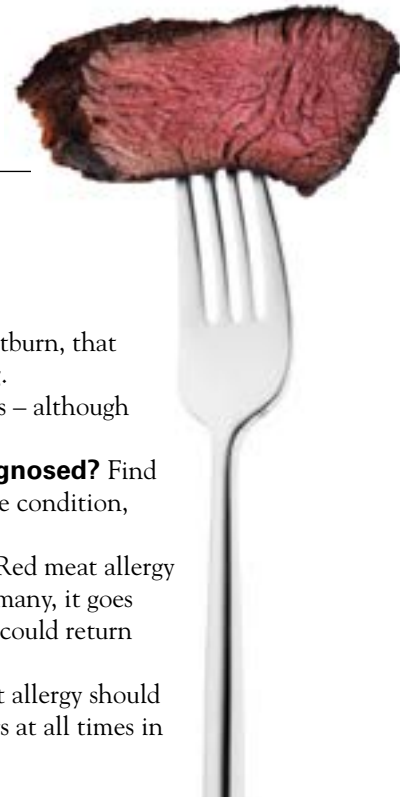
The risk of a severe reaction from kissing is very small, but it can happen.

If your partner has consumed one of your food allergens, then hold off on any smooching. While it may not be romantic, ask your partner to brush his or her teeth and tongue and rinse out the mouth before kissing.



What to Do

- Wash hands in soap and water before preparing a meal. Commercial hand wipes will also help; studies show hand sanitizers do not.
- Wash cutting boards, dishes, pots, pans and countertops thoroughly with hot, soapy water after preparing food items. Cook the allergen-safe meal first to minimize risk.
- Designate a separate shelf in the refrigerator and cupboard for allergen-safe foods. Use stickers to identify them as "allergen safe."
- At restaurants, after informing the wait staff and chef of your food allergy, ask that your food be prepared with clean and separate pans, utensils and cooking area. This includes deep fryers.
- Never share food, utensils or drinks.
- Avoid buffets or cafeterias, which have a greater risk of cross-contact due to shared utensils and spilled foods.



Mystery Meat Allergy

A mysterious red meat allergy has emerged in recent years. It's triggered by food from mammals – mostly beef, pork or lamb – and symptoms usually appear hours after eating. Most people with the condition also report a recent tick bite that itched longer than normal.

How common is this? Prevalence of red meat allergy – also called "alpha-gal" after the blood carbohydrate involved – is very low. People who spend a lot of time outdoors in tick areas, such as hunters and gardeners, are at higher risk.

What are the symptoms?

- Itching and hives, especially on hands and feet.
- Digestion problems, such as abdominal

cramping, diarrhea and heartburn, that may occur hours after eating.

- Life-threatening anaphylaxis – although this is rare.

How is red meat allergy diagnosed? Find an allergist knowledgeable about the condition, as it requires a special blood test.

Is this a lifelong condition? Red meat allergy does not appear to last forever. For many, it goes away within two years. However, it could return with another tick bite.

Anyone diagnosed with red meat allergy should carry two epinephrine auto-injectors at all times in case of an accidental exposure.



Safe Travels

Dreaming of a vacation in a faraway land? To get there, airplane travel is likely the best mode of transportation, but it presents challenges for people with food allergies.

Some airlines continue to offer in-flight bags of peanuts, exposing peanut-allergic passengers to their allergen. Call the airline or visit its website to find out policies for in-flight meals and snacks that may include peanut or other allergens. Information on websites can usually be found under “Special Travel Needs.”

People at risk for food-related anaphylaxis should take the following steps to be prepared during a flight.

- Inform the flight crew of their allergies and request accommodations, such as an allergen-free meal or a buffer zone in which no peanut products will be sold and served and passengers will be asked to refrain from eating peanuts.
- Wipe down seats and tray tables with a commercial handwipe. Avoid using airline pillows or blankets and consider bringing something to cover your seat, since debris can sometimes be left behind from previous passengers.
- Bring your own allergy-safe food if you're not comfortable eating the airline's offerings.
- Carry your prescribed epinephrine auto-injectors onboard where you can get to them easily.

Some airlines will allow travelers to preboard and clean seating areas. Others will announce allergen-free buffer zones.

Print out the airline's published food allergy policy or the information you receive from customer service and present it to gate and flight crew.

ALLERGY MYTH

MYTH: Gluten is a food allergen and eliminating it from my diet will help me feel better.

TRUTH: Gluten is not a food allergen; it is a protein composite found in wheat, barley and rye. People who experience gastrointestinal problems from eating gluten are experiencing an intolerance, not an allergy; an intolerance is a digestive issue while an allergy is an immune system response. Gluten-free diets eliminate foods that are high in fiber, vitamin B, zinc and iron, so talk with your doctor before taking this step.



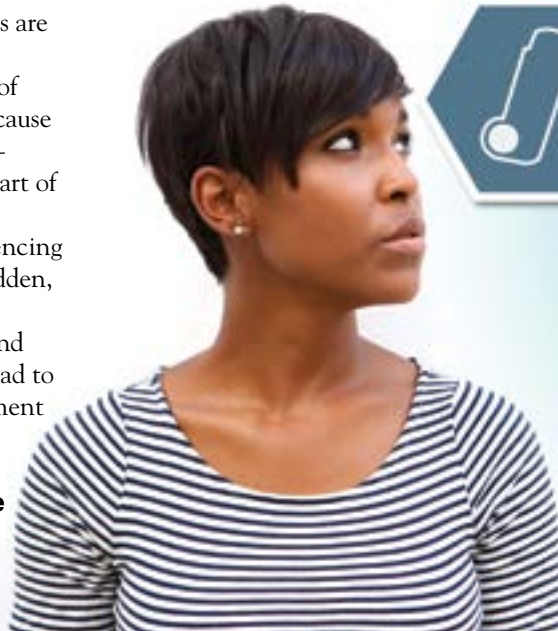
The Food Allergy-Asthma Connection

Research shows 35-50 percent of people with food allergy also have asthma. It's suspected many people with asthma don't know food allergies are affecting their asthma flares.

People with both conditions are at higher risk of anaphylaxis than those with just food allergies because they frequently experience respiratory symptoms – coughing, wheezing and shortness of breath – as part of their reaction.

“They may not initially realize they are experiencing anaphylaxis but rather think they are having a sudden, severe asthma flare,” says Mary Farrington, MD, pediatric allergist with Virginia Mason Hospital and Medical Center in Seattle. “This confusion can lead to a delay in epinephrine use, which is critical treatment for anaphylaxis.”

If you're not sure if symptoms indicate anaphylaxis or asthma, use an epinephrine auto-injector first. Then use a quick-relief bronchodilator inhaler if needed.



Peanut Allergy Prevention

The National Institute of Allergy and Infectious Diseases (NIAID) released guidelines in 2016 to help reduce the risk of children developing peanut allergy:

- Infants with severe eczema, egg allergy or both should be given peanut-containing foods as early as 4-6 months of age.
- Infants with mild or moderate eczema should be given peanut-containing foods around 6 months of age, once they are tolerating a few solid foods.

Do not give young children a whole peanut – these are choking hazards until age 4. The guidelines recommend peanut butter thinned with breast milk, formula or hot water, peanut soup and Bamba, a commercial peanut-containing puff.

The key message for parents of children at risk for peanut allergy – **consult a pediatrician or board-certified allergist before introducing peanut into a child's diet.** Certain children will need to be supervised and monitored as peanut is introduced.

Studies addressing early introduction of other food allergens – such as egg and dairy – are ongoing.

On the Horizon

New treatments for food allergies focus on building tolerance by desensitizing the body to the allergen.

In **oral immunotherapy (OIT)**, patients are given the food they are allergic to, starting with a tiny amount and then gradually larger amounts so their bodies become desensitized to it. *Important:* OIT should only be done under a doctor's supervision; do NOT try OIT on your own.

With the **Peanut Patch**, a small patch containing a dose of peanut protein is applied to the patient's skin daily. The therapy aims to desensitize immune cells in the skin to make the body more accepting of peanut.

OIT and the Peanut Patch are not FDA-approved (as of December 2017) – meaning they are not available to the general public. Talk with your doctor about these emerging therapies.



Don't let stinging insects ruin a fun outing.



Stinger Shock

THWACK! Too late! First one sting and then another. Lawn chairs toppled over and soda cans went flying.

Onlookers at the backyard party laughed as 24-year-old Kellen lunged away from wasps – until they suddenly realized something was very wrong. Kellen grabbed his backpack but he got dizzy and dropped to the ground. His lips and face swelled and red splotches appeared on his arms, not far from where he was stung. He was struggling to breathe.

Kellen's girlfriend Evie knew what to do. She reached inside Kellen's backpack and took out an epinephrine auto-injector. She removed the cap and pressed it to his thigh, holding it there as it delivered lifesaving medication into his body.

"Call 911!" she told an onlooker.

Things were happening fast, but Kellen would be okay because he and Evie were prepared and acted appropriately.

Sting Basics

For most people, bee or other insect stings simply hurt or itch or cause a lump where the sting happened. This is called a local reaction. It responds well to ice

and the itch is relieved by an oral antihistamine.

When the venom causes a reaction other than where the sting happened, it is called a systemic reaction or anaphylaxis. This signals a medical emergency that requires immediate treatment with appropriate medication.

Emergency Treatment

Epinephrine is the first line of treatment for anaphylaxis. If you're at risk for anaphylaxis from insect sting venom, carry two epinephrine auto-injectors at all times. Following treatment, report to the nearest emergency department for observation, additional treatment and instructions. A second, late-phase reaction – called biphasic – can suddenly appear and may be more intense than initial reactions.

Follow-Up Care

Report reactions to your primary care doctor and board-certified allergist. If you do not have an allergist, ask your primary care physician for a referral. An allergist can offer venom immunotherapy as an effective long-term solution to protect against life-threatening reactions in the future.



What to do if stung

- Flick the insect away from your skin.
- Walk (don't run) away from the area. Some insects will be threatened by quick movements and running may increase your body's absorption of the venom.
- If a stinger is left in the skin (the telltale mark of a honeybee), scrape it off with a flat surface, like a credit card; do not use tweezers or your fingertips, as that could squeeze more venom into the sting area.
- Apply ice to reduce swelling.
- Expect local redness and swelling.
- Watch for these symptoms indicating an anaphylactic reaction:
 - 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

These symptoms indicate need for immediate treatment with an epinephrine auto-injector, followed by medical assistance at an emergency facility.



Yellow Jackets

Part of the wasp family, these black and yellow insects swarm around picnic areas and trash cans. Peaking in late summer, they build their nests underground or in fallen logs; some nest in the walls of houses.



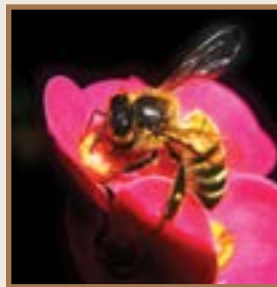
Paper Wasps

Longer and slimmer than bees or hornets, paper wasps drag their long legs behind them as they fly. Their color ranges from reddish brown to black with yellowish rings. Paper wasps build their nests on and around homes and small buildings. The nests sometimes hang from trees or under eaves and look like paper mache, upside-down umbrellas.



Hornets

Hornets are slightly larger than yellow jackets – the size of a bumble bee but with a narrow waist – and most are black with white or yellow stripes. Nests are usually found in a tree or under the eaves of a building. It can become as large as a football, always with the opening facing down.



Bees

Honeybees are fat, dark brown, slightly hairy insects often found hovering around bright flowers or feasting on clover. Their cousins, the bumble bees, look very similar. Bees build their hives in holes in the ground or on compost piles.



Fire Ants

Red and black imported fire ants are found mostly throughout southern regions of the United States. Fire ants build nests that are large, dome-shaped mounds of crumbly earth up to 18 inches across and 8-12 inches high. The nests do not have visible openings, but if you step on one, fire ants will swarm up onto your feet and legs.



After the Sting

For most people stung by a bee or any other insect, there's a burning sensation at the sting site followed by a red bump that aches and itches. Other people may experience more serious reactions – widespread swelling, hives, shortness of breath, dizziness, fainting, or worse.

If you're in the second group, what happens next? Do you have to be afraid of bees for the rest of your life?

"No," says allergist David Golden, MD, a specialist in insect venom allergy at Johns Hopkins School of Medicine in Baltimore. "What most people don't know is that there is a treatment available that essentially cures the allergy. Someone who has had a severe allergic reaction doesn't have to ever have another."

The treatment is immunotherapy – a series of allergy shots that gradually build tolerance to insect venom.

"Almost 100 percent of people who receive immunotherapy are fully protected from severe reactions, and up to 85 percent who complete the treatment will be cured," Dr. Golden says. "With a life-threatening allergy like insect venom, it's worth the effort."

Everyone who has had life-threatening symptoms after a sting should see a board-certified allergist.

First Things First: Get Tested

"An allergist will conduct a test to determine the severity of a venom allergy and be able to tell whether an insect sting is dangerous," Dr. Golden says.

Not everyone who comes to see Dr. Golden after an insect sting gets an allergy test. "We only do them when someone's history of a sting reaction puts them at high risk for anaphylaxis," he says. "

Insect venom allergy does not typically run in families, so preventive testing is not necessary.

Next Step: Immunotherapy

Insect venom immunotherapy is done in two stages. The first builds immunity with shots that contain gradually increasing concentrations of the allergen. It's usually administered once a week for 8-20 weeks. At the end of the first stage, you reach the maximum dose and are fully protected from stings.

The second stage develops long-lasting immunity with booster shots every 1-2 months. "After five years of treatment, most people can stop immunotherapy and never have another allergic reaction to a sting," Dr. Golden says.



Anaphylaxis Unknown

With anaphylaxis, the cause is often obvious: the unexpected peanuts in the cookie; the shellfish mixed into soup; the latex balloons at the party table. But what if there's no obvious or apparent cause of a reaction? This is called idiopathic anaphylaxis.

What do patients need to know about idiopathic anaphylaxis? We talked with **Dana Wallace, MD**, a board-certified allergist in Hollywood, Florida.



Q:What should someone do if the cause of an anaphylactic reaction is unknown?

A: After you have been treated for anaphylaxis, write down a list of all recent activities, especially foods, beverages and medications encountered or consumed within the previous 24 hours.

If the severe reactions occurred after a meal, get a detailed ingredient list of all food consumed. If your meal was eaten at a restaurant, ask the manager for the ingredients; for home-cooked foods, keep all labels and the remaining food product, if possible, especially if it is a newly opened package or is very old. With each episode of anaphylaxis, these lists can be compared to identify similarities or patterns.

Then write down a detailed description of your symptoms and when they occurred. Ask a friend or relative who was with you to jot down their observations as well.

If you went to the emergency department for treatment or observation, your allergist will need to review those medical records as well.

Whether it's a first-time anaphylactic reaction or a recurrence, you should consult with a board-certified allergist for an in-depth evaluation to identify what caused the allergic reaction. When the cause is not obvious, the evaluation will likely take several visits, extensive discussion and allergy testing.

Q:What type of testing is involved?

A: Your allergist will test for a wide range of foods and other allergens, including specific foods you may be asked to supply, such as spices, packaged food, or even leftover restaurant food.

Both skin and blood tests might be ordered and lab tests obtained. The allergist will also test for underlying diseases that mimic anaphylaxis.

Q:Is there a treatment plan?

A: While the allergist searches for a cause, patients with frequent anaphylaxis episodes – six or more times per year – may be placed on daily antihistamines or short courses of oral corticosteroids to minimize possible reactions. Patients with infrequent reactions – less than five episodes per year – do not usually need daily medications, but this may vary depending on previous reactions.

Anyone at risk for anaphylaxis – whether the cause is known or not – should always carry two epinephrine auto-injectors.





The Latex Files

It happened at a community barbecue. Ten-year old Marie was drawn to the clown making balloon animals. Her choice: a ladybug. She tied it tightly around her wrist. A short time later, Marie's parents saw that her wrist was blistered and bleeding.

The balloon – made with latex – was clearly the culprit. A visit to a board-certified allergist confirmed Marie indeed had a latex allergy.

What is Latex Allergy?

Latex allergy is a reaction to proteins from the *Hevea brasiliensis* rubber tree sap, the milky fluid used to manufacture more than 40,000 products, including surgical gloves and helium balloons.

Symptoms range from skin irritation to respiratory symptoms to life-threatening anaphylaxis – and there's no way to predict which will occur if exposed.

While latex allergy is rare, affecting 1 to 6 percent of the general population, it is much more common in employees who work in the medical or dental health field. In fact, 33.8 percent of dental care workers, 10-17 percent of healthcare workers and 17 percent of restaurant workers have been diagnosed with latex allergy. In addition, people who undergo multiple surgeries – such as spina bifida patients – are at increased risk for latex allergy.

The only way for people with latex allergy to prevent symptoms is strict avoidance of latex.

Allergy & Asthma Network supports policies where latex gloves are prohibited from use in healthcare and dental facilities, schools, food establishments, and by emergency responders. Many facilities have responded by switching to latex-safe gloves and medical products and supplies.

ALLERGY MYTH

MYTH: I experience only mild itchiness when wearing latex gloves, so I'm not seriously allergic.

TRUTH: Many people with latex allergy will experience only a hand rash when wearing latex gloves – but this can be a progressive condition. The longer you wear latex gloves, the more likely it is you may develop problems. Reactions to latex can become more severe with repeated exposures.



Where In the World Is Latex?

- Balloons
- Rubber gloves
- Condoms
- Elastic bands, physical therapy bands, rubber bands
- Dental dams
- Stethoscopes and blood pressure cuffs
- Spandex
- Pacifiers and baby bottle nipples
- Mouse pads
- Goggles
- Bath mats
- Garden hoses
- Certain mattresses

How is It Diagnosed?

If you suspect you have a latex allergy, consult an allergist. Be prepared with as much medical history as possible, including where you were when you experienced a reaction and what latex products you came into contact with.

Since there isn't an FDA-approved skin test for latex allergy, the diagnosis is made by medical history

and physical exam. There is a blood test (ImmunoCap) available, but the sensitivity of the test is not 100 percent.

If you experience contact dermatitis after using a product made with latex, it may not be the latex but rather an additive or accelerant in the product. Talk with an allergist about getting a patch skin test to determine what is causing the reaction.

Navigating Restaurants

When kitchen staff uses latex gloves to prepare meals, latex proteins inside the gloves are transferred to the food. Patrons cannot see, taste or smell these particles, so it can be difficult for latex allergy patients to avoid a reaction when dining out.



Restaurants often use latex balloons – not latex-safe Mylar® balloons – for parties or in banquet rooms, creating another potential exposure.

Call the restaurant, ask for the manager or host, and discuss your latex allergy. Ask if the restaurant has latex balloons on display and if kitchen staff uses latex gloves during any part of food preparation. Emphasize the severity of your latex allergy and the potential consequences if you are exposed – you want to grab their attention, says Michael Zacharisen, MD, board-certified allergist in Bozeman, Montana.

Cross-Reactive With Food

Many people don't realize that latex can cross-react with foods that have similar proteins, especially banana, avocado, chestnut and kiwi. Other cross-reactive foods include apple, carrot, celery, melons, potato and tomato. When eating these cross-reactive foods, people with latex allergy may experience an allergic reaction.

If You're Allergic...

- Always carry two epinephrine auto-injectors to treat a severe allergic reaction, or anaphylaxis.
- Notify your family, friends, school, employer and co-workers, medical and dental providers, and paramedics and EMTs about your latex allergy.
- Wear Medical Alert identification at all times.
- Check all product labels for latex. Contact the manufacturer if you're uncertain.



When Medicine Makes You Sick

Do certain medications make your skin bloom with hives, cause light-headedness, nausea or stomach cramps, and make your throat clamp shut? It could be drug-induced anaphylaxis. Symptoms can begin within moments of ingesting a medication or up to several hours later.

Medications that most often cause anaphylaxis include:

- Antibiotics
- Aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) like ibuprofen
- Drugs used in anesthesia
- Insulin (rarely)

Penicillin, an antibiotic, is the most common cause of drug-induced anaphylaxis. It causes approximately 400 deaths per year.



The most severe allergic reactions to medications usually happen when the medication is given as a shot or intravenously (directly into a vein).

If you develop flushing or hives within a few hours of taking a medication, call a board-certified allergist to talk about next steps. If symptoms are severe and involve multiple body organs – a skin rash, respiratory problems and/or digestive issues – call 911 and go to the emergency department immediately. Then you'll need to schedule a visit with the allergist and get tested for the drug allergy.

If the diagnosis is confirmed, ask the allergist to prescribe you two epinephrine auto-injectors, make a list of safe medications and work with you to create an Allergy and Anaphylaxis Emergency Plan for treating as well as preventing future reactions.



Allergic to Exercise?

Exercise-induced anaphylaxis is rare, but it can be life-threatening. It happens most often to people exercising at a good clip — the heart rate is up and lungs are supercharging muscles with oxygen.

In addition to common anaphylaxis symptoms, exercise-induced anaphylaxis may include extreme fatigue, wheezing and difficulty breathing, gut-wrenching stomach pain and diarrhea.

Experts aren't quite sure what causes exercise-induced anaphylaxis, but some see an association between eating food or taking medications and exercise, even with a few hours between the two.

When talking with an allergist about your symptoms, report the food you ate and medication you took the day symptoms occurred. Explain what you did to make symptoms go away.



Quick Tips

- Get a prescription for two epinephrine auto-injectors and keep them with you when exercising – do not leave them in a locker or gym bag.
- Wait to exercise 4-6 hours after eating food or taking a medication your doctor suspects is causing exercise-induced anaphylaxis.
- Exercise with a friend who can recognize symptoms of anaphylaxis and can help administer epinephrine if necessary.
- If symptoms occur, do not continue exercising. Use an epinephrine auto-injector and call 911. See an allergist.



What You Need to Know About Penicillin Allergy

When penicillin was first introduced in 1928, it was deemed a wonder drug. It has revolutionized medicine ever since – we can now treat infections that used to be a death sentence.

However, up to 10 percent of people report being allergic to penicillin, according to the Centers for Disease Control and Prevention (CDC). That means it can cause anaphylaxis, a life-threatening allergic reaction.

Recent studies reveal most people who believe they're allergic to penicillin may actually be able to safely use it – either because they never were truly allergic or because they lost sensitivity over time.

If you think you're allergic to penicillin, see a board-certified allergist for testing. Don't wait until you're in a medical crisis. Here are five things you should know about penicillin allergy:

1 Penicillin allergy is serious – it kills 400 people a year. Anyone who is allergic to one type of penicillin should be considered allergic to all penicillin and should avoid the entire medication group. This includes the more than 15 chemically related drugs such as ampicillin, amoxicillin, amoxicillin-clavulanate and methicillin.

If you are allergic to penicillin, talk with your physician and pharmacist before taking any new medicine to confirm it's not penicillin-based. Ask whether you should carry an epinephrine auto-injector, the only treatment proven to stop anaphylaxis.

2 Penicillin allergy may not be a lifelong condition. A reaction in childhood does not automatically predict a reaction as an adult. Studies show only about 20 percent of people will be allergic to penicillin 10 years after their initial allergic reaction if they are not exposed to it again during this time period.

3 Symptoms may include hives, swelling of the mouth or throat, difficulty breathing or dizziness. Hives that suggest true allergy are raised, intensely itchy spots that may appear and change within hours. However, not all skin rashes are hives. Non-allergy-related rashes may be flat, blotchy, and spread over days rather than hours.

4 Avoiding penicillin without an allergy diagnosis is not the best idea. Alternative



antibiotics to penicillin – often called “broad spectrum” – may be less effective in treating an infection, may cause unwanted side effects or may be more expensive. Don't limit your treatment options – find out for sure whether you're allergic.

5 Testing for penicillin allergy is safe and reliable. The process is simple. First, the patient undergoes a series of skin prick tests using gradually increasing amounts of penicillin. A raised wheal at the site of the prick indicates allergy. If the tests are negative, the next step is an oral challenge – drinking a tiny dose of liquid penicillin. Testing should only be conducted by an allergist trained to recognize and treat potential allergic reactions.

Allergy Immunotherapy and Anaphylaxis

Immunotherapy via allergy shots or under-the-tongue tablets can help build tolerance to certain allergens – such as pollen and pet dander – but some people may experience a severe allergic reaction afterwards.

When undergoing allergy shots, your allergist may require you to wait in the office 30 minutes after each shot so that if you experience anaphylaxis, it can be treated safely and quickly with epinephrine.

With under-the-tongue tablets, the allergist will administer the first dose in the office, similar to allergy shots; then you'll have the option of taking the tablet at home instead of coming to the office every week. Ask your allergist for a prescription for two epinephrine auto-injectors and make sure they're easily accessible when you take the tablets.



How to Use an Epinephrine Auto-Injector

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

The epinephrine you take as a medication to treat anaphylaxis has a similar effect on your body.

When administered, epinephrine 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 the life-threatening effects of an anaphylactic reaction.

Epinephrine is the ONLY drug that will reverse anaphylaxis and should be given as soon as symptoms appear. Any delay greatly

increases the chance of hospitalization – fatal reactions are often associated with either delaying the use of epinephrine or not using it at all.

Epinephrine auto-injectors contain a premeasured dose of epinephrine. Two different strengths are available for treating different body weights.

Step-by-Step Instructions:

Epinephrine auto-injectors are easy to use and come with clear instructions. The device’s needle sits protected inside the device until you inject it. Ask your doctor for training on how to correctly use an epinephrine auto-injector; manufacturers’ websites may also provide detailed steps and how-to videos.

1. Pull off the safety cap or needle covering.
2. Inject the epinephrine into the outer thigh; avoid the buttocks area. The needle is designed to go through clothing if necessary. Hold the leg and keep it steady while you inject the epinephrine.
3. Once injected, follow the device’s instructions for how long to keep it in place — usually several seconds — until all the epinephrine is delivered.
4. Remove the device and massage the injection site for 10 seconds.
5. Call 911 immediately. Tell the dispatcher you just used epinephrine to treat a suspected anaphylactic reaction. Make arrangements for transport to an emergency department for additional treatment.

Side effects may include uncontrollable shaking or twitchiness and feelings of panic or anxiety. These should subside within a few minutes or an hour.

Epinephrine and Other Medical Conditions

Epinephrine is the only medication that has no contraindication for anaphylaxis — meaning there is no medical condition or factor that serves as a reason to withhold it, says board-certified allergist Christopher Randolph, MD, of Waterbury, Connecticut.

While doctors and patients should be aware of and discuss the potential impact epinephrine may have on other medical conditions, such as heart disease, it “doesn’t matter what other medical condition is present, because anaphylaxis is a life-threatening situation and epinephrine is the only treatment for it — there is no alternative,” Dr. Randolph says.



Maintaining Your Device

Store your epinephrine auto-injectors as close to room temperature as possible. Leaving them in extremely hot or cold temperatures can make the epinephrine ineffective or cause the injector to malfunction. Do not store them in your car or in a refrigerator.

When outside, you need to keep your epinephrine auto-injector close at hand, so pack it in a purse or backpack.

Keep your epinephrine auto-injectors out of direct sunlight; this can cause the epinephrine to oxidize

(combine with oxygen, changing 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 is clear.

Epinephrine auto-injectors have an expiration date and they should be replaced as soon as they expire. (However, if all you have is an outdated auto-injector in an emergency, use it as it may provide some benefit.) Check the date on your devices regularly, including backups that may be in a school nurse's office or at a family member's house.

When Calling For an Ambulance...

After epinephrine is given, call 911 for an ambulance – request one that carries a supply of epinephrine. Patients will need to be transported to the emergency department even if symptoms appear to improve, as they are at risk for a secondary (or biphasic) reaction requiring additional treatment.

The 911 personnel will ask questions when you call – provide them with as much information as you can. They will need to know:

- The address where the patient is – be as clear as possible
- Your name and phone number in case they need to call you back
- Approximate age of the patient
- What happened
- Whether the patient is conscious and/or breathing
- Time of first reported symptoms
- The time the first dose of epinephrine was given
- The time a second dose of epinephrine was given (if applicable)

What to Do At the Emergency Department

- Share as many details as possible about the incident that may have caused the allergic reaction.
- Provide information about if/when an epinephrine auto-injector was administered prior to arrival. (Bring the used epinephrine auto-injector with you.)
- Ask the emergency department doctor or nurse to administer epinephrine, if it hasn't been administered already.
- Ask the emergency department doctor to provide you with an Allergy and Anaphylaxis Emergency Plan, a prescription for two epinephrine auto-injectors and a referral to a board-certified allergist if you don't already have one.





Epinephrine Or Antihistamines?

When anaphylaxis occurs, the first line of treatment is epinephrine – not antihistamines. It's the only medication proven to stop a life-threatening allergic reaction.

Decades ago, before there was significant medical research about anaphylaxis, antihistamines – specifically diphenhydramine (or Benadryl®) – were the recommended treatment. That has changed.

“We now know that antihistamines only treat a few minor symptoms associated with anaphylaxis, such as hives, and it takes about 30 or more minutes to take effect, which is far too long to treat an urgent medical condition,” says Martha White, MD, a board-certified allergist in Wheaton, Maryland.

Anybody at risk for anaphylaxis can have a life-threatening allergic reaction – even if previous reactions were mild.

Severe reactions can start out with mild symptoms, and then quickly escalate. On average, fatalities from anaphylaxis have occurred 30 minutes after ingesting a food allergen; it's 15 minutes after bee stings.

Any delay in administering epinephrine greatly increases the chance of hospitalization – and delaying or failing to use it has been associated with fatalities.

Don't Wait, Don't Hesitate

Studies show many parents are hesitant to give their child epinephrine. They often cite fear of traumatizing the child (or themselves) as the primary reason. Or there's some uncertainty because their child has never had what they considered to be a dangerous allergic reaction before.

So the parents use an antihistamine first, thinking it to be a more gentle approach – except antihistamines do not treat the more severe symptoms of anaphylaxis such as mouth, lips or throat swelling, chest tightness, shortness of breath, vomiting, dizziness and loss of consciousness.

It's worth repeating: epinephrine is the first-line treatment for anaphylaxis – not antihistamines. If administered quickly, epinephrine can reverse the life-threatening symptoms.



“I strongly urge using an epinephrine auto-injector as the first treatment for any sign of an allergic reaction,” Dr. White says. “Even if a reaction appears relatively mild, a dose of epinephrine will not harm a patient in any way.”

In allergy emergencies, epinephrine will save lives; Benadryl will not. “And you certainly don't want to wait until the patient loses consciousness or stops breathing to provide lifesaving treatment,” Dr. White says.

ALLERGY MYTH

MYTH: I am allergic to shellfish. Since shellfish contain iodine, that must mean I am also allergic to iodine-based surgical scrubs and radiocontrast solutions used for X-rays and CT scans.

TRUTH: Iodine is not an allergen. In fact, we all have iodine in our bodies – it's in our thyroid hormones and amino acids – and it's essential to our health. There is no cross-reactivity with iodine-based preps or radiocontrast. Some people have had reactions to iodine-containing medical products, but this is likely due to additives, not the iodine.



Epinephrine Auto-Injectors

2018

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Allergy & Asthma Network is a national nonprofit organization dedicated to ending needless death and suffering due to asthma, allergies and related conditions through outreach, education, advocacy and research.

	Auvi-Q®	EpiPen®	Generic Epinephrine Auto-Injector Authorized generic of EpiPen®	Epinephrine Auto-Injector (Impax) Authorized generic of Adrenaclick®
Pediatric Dosage	 0.10 mg for 16.5 - 33 lbs. 0.15 mg for 33 - 66 lbs.	 0.15 mg for 33 - 66 lbs.	 0.15 mg for 33 - 66 lbs.	 0.15 mg for 33 - 66 lbs.
Adult Dosage	 0.3 mg for over 66 lbs.	 0.3 mg for over 66 lbs.	 0.3 mg for over 66 lbs.	 0.3 mg for over 66 lbs.
Storage Temperature	68 to 77 degrees F	68 to 77 degrees F	68 to 77 degrees F	68 to 77 degrees F
Administration	Outer middle of thigh	Outer middle of thigh	Outer middle of thigh	Outer middle of thigh
Hold Time	5 seconds	3 seconds	3 seconds	10 seconds
Does package include a trainer?	Yes	Yes	Yes	No
Twin-packs available?	Yes	Yes	Yes	Yes
Is needle fully retractable or covered inside device after injection?	Yes	Yes	Yes	No
Voice prompts	Yes	No	No	No
Stock School Program	Yes	Yes	No	No
Manufacturer	Kaléo	Mylan	Mylan	Impax Laboratories, Inc.
Website	www.auvi-q.com	www.epipen.com	www.my-generic-epinephrine-auto-injector.com	www.epinephrineautoinject.com
Patient assistance	877-302-8847 	800-395-3376 	800-395-3376 	800-934-6729 

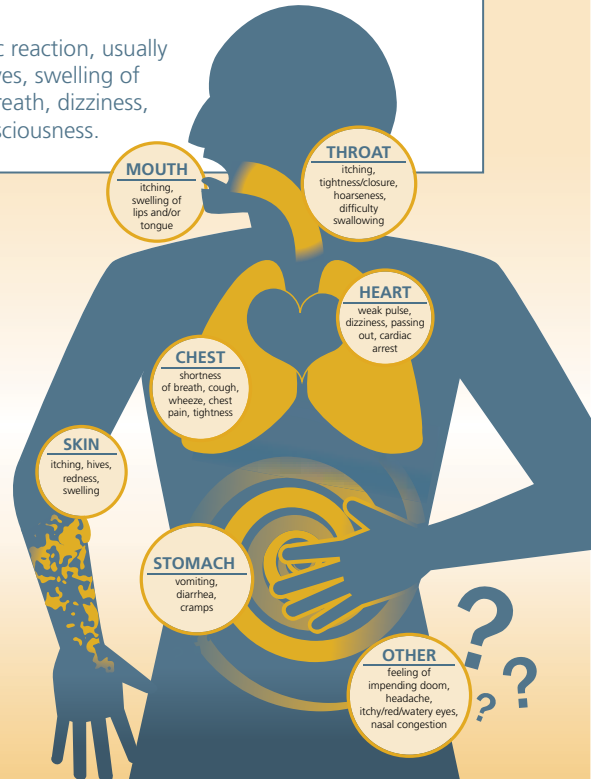


Anaphylaxis is a severe, life-threatening allergic reaction, usually to food, insect venom, medication or latex. Symptoms include: hives, swelling of lips and/or tongue, coughing, wheezing, vomiting, shortness of breath, dizziness, chest tightness, headache, weak pulse, confusion and loss of consciousness.



YOU NEED 2

**ALWAYS CARRY
2 EPINEPHRINE AUTO-INJECTORS**



1st line of treatment = Epinephrine

Why "You Need 2"

15-30% of all anaphylaxis patients experience a 2nd reaction (called a biphasic reaction)



Almost **20%** of children experiencing a food-related anaphylaxis reaction will experience a 2nd reaction



Keep Watching

A **2nd reaction** can occur within **5 to 15 minutes** after the 1st dose is administered.

It can also occur between **8 and 72 hours** after the 1st reaction.

Any delay of treatment = Greater chance for hospitalization + Greater risk for death

Don't delay anaphylaxis treatment!

Sources: • Guidelines for the Diagnosis and Management of Food Allergy in the United States – National Institute of Allergy & Infectious Diseases (NIAID)
• Use of Multiple Doses of Epinephrine in Food-Induced Anaphylaxis in Children – Jarvinen, K.; Sicherer, S.; Sampson, H.; Nowak-Węgrzyn, A. – Journal of Allergy and Clinical Immunology

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Seeing is believing



Does Peanut-Free Equal Certainty?

Since schools began implementing peanut-free policies, questions have emerged about their effectiveness and practicality. Matthew Greenhawt, MD, and Michael Pistiner, MD, two leading food allergy experts, discuss steps schools and parents can take to help protect students with peanut allergies.



Peanut-Free Is Not Risk-Free

By Matthew Greenhawt, MD

The prevalence of food allergy is rising in the United States, stirring public debate on the need for peanut-free policies in schools. Though allergic reactions to peanut can occur (and have occurred) at school, they are unlikely to happen without the child physically ingesting a peanut-containing product.

Peanut-free school policies may not be effective in preventing reactions – no data actually support that nut-free policies do so. In fact, a 2008 University of Michigan study found that nearly 20 percent of 409 reported reactions occurred in a described “nut-free” setting.

More to the point, the risk of reactions occurring at schools is often misunderstood. Studies have shown that:

- Peanut residue is easily cleaned from hands with soap and from surfaces with commercial products.
- Smelling peanut butter does not cause allergic reactions.
- Peanut dust does not become airborne (according to two separate studies published in *The Journal of Allergy and Clinical Immunology*) but may accumulate on surfaces where peanut is eaten regularly.

It's understandable to want to protect a peanut-allergic child at school or other public venue, but the child's age should guide the accommodations, given some are more appropriate for younger children (for example, nut-free classrooms).

Remember, many non-allergic families consider peanut-free policies unfair. Schools must optimize proven strategies such as hand/mouth washing, no sharing of food, and increasing awareness of a child's dietary restrictions.

With better implementation of such strategies and understanding of the actual risk, more mutually acceptable protective policies can be developed.



Matthew Greenhawt, MD, MBA, MSc, is associate professor of pediatrics at the University of Colorado School of Medicine and pediatric allergist and co-director of the Food Challenge Unit at Children's Hospital Colorado.

Avoiding Accidental Exposures At School

By Michael Pistiner, MD

The goal for schools is to prevent children with food allergies from coming into contact with the food they are allergic to – and potentially having a severe allergic reaction.

Simply stating that a school is “peanut free” does not mean the appropriate food allergy management program is in place. Also, these designations can decrease vigilance if adequate training does not occur.

Preventing allergic reactions and supporting children with food allergies require all school staff and all school parents to be educated and mindful of food allergy avoidance and emergency preparedness. School staff responsible for caring for children with food allergies should be trained to identify food allergy reactions and how to use an epinephrine auto-injector. They will need to understand the developmental capabilities of students and ways to avoid exposure to allergens.

Preschool or kindergarten children who often eat their snacks and lunch in the same area where they learn and play may be messy eaters and frequently put their hands and objects in their mouths. It can be a challenge for teachers to prevent cross-contact and potential ingestion of a food allergen. These factors should go into deciding whether or not to restrict certain foods from the classroom.

In schools where older children eat in a cafeteria instead of a classroom, the available resources as well as the developmental age of the kids allow for the implementation of appropriate cleaning strategies to remove food allergens. In those situations, risk of cross-contact and accidental exposure is considerably lower.



Michael Pistiner, MD, MMSc, is a pediatric allergist and Director of Food Allergy Advocacy, Education and Prevention for the Food Allergy Center at MassGeneral Hospital for Children. He is also co-author of “Living Confidently With Food Allergy” and co-creator of AllergyHome.org.



No Bully Zone

It's Good 2 Talk

Jennifer LeBovidge, PhD, pediatric psychologist and allergy specialist at Boston Children's Hospital, discusses how parents can address food allergy bullying with their children:

Q: What are ways parents can ask their child about bullying at school?

A: A good way to start the conversation is to ask whether bullying is something that happens, and what kids do when it happens. Check in on things such as what lunchtime is like at school, and which classmates the child sits with at the lunch table. Or ask about good or bad things that happened at school each day.

Q: What are some proactive steps parents can take?

A: Parents and children can practice language for handling common food allergy questions, such as "Why is your snack different?" It's important to remember most kids are just curious. Role-play to practice assertive – but not aggressive – language children can use to stand up for themselves. For example, a response to, "This ice cream is so good, I bet you wish you could have some," could be, "Why would I want to eat something that is going to make me sick? I'll stick with my food."

Bullying can take many forms. Sometimes it's a subtle remark; other times it's more overt.

In Michigan, a 10-year-old boy with peanut allergy was singled out by classmates and even some teachers as the reason their school banned treats that contain nuts. In Maryland, an 8-year-old boy with milk allergy was taunted by a classmate waving a milk chocolate candy bar wrapper.

Thirty percent of children and teens with food allergies report being bullied due to their condition; the figure rises to 50 percent in grades 6-10, according to the Jaffe Food Allergy Institute at Mount Sinai School of Medicine in New York City.

Bullying harms a child's social development and self-esteem and is linked to underachievement in school, depression and chronic stress, says Ralph "Gene" Cash, PhD, a licensed psychologist and board-certified school psychologist in Fort Lauderdale, Florida.

"While verbal abuse is the most common form of bullying, there are bullies who will deliberately try to expose victims to their food allergen," he says.

See the Signs

Many children don't report bullying because they feel embarrassed, worry about retaliation, or think they can handle it themselves. How do parents recognize when their child is bullied? Signs include:

- Sudden reluctance or fear of going to school
- Unexplained depression or anxiety



Growing Up With Severe Allergies

When and how should children begin taking responsibility for managing a life-threatening allergy? Self-care begins from the moment of diagnosis and is learned in small steps throughout childhood.

Infancy/toddlerhood (0-3 years): Parents/caregivers provide all care, including recognizing symptoms and administering medications.

Self-care skill: learn to cooperate with parents/caregivers.

Preschool age (3-5 years): Parents provide care, helping the child to learn about his or her body and routines of daily life (such as carrying medications).

Self-care skill: tell parents or responsible adults when an allergic reaction occurs and follow their instructions for treatment.

Early elementary school (6-7 years): Parents and adult caregivers (e.g., teachers) help the child navigate separation from parents.

Self-care skill: learn to trust, communicate and cooperate with other caregivers.

Upper elementary school (8-11): As the child focuses on peers and establishing friendships, parents clarify responsibilities outside the home, such as following safety rules and social etiquette.

Self-care skill: recognize symptoms and independently request or use emergency medication appropriately.

Middle school (12-14): Parents provide framework for increased independence and learning life skills, discussing strategies for more complex tasks.

Self-care skill: develop medication routine with parent supervision.

Teens (15-17): Parents assist in making choices about how to avoid exposures and managing symptoms.

Self-care skill: take responsibility for medications (overseen by parents) and taking the lead in managing symptoms.

Older teens (18-19): Parents support teens in practicing complete self-care, while remaining available for guidance or reinforcement.

Self-care skill: demonstrate the ability to independently manage daily care, medication supply and doctor appointments.

Source: National Jewish Health

- Changes in sleep patterns
- Weight loss
- Full lunchbox brought home from school

Talk regularly with your child about bullying but ask in a casual way so it sparks a dialogue. Get involved if you think bullying is occurring. Research shows when parents know their child is being bullied, the child's quality of life is better.

Instill a sense of confidence in your child. Projecting confidence in self-managing food allergies, for example, can help ward off bullying before it starts.

Visit NoAppetiteforBullying.com for more anti-bullying strategies.

School Culture

Schools with strong anti-bullying programs establish a culture of support and respect. Including food allergy education as part of a lesson plan not only increases social awareness but also instills compassion and care for peers.

“When students are presented with scientific information about food allergies, why some people have it and some don’t, why a student carries an epinephrine auto-injector – they understand,” says Carolyn Duff, MS, RN, a school nurse in Columbia, South Carolina and former president of the National Association of School Nurses. “Students are more knowledgeable, compassionate and accepting. They even want to help.”



Easy Access to Epinephrine



Seconds matter with anaphylaxis. That's why it's critical to ensure epinephrine auto-injectors are readily available – everywhere, every day.

SELF-CARRY



50 states guarantee students the right to self-carry and self-administer prescribed epinephrine auto-injectors at school



Spread the word:
Make sure schools and parents know self-carry laws exist.

STOCK EPI IN SCHOOLS

25 - 30%

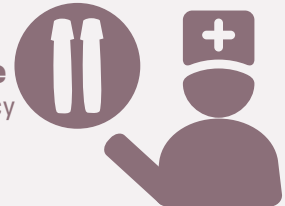
of anaphylaxis reactions at school occur in students previously undiagnosed with life-threatening allergies.



Most states allow or require schools to stock emergency supplies of epinephrine auto-injectors.

Check on your state:

AllergyAsthmaNetwork.org/stock-epinephrine.



Resources for schools to implement stock epinephrine policies

- **Allergy & Asthma Network:**

AllergyAsthmaNetwork.org/outreach/anaphylaxis-community-experts

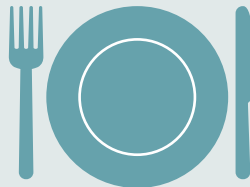
- **National Association of School Nurses:**

www.nasn.org/ToolsResources/FoodAllergyandAnaphylaxis/EpinephrinePoliciesProtocolsandReporting



STOCK EPI IN PUBLIC PLACES

Many states now permit public venues – restaurants, daycare centers, sports arenas and theme parks – to maintain emergency supplies of epinephrine.



Check on your state:

AllergyAsthmaNetwork.org/stock-epinephrine-entity-laws.

Disney World

has epinephrine auto-injectors at all First Aid stations – and even marked their availability on guide maps.





Allergy and Anaphylaxis Emergency Plan

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN®



Child's name: _____ Date of plan: _____

Date of birth: ____/____/____ Age ____ Weight: _____ kg

Child has allergy to _____

Child has asthma. ☐ Yes ☐ No (If yes, higher chance severe reaction)
 Child has had anaphylaxis. ☐ Yes ☐ No
 Child may carry medicine. ☐ Yes ☐ No
 Child may give him/herself medicine. ☐ Yes ☐ No (If child refuses/is unable to self-treat, an adult must give medicine)

Attach
child's
photo

IMPORTANT REMINDER

Anaphylaxis is a potentially life-threatening, severe allergic reaction. If in doubt, give epinephrine.

For Severe Allergy and Anaphylaxis What to look for

If child has ANY of these severe symptoms after eating the food or having a sting, **give epinephrine.**

- Shortness of breath, wheezing, or coughing
- Skin color is pale or has a bluish color
- Weak pulse
- Fainting or dizziness
- Tight or hoarse throat
- Trouble breathing or swallowing
- Swelling of lips or tongue that bother breathing
- Vomiting or diarrhea (if severe or combined with other symptoms)
- Many hives or redness over body
- Feeling of "doom," confusion, altered consciousness, or agitation

☐ **SPECIAL SITUATION:** If this box is checked, child has an extremely severe allergy to an insect sting or the following food(s): _____. Even if child has MILD symptoms after a sting or eating these foods, **give epinephrine.**

Give epinephrine! What to do

1. Inject epinephrine right away! Note time when epinephrine was given.
2. Call 911.
 - Ask for ambulance with epinephrine.
 - Tell rescue squad when epinephrine was given.
3. Stay with child and:
 - Call parents and child's doctor.
 - Give a second dose of epinephrine, if symptoms get worse, continue, or do not get better in 5 minutes.
 - Keep child lying on back. If the child vomits or has trouble breathing, keep child lying on his or her side.
4. Give other medicine, if prescribed. Do not use other medicine in place of epinephrine.
 - Antihistamine
 - Inhaler/bronchodilator

For Mild Allergic Reaction What to look for

If child has had any mild symptoms, **monitor child.**
Symptoms may include:

- Itchy nose, sneezing, itchy mouth
- A few hives
- Mild stomach nausea or discomfort

Monitor child What to do

Stay with child and:

- Watch child closely.
- Give antihistamine (if prescribed).
- Call parents and child's doctor.
- If symptoms of severe allergy/anaphylaxis develop, use epinephrine. (See "For Severe Allergy and Anaphylaxis.")

Medicines/Doses

Epinephrine, intramuscular (list type): _____ Dose: ☐ 0.15 mg ☐ 0.30 mg (weight more than 25 kg)

Antihistamine, by mouth (type and dose): _____

Other (for example, inhaler/bronchodilator if child has asthma): _____

Parent/Guardian Authorization Signature

Date

Physician/HCP Authorization Signature

Date



Websites

Allergy & Asthma Network
AllergyAsthmaNetwork.org

AllergyHome.org
www.AllergyHome.org

American Academy of Allergy, Asthma & Immunology
www.aaaai.org

American College of Allergy, Asthma & Immunology
www.acaai.org

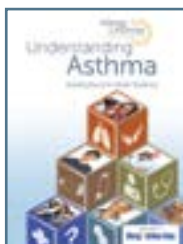
Centers for Disease Control and Prevention
www.cdc.gov/healthyschools/foodallergies/index.htm

Guidelines for the Diagnosis and Management of Food Allergy In the United States
www.niaid.nih.gov/topics/foodallergy

National Association of School Nurses
www.nasn.org/toolsresources/foodallergyandanaphylaxis

St. Louis Children's Hospital Food Allergy Management and Education Manual
www.stlouischildrens.org/health-resources/advocacy-outreach/food-allergy-management-and-education

Publications



Understanding Asthma

A practical, easy-to-understand guide for your journey to better breathing. Signs and symptoms

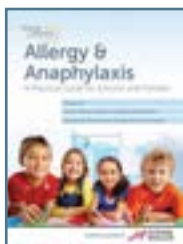
of asthma, inhaler know-how, and more.



Allergy-Safe Dining: A Guide for the Restaurant and Food Service Industry

What restaurant managers, hosts,

cooks and wait staff can do to prevent food and latex allergies – and respond to allergy emergencies.



Allergy & Anaphylaxis: A Practical Guide for Schools and Families

Helps parents, teachers, school nurses and school

administrators develop allergy and anaphylaxis policies and manage food, insect and latex allergies in the school setting.



Living Confidently With Food Allergy

What parents and families need to know to manage food allergies.

Available in English and

Spanish. Download a free copy at www.allergyhome.org.



Living With Latex Allergy

Learn the keys to understanding latex allergy, identifying cross-reactive foods, and how to find alternative products.

FREE — Just pay shipping and handling fees.

AllergyAsthmaNetwork.org

800.878.4403 • info@AllergyAsthmaNetwork.org

Food Allergy Quiz

1. You can have an allergic reaction if you drink out of your friend's water bottle.
2. You should never risk eating something that "may contain" your allergen.
3. Exercising after eating food can increase the severity of an allergic reaction.
4. Benadryl® should be given first for a serious allergic reaction.
5. A child with peanut allergy has a 20 percent chance of outgrowing the allergy.

True False

- | | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
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| <input type="checkbox"/> | <input type="checkbox"/> |

Answers: 1) True – if your friend has recently eaten food containing your allergen and residue remains on the water bottle; 2) True – never take risks with your allergies; 3) True – exercising, having a viral illness, drinking alcohol, or taking drugs such as antacids, aspirin and NSAIDs may increase severity of an acute reaction to food; 4) False – epinephrine auto-injectors are the first line of treatment – always; 5) True – according to American Academy of Allergy, Asthma & Immunology; for tree nut allergy, it is 9 percent.

Anaphylaxis is a life-threatening allergic reaction that affects more than one organ system.

Allergens that can set off anaphylaxis

FOOD



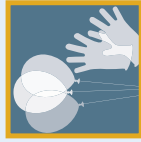
- Peanuts
- Tree nuts: almonds, pecans, cashews, walnuts
- Shellfish
- Cow's milk products
- Hen's eggs
- Fish
- Soy
- Wheat

VENOM



- Yellow jackets
- Wasps and hornets
- Honeybees
- Fire ants
- Spiders

LATEX



- Balloons
- Rubber gloves
- Condoms
- Elastic bands (i.e., physical therapy bands/rubber bands)
- Dental dams

Foods with cross-reactive proteins to natural rubber: banana, avocado, chestnut and kiwi

MEDICATION



- Penicillin
- Aspirin, ibuprofen and other NSAID pain relievers

Common symptoms



Epi Everywhere! Every Day! Right Away!

RECOGNIZE THE SEVERITY



Anaphylaxis is life-threatening, unpredictable, presents in multiple ways and can progress quickly. If symptoms appear refer to your Emergency Care/Action Plan.

USE EPINEPHRINE IMMEDIATELY



Epinephrine is the **first line** of treatment to stop the progression of anaphylaxis. Use your epinephrine auto-injector at the **first sign of symptoms** – don't wait to see what happens!

CALL 911



Always call for emergency medical assistance and go to the emergency room for follow-up observation and treatment.

CARRY TWO AUTO-INJECTORS



Keep two epinephrine auto-injectors on hand, in case symptoms recur before emergency medical assistance is available. Up to 35% of people will require more than one dose.

FOLLOW UP



Consult a board-certified allergist for accurate diagnosis and prevention/treatment plan.



Breathe Better Together!

Allergy & Asthma Network engages, educates and empowers families to win over allergies and asthma.

Since 1985, it's been our mission to end needless death and suffering due to asthma, allergies and related conditions.

Join at no cost to you by visiting [*AllergyAsthmaNetwork.org/join*](http://AllergyAsthmaNetwork.org/join).



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