Allergy & Asthma NETWORK

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 501(c)(3) organization.

Join Allergy & Asthma Network today, as we work to help individuals and families breathe better together.
AllergyAsthmaNetwork.org/join

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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

INSIDE:

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 – 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.

Average time to respiratory or cardiac arrest due to anaphylaxis:

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

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 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. A second reaction called biphasic can suddenly appear and may be more intense than initial reactions.

You've Got Questions…

Right about now you may be asking yourself, "How do I know when a reaction is life-threatening and when it is not?" 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 32 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 200,000 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.

Dear Diary

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 doctor. 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

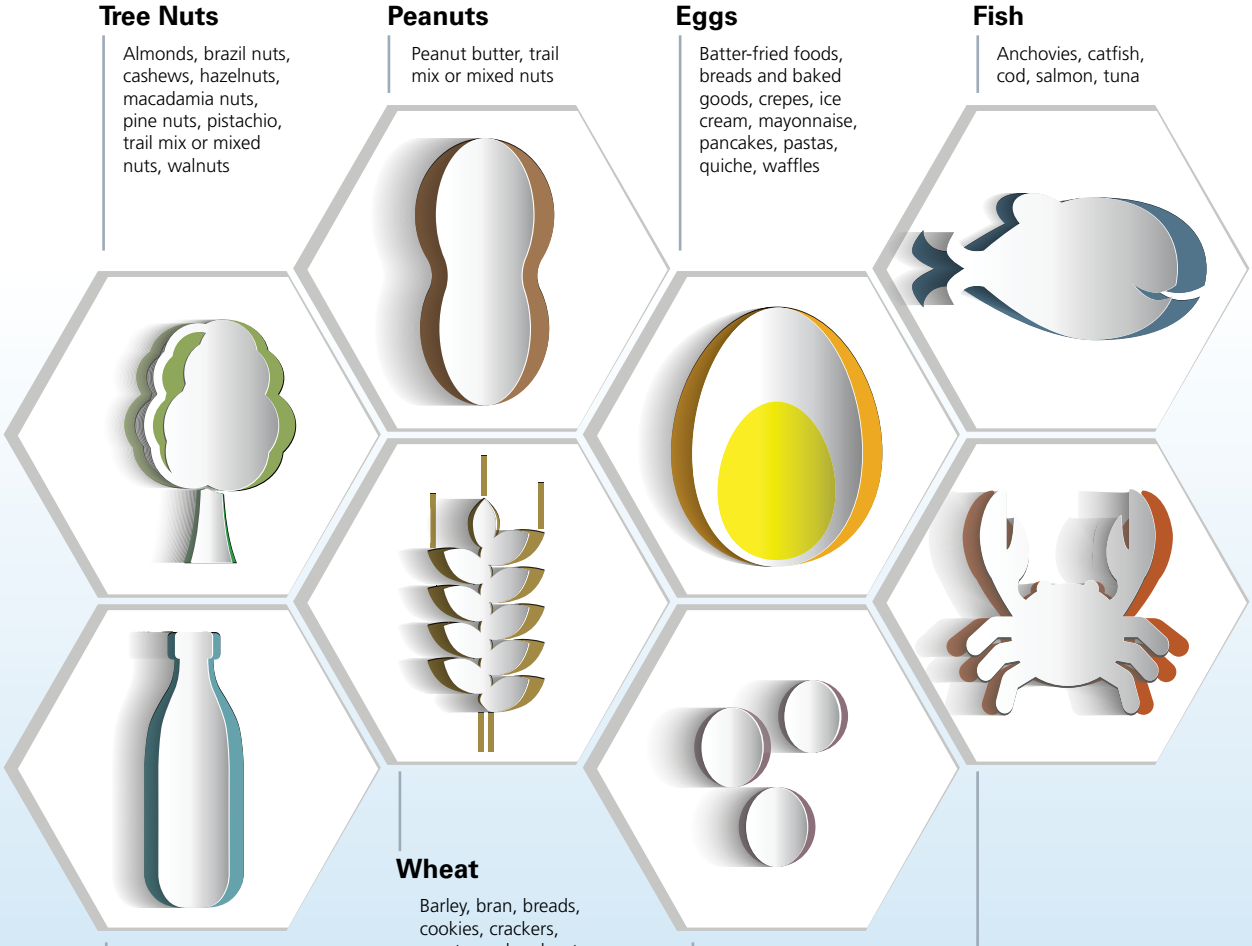
Peanut butter, trail mix or mixed nuts

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

Smart Dining

Eating out is an American pastime – even for the approximately 32 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."

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*.

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.

What to Do

- Wash hands in soap and water before preparing a meal. Commercial hand wipes are also effective; studies show hand sanitizers are 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, ask that your food be prepared in a separate cooking area with clean and separate pans and utensils. 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.

Safe Travel

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.

Call the airline ahead of time or visit its website to find out policies for in-flight meals and snacks that may food allergens. Information on airline websites can usually be found under "Special Travel Needs."

People with peanut or tree nut allergies should take the following steps before a flight:

- Inform the flight crew of your allergy and request accommodations such as an allergen-free meal. Avoiding airline food may be the safest option. You may also request a buffer zone in which no peanut or tree nut product is sold or served; and that passengers be asked to refrain from eating them.
- Wipe down seats and tray tables when arriving at your seat. 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 and make sure they are easily accessible during the flight.

Some airlines will allow travelers to preboard to clean seating areas. When requesting this, print out the airline's food allergy policy or the information you receive from customer service and present it to the gate and flight crew.

Power Over Peanut

What You Need to Know About Peanut Allergy Immunotherapy

Stephanie Polk's 10-year-old daughter Olivia has successfully avoided peanut since she was diagnosed with a peanut allergy at 2 years of age. As Olivia approaches middle school in Alexandria, Virginia, Stephanie worries the potential for exposure could increase in a new environment.

Has she considered exploring peanut allergy immunotherapy, a treatment option that would desensitize Olivia to peanut?

"It's in the back of my mind," she says. "I have some anxiety about exposing Olivia to her food allergen. We'll wait to see how the school handles it and talk with teachers and the school nurse about the level of risk.

"The only way she would be exposed to peanut is if she were to eat someone else's snack or there's a school party with food. Olivia is pretty smart about being careful what she eats."

The decision to consider peanut allergy immunotherapy is often a highly personal one for families. It's not a cure; rather, it's designed to reduce the frequency and severity of allergic reactions, including life-threatening anaphylaxis, following an accidental exposure to peanut.

Available Peanut Allergy Treatments

Oral immunotherapy (OIT) involves taking a small amount of peanut powder one of two ways:

- Palforzia® (manufactured by Aimmune Therapeutics) is a capsule containing a measured dose of peanut powder that is administered under the supervision of a board-certified allergist.

  At this time it's only for children between the ages of 4 to 17. Patients are given gradually increasing amounts of the powder until a tolerance level is reached; then the patient stays on that dose indefinitely.

  Palforzia® is the first peanut allergy treatment approved by the U.S. Food and Drug Administration (FDA).

- An allergist who specializes in peanut allergy desensitization carefully prepares and administers a non-pharmaceutical grade peanut product using specific protocols.

  While these commercial products are not FDA-approved as a food allergy treatment, they have shown to benefit thousands of patients.

Important: do NOT try oral immunotherapy on your own. It should only be conducted under a doctor's supervision.

Other Treatments Not Yet Available

Epicutaneous immunotherapy (EPIT) involves an adhesive patch attached to the skin containing a tiny dose of peanut protein. Viaskin™ Peanut (manufactured by DBV Technologies), commonly called the peanut patch, works by desensitizing patients to peanut and increasing tolerance. It is still in clinical trials and DBV Technologies must submit to FDA new data that supports the patch's effectiveness.

Sublingual immunotherapy (SLIT) involves placing drops of a peanut protein extract under the tongue for 2 minutes before swallowing. A 2019 study showed promise in children ages 1 to 11, but more research is needed to prove it is safe and effective.

Biologic medications such as omalizumab and etokimab are also being studied as potential peanut allergy treatments.

Oral mucosal immunotherapy is a toothpaste-based peanut therapy that is being studied. It desensitizes the immune system by introducing tiny amounts of the allergen.

Getting Started

How to determine if peanut allergy oral immunotherapy is right for you or your child? Allergists work with you to make sure it's a shared decision that is evidence-based, not fear-based.

Several factors play a role in the decision:

- How have you or your child fared with strict avoidance of peanut?
- What is the risk of exposure?
- How severe are the allergic reactions to peanut?

Trust Your Sources

When considering OIT, it's important to make sure you're accessing trustworthy sources of information, says Douglas Jones, MD, a board-certified allergist and food allergy specialist from the Tanner Clinic in Layton, Utah.

"With food allergy, there is a lot of information out there – and probably just as much misinformation," Dr. Jones says. "Then you add food allergy treatment options such as immunotherapy on top of that, and sometimes you may think: Where do I go? How do I even make decisions about this?

"Ask yourself: Are my sources of information credible and trustworthy? What online resources am I using and what websites am I going to? What social media outlets do I visit and are they trustworthy? Getting good solid information is the first step."

OIT should be done by allergists with expertise in food allergy and with experience in managing patients through every stage of immunotherapy.

Evaluate the Pros and Cons

Many people don't necessarily want to eat their allergen; they simply want protection against accidental exposure.

Talk with your allergist about the pros and cons of peanut allergy immunotherapy and determine whether the benefits outweigh the risks, including any potential side effects. Discuss the differences in undergoing OIT with Palforzia or an office-prepared product.

For many, avoidance of peanut may be most appropriate and preferred. Just keep two epinephrine auto-injectors close by in case of an accidental exposure and have an anaphylaxis emergency plan in place.

For others, OIT is usually recommended if accidental exposures to peanut result in severe allergic reactions of if they want to consume peanuts regularly as part of their diet.

"What are your goals with immunotherapy? Why do you want to pursue this? When you focus in on that why, all the processes, protocols and procedures become clear to you and your decisions start to fall into place," Dr. Jones says.

If you're uncertain even after consulting with an allergist, ask to connect with a patient or family who recently underwent peanut allergy immunotherapy. Another perspective may help with your decision-making.

ALLERGY MYTH

MYTH: **It is safe to accept a kiss from someone who has just eaten one of your food allergens.**

TRUTH: Allergic reactions from kissing can occur when a food allergen remains in your partner's saliva. Studies show saliva can hold an allergen for hours. The risk of a severe reaction from kissing is very small, however. If your partner has consumed one of your food allergens, it's best to hold off on 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.

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

ALLERGY MYTH

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

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

by switching to latex-safe gloves and medical products and supplies.

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.

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.

Navigating Restaurants

When kitchen staff use 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.

In addition, 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 allergy and the potential consequences if you are exposed to latex.

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.

Allergic to Exercise?

Exercise-induced anaphylaxis is very rare, but it can be a serious, potentially life-threatening condition. It happens most often to people who are exercising at a good clip – the heart rate is fast and the lungs are supercharging muscles with oxygen.

Symptoms may include a wheezing or difficulty breathing, extreme fatigue, a skin rash, gut-wrenching stomach pain and diarrhea.

If you experience these symptoms, consult a board-certified allergist for testing to see why your body is reacting to exercise in this way.

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 exercise-related symptoms, report the food you ate and what 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 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. For severe symptoms, use an epinephrine auto-injector and call 911.

ALLERGY MYTH

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

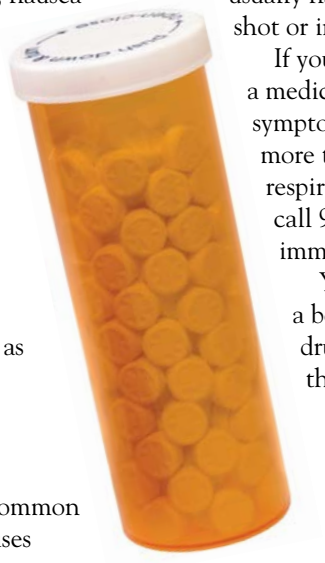
TRUTH: Gluten is not a food allergen; it is a protein composite found in wheat, barley and rye. People who experience gastrointestinal problems from eating gluten are experiencing an intolerance, not an allergy. An intolerance is a digestive issue while an allergy is an immune system response. Gluten-free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

When Medicine Makes You Sick

Do certain medications make your skin bloom with hives, cause light-headedness, nausea or stomach cramps, or 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) such as 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 after taking a medication, call your doctor to discuss your symptoms. If the reaction is severe and involves more than one body organ – a skin rash, respiratory problems and/or digestive issues – call 911 or go to the emergency department immediately.

You'll need to schedule an appointment with a board-certified allergist and get tested for a drug allergy. If the diagnosis is confirmed, ask the allergist for the following:

- a prescription for two epinephrine auto-injectors
- a list of safe medications
- an Allergy and Anaphylaxis Emergency Plan for preventing and treating future reactions

Just the Facts on Vaccine Allergies

Vaccines are effective in preventing life-threatening illnesses. They boost the body's natural immune response to diseases caused by viruses and bacteria.

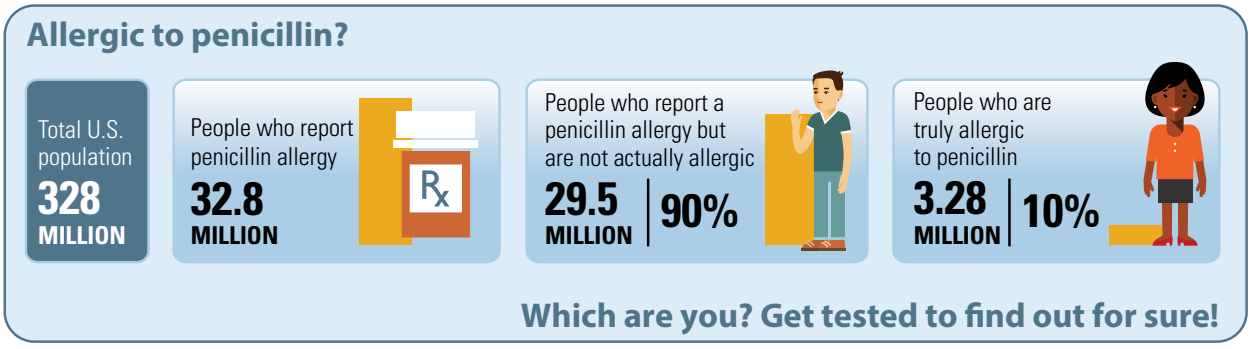
People can be allergic to certain ingredients in vaccines. Gelatin and egg are two often mentioned. However, the amount of each in a vaccine is so small that is unlikely to cause an allergic reaction. Cases of anaphylaxis are very rare.

Allergic reactions can include hives, swelling, cough, wheezing and difficulty breathing. Some may experience a drop in blood pressure. The first line of treatment for a severe reaction is epinephrine.

Some people are reporting symptoms of anaphylaxis to COVID-19 vaccines. These cases are also very rare – early reports indicate it's 2 to 5 cases per 1 million vaccine doses given. It should not deter anyone from seeking out the COVID-19 vaccine.

Ask your doctor or search online for vaccine ingredients. Then talk with your doctor if you have a history of allergic reactions to an ingredient in the vaccine. Certain COVID-19 vaccines contain polyethylene glycol (PEG), a compound that helps the vaccine access cells. Allergic reactions to PEG can happen, but again, they are very rare.

People who receive a vaccination may experience swelling or pain at the site of the injection, fatigue, or muscle or joint pain. These are not allergic reactions. They are normal side effects to the vaccine as the body builds protection.



The Truth About Penicillin Allergy

… And Why it's Important to Get Tested

Ahh, germs. We've gotten to know them so well. Thanks to the coronavirus, we are all much more knowledgeable about bacteria, infections and how to avoid them.

It's inevitable, though. Many of us will come down with strep throat, sinus infections, ear infections and maybe even bacterial pneumonia, and we will require antibiotics, including penicillin-based antibiotics such as amoxicillin, ampicillin and piperacillin.

What to do if you're allergic to penicillin?

Hold on a second!

Are you absolutely sure you're allergic to penicillin? How do you know for sure? Were you ever tested? No?

You could have penicillin allergy listed on your medical records and it could be completely wrong.

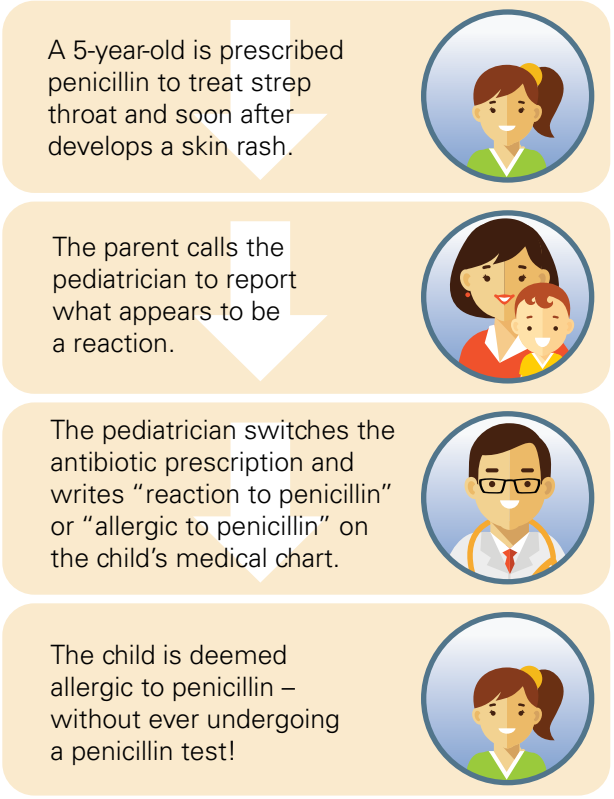
How Mislabeling Happens

Penicillin allergy is the most commonly reported drug allergy in the United States. About 10% of the population report a penicillin allergy, but according to the American College of Allergy, Asthma & Immunology, more than 90% of those who think they are allergic to penicillin are actually not.

"That means at least 90% of people reporting a penicillin allergy are able to tolerate the antibiotic – because they likely never had a true penicillin allergy in the first place," says Allison Ramsey, MD, a board-certified allergist and immunologist with Rochester Regional Health in Western New York.

Oftentimes the label of penicillin allergy is applied during childhood and carried on into adulthood.

Here's how the mislabeling can happen:



Many times the reaction the parent reported are not consistent with true allergy, according to research published in the Annals of Allergy, Asthma & Immunology.

Treating Bacterial Infections

Penicillin is the preferred antibiotic for bacterial

infections because it treats the infection directly.

When you're reported as having a penicillin allergy, your doctor may prescribe you nonpenicillin antibiotics to treat the bacterial infection. Nonpenicillin antibiotics may be less effective and involve more side effects and increased costs, Dr. Ramsey says.

Plus, you are increasing the risk of what's called antimicrobial resistance. This occurs when bacteria changes in ways that make medications used to treat them ineffective. Using nonpenicillin antibiotics that treat a wide variety of illnesses could lead to drug-resistant bacteria – called "superbugs" – that increases risk of illness for everyone.

The most well-known "superbug" is methicillin-resistant Staphylococcus aureus (MRSA). Often found in hospitals, MRSA developed as a result of decades of often unnecessary antibiotic use. Simply put, germs that survived antibiotic treatment learned to resist others.

So as the season for bacterial infections arrives, you'll want penicillin to be available to you for the infections that may come your way this fall and winter. If you think you or your child is allergic to penicillin, it's important to get tested to find out for sure.

"If it's determined you or your child are not truly allergic, then you can gain access to this important group of antibiotics," Dr. Ramsey says.

Just think – you can free yourself of the burden of carrying a penicillin allergy label everywhere you go while also not enabling a potential "superbug." A win-win.

Testing is fast, accurate and safe

It's simple. In a doctor's office or hospital, you undergo a skin prick test in which the needle barely penetrates the surface of the skin. A raised, reddish wheal at the sight of the prick indicates a positive test for an allergy. No wheal, rash or hives? You're probably not allergic after all.

Some doctors may follow up a negative skin prick test with an oral challenge – usually a full dose of liquid penicillin. The oral challenge serves two purposes: 1) confirm your negative test, and 2) ease the fear factor over taking penicillin should you not be allergic. Again, this should only be conducted in a doctor's office or hospital.

Here's perhaps the best part of undergoing a penicillin allergy test: you get the results the same day. The process takes about 2 to 3 hours, including the time needed for doctors to monitor you for a reaction.

If it's confirmed you or your child are not allergic to penicillin, there's still one more step: remove the "allergic to penicillin" label on medical records.

Share the news far and wide. Tell your doctors, your dentist, pharmacies and schools and provide documents of the test results if necessary. Tell your family and friends.

A Note on Infections and Antibiotics

Antibiotics are only prescribed to treat bacterial infections, not viral infections such as COVID-19 or flu. However, if a virus weakens your immune system, common bacteria such as staph and strep can gain a foothold, possibly in the respiratory tract. This can lead to sinus infections, ear infections or pneumonia that would then require antibiotic treatment.

Allergy Immunotherapy and Anaphylaxis

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

When undergoing allergy shots, your allergist may require you to wait in the office 30 minutes after the shot to be sure that if you have a reaction, it can be treated safely and quickly with epinephrine.

With 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 epinephrine auto-injectors and make sure they're close by when you take the tablets at home.

ALLERGY MYTH

MYTH: **People with egg allergy should NOT get the flu vaccine.**

TRUTH: The flu vaccine is grown in chicken eggs, so it contains trace amounts of egg allergen. Research shows it is safe for children and adults with egg allergy to receive the flu shot – even if they have a history of severe allergic reactions to eggs. If you are allergic to egg, talk with your doctor before getting the flu shot. You may need to be monitored in the doctor's office for 30 minutes after the injection.

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. If symptoms are severe it could be anaphylaxis. This is a medical emergency that requires immediate treatment.

Emergency Medication

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.

Follow-Up Care

Report reactions to your primary care doctor and board-certified allergist. If you do not have an allergist, ask for a referral. An allergist can conduct testing to determine which insects you are allergic to and offer venom immunotherapy as a potential long-term solution.

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

The Buzz on Insect Venom Immunotherapy

You were stung by a honeybee and had a severe allergic reaction. Fortunately, you recovered. What happens next? Do you have to be afraid of bees for the rest of your life?

Talk with a board-certified allergist about insect venom immunotherapy. It's a series of allergy shots that gradually build tolerance to the venom if you're ever stung again.

"Insect venom immunotherapy essentially cures the allergy," says allergist David Golden MD, of John Hopkins School of Medicine in Baltimore. "Almost 100% 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.

"Someone who has had a severe allergic reaction to an insect doesn't have to ever have another."

First Things First: Get Tested

Skin testing for insect venom allergy can confirm your allergy. Most allergists have skin tests for honeybees, wasps, yellow jackets, hornets and fire ants. Blood tests are also available.

Allergy testing is only done for people with a history of anaphylaxis due to insect venom. Some allergists may delay testing for a month after a sting to ensure accurate results, Dr. Golden says.

Insect venom allergy does not typically run in families, so there's no need to do preventive testing for family members, even for children.

The Next Step: Immunotherapy

Insect venom immunotherapy is done in two stages.

The first stage builds immunity with shots that contain gradually increasing concentrations of the allergen. It's usually administered once a week for 8-20 weeks depending on the type of vaccine. At the end of the first stage, you reach the maximum dose and you're 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 insect venom," 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.

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?

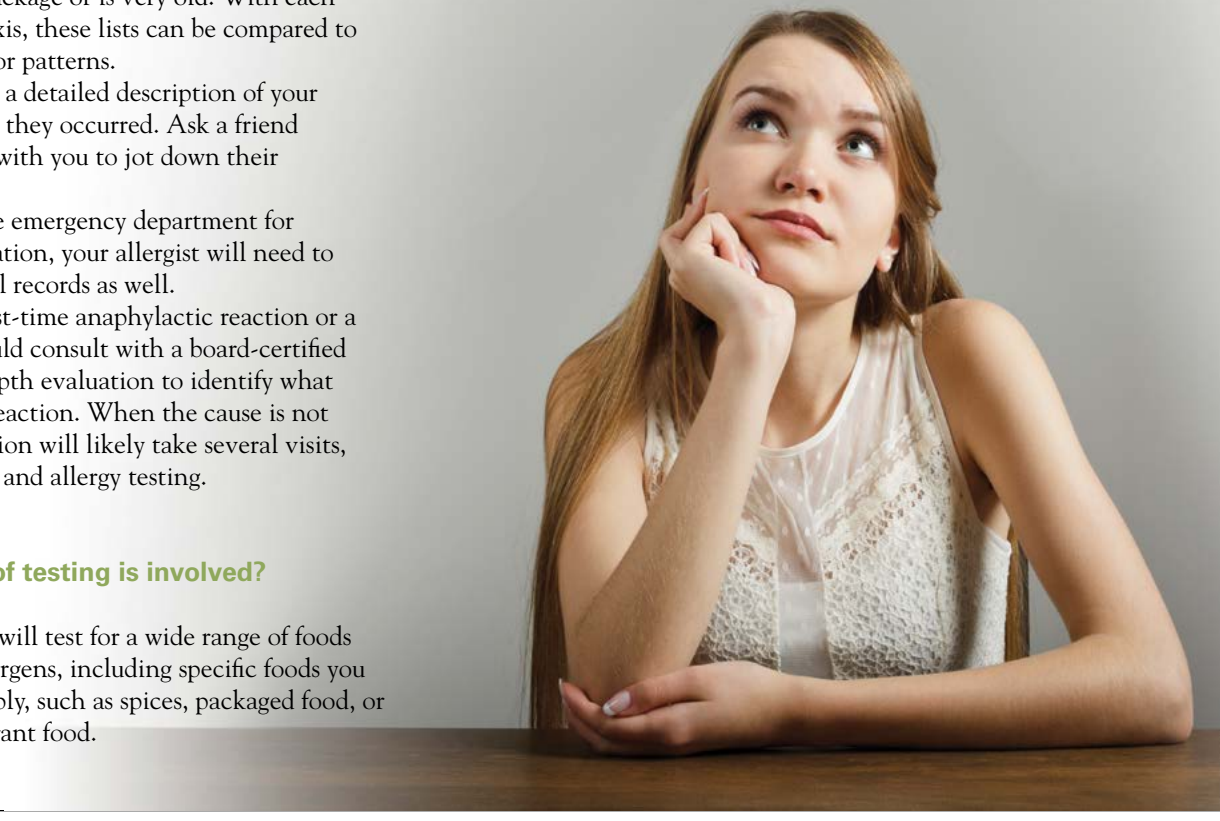
A: Your allergist will test for a wide range of foods and other allergens, including specific foods you may be asked to supply, such as spices, packaged food, or even leftover restaurant food.

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.



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 stop anaphylaxis. It 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 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.

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.

Epinephrine is delivered primarily as an auto-injector. It contains a pre-measured dose, with two different strengths available for different ages and body weights. In hospitals and medical clinics, epinephrine may also be delivered by IV. In addition, a one-spray, two-dose epinephrine nasal spray is under consideration by the U.S. Food and Drug Administration (FDA).

Step-by-Step Instructions

Epinephrine auto-injectors are easy to use. They come with clear instructions. The device's needle sits protected inside the device until you inject it.

The following instructions are for EpiPen® products. Check package instructions for instructions on using other devices. Manufacturer 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.

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. 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.

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

"I strongly urge using an epinephrine auto-injector as the first treatment for any sign of a severe allergic reaction," Dr. White says. "Even if the reaction does not appear life-threatening, a dose of epinephrine will not harm a patient in any way."

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

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 perhaps 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.

ALLERGY MYTH

MYTH: **I am allergic to shellfish. Since shellfish contain iodine, that must mean I am allergic to iodine.**

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. Some people have had reactions to iodine-containing medical products, but this is likely due to additives, not the iodine.

Allergy & Asthma NETWORK

American College of Allergy, Asthma & Immunology

Epinephrine Treatments 2021

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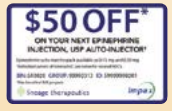
Allergy & Asthma Network is a national nonprofit organization dedicated to ending needless death and suffering due to asthma, allergies and related conditions through outreach, education, advocacy and research.

	Brand Devices			Generic Devices		
	Auvi-Q®	**EpiPen®**	**SYMJEPI™**	**Epinephrine Auto-Injector (Viatris)**	**Epinephrine Auto-Injector (Impax)**	**Epinephrine Auto-Injector (Teva)**
				Authorized generic of EpiPen®	Authorized generic of Adrenaclick®	
Type	Auto-Injector	Auto-Injector	Pre-filled syringe	Auto-Injector	Auto-Injector	Auto-Injector
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.	 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.	 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	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	Outer middle of thigh	Outer middle of thigh
Hold Time	2 seconds	3 seconds	2 seconds	3 seconds	10 seconds	3 seconds
Does package include a trainer?	Yes	Yes	No	Yes	No	Yes
Twin-packs available?	Yes	Yes	Yes	Yes	Yes	Yes
Is needle fully retractable or covered inside device after injection?	Yes	Yes	Yes	Yes	No	Yes
Voice prompts	Yes	No	No	No	No	No
Stock School Program	Yes	Yes	No	No	No	No
Manufacturer	Kaléo	Mylan	Adamis Pharmaceuticals	Mylan	Impax Laboratories, Inc.	Teva Pharmaceuticals
Website	*www.auvi-q.com*	*www.epipen.com*	*www.symjepi.com*	*www.epipen.com*	*www.epinephrineautoinject.com*	*www.tevaepinephrine.com*
Patient assistance	877-302-8847 	800-395-3376 	877-253-4017 	800-395-3376 	800-934-6729 	833-210-5451 

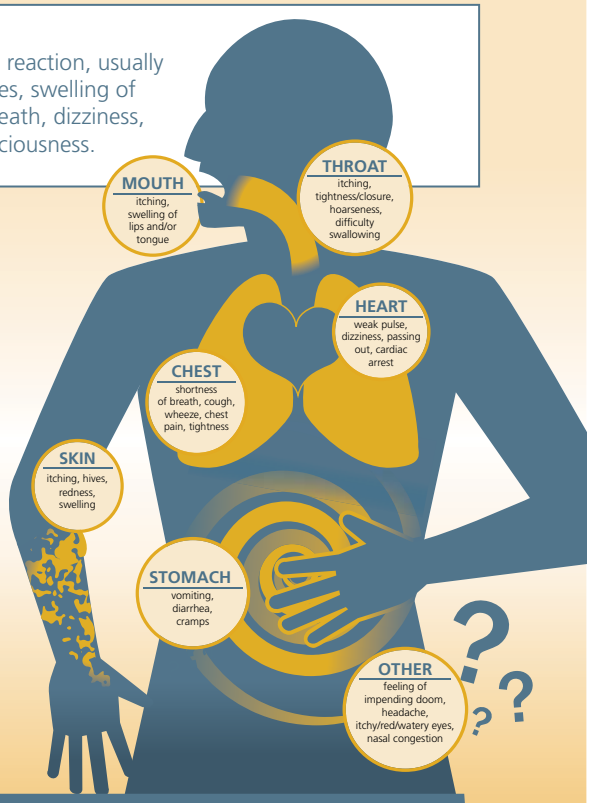
Reviewed by Stanley Fineman, MD, Wes Sublett, MD and Dennis Williams, PharmD

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.

Allergy & Asthma NETWORK

YOU NEED 2

ALWAYS CARRY 2 EPINEPHRINE AUTO-INJECTORS

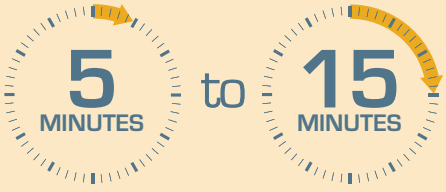


1st line of treatment = Epinephrine

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 Epineprhine in Food-Induced Anaphylaxis in Children – Jarvinen, K.; Sicherer, S.; Sampson, H.; Nowak-Wegrzyn, A. – Journal of Allergy and Clinical Immunology

Keeping Children Safe at School

Most schools today are very familiar with food allergies and managing food-allergic children, whether it's in the classroom, cafeteria, auditorium or playground.

Schools should have a clear, concise and all-inclusive policy to address food allergies. This policy needs to be consistent with federal and state laws, nursing practice standards and established safe practices.

The four major components of food allergy management at school include:

1. **Planning and coordination of care:** the school nurse serves as care coordinator, often "holding all of the pieces together" between home, school and the medical home.

2. **Educating staff, students and parents:** the school nurse distributes evidence-based information to school personnel and families; and teaches them how to find safe and reliable information to guide student care.

3. **Providing a safe environment:** school staff fully understands how to create and maintain an allergen-safe environment.

4. **Preparing for a prompt emergency response:** school staff is ready at a moment's notice to manage a food allergy emergency, including treatment if needed.

When schools and families work together, school can be a safe and welcoming place for a child with a food allergy.

Does Peanut-Free Equal Certainty?

By Michael Pistiner, MD

The goal for schools is to prevent children with food allergies from coming into contact with the food to which they are allergic – 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, designating a school as peanut-free can decrease vigilance if training does not occur.

Preventing severe allergic reactions and supporting children with food allergies require school staff to be educated and mindful of food allergy avoidance and emergency preparedness.

Staff responsible for caring for children with food allergies should be trained to identify allergic reactions and know how to use an epinephrine auto-injector. They should consider ways to avoid exposure to food allergens while understanding the developmental capabilities of students.

Preschool or kindergarten children who eat their snacks and lunch in the same area where they learn and play can be messy eaters. Oftentimes they 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 in the classroom.

In schools where older children eat in a cafeteria instead of a classroom, the developmental age of the students allows for 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 at Harvard Vanguard Medical Associates in Boston. He is the 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.

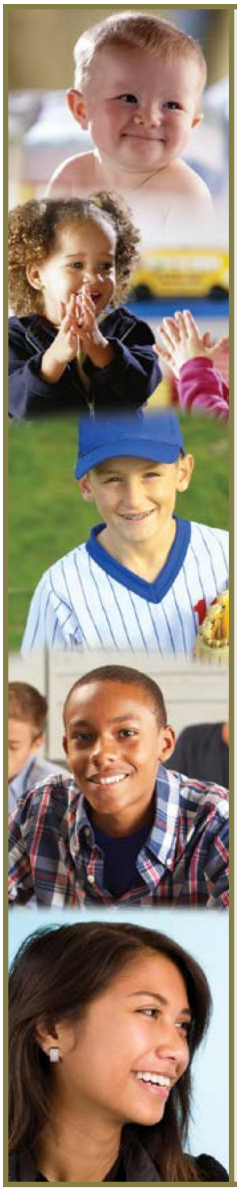
Bullying harms a child's social development and self-esteem and is linked to underachievement in school, depression and chronic stress, says Ralph "Gene" Cash, PhD, a licensed psychologist and board-certified school psychologist in Fort Lauderdale, Florida.

"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.

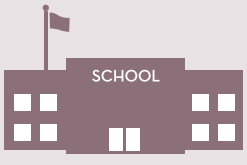
SELF-CARRY

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

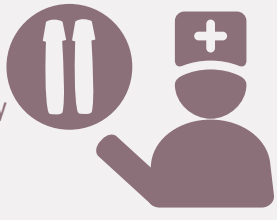
Spread the word:
Make sure schools and parents know self-carry laws exist.

STOCK EPI IN SCHOOLS

25 - 30%
of anaphylaxis reactions at school occur in students previously undiagnosed with life-threatening allergies.



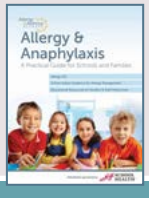
Most states allow or require schools to stock emergency supplies of epinephrine auto-injectors.
Check on your state:
AllergyAsthmaNetwork.org



Resources for schools to implement stock epinephrine policies

- **Allergy & Asthma Network:**
  allergyasthmanetwork.org/health-a-z/allergies-and-asthma-at-school/

- **Allergy & Anaphylaxis: A Practical Guide for Schools and Families**
  Free download at:
  AllergyAsthmaNetwork.org



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

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 _____

Attach child's photo

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)

IMPORTANT REMINDER
Anaphylaxis ia 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

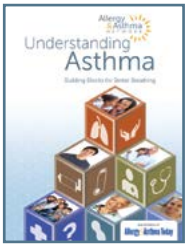
Centers for Disease Control and Prevention
www.cdc.gov/healthyschools/foodallergies/index.htm

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

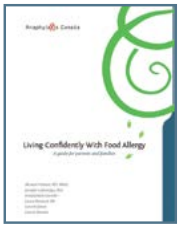
National Association of School Nurses
www.nasn.org

St. Louis Children's Hospital Food Allergy Management and Education Manual
www.stlouischildrens.org/fame

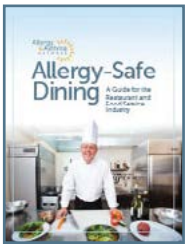
Publications



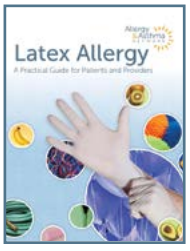
Understanding Asthma
A practical, easy-to-understand guide for your journey to better breathing. Signs and symptoms of asthma, inhaler know-how, and more.



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*.



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.



Latex Allergy: A Practical Guide for Patients and Providers
Learn the keys to understanding latex allergy, identifying cross-reactive foods, and how to find alternative products.

FREE DOWNLOADS
AllergyAsthmaNetwork.org
800.878.4403 • *info@AllergyAsthmaNetwork.org*

Food Allergy Quiz

	True	False
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.	❑	❑

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.

Allergy & Asthma NETWORK

Anaphylaxis At a Glance

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

Anaphylaxis Community Experts

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

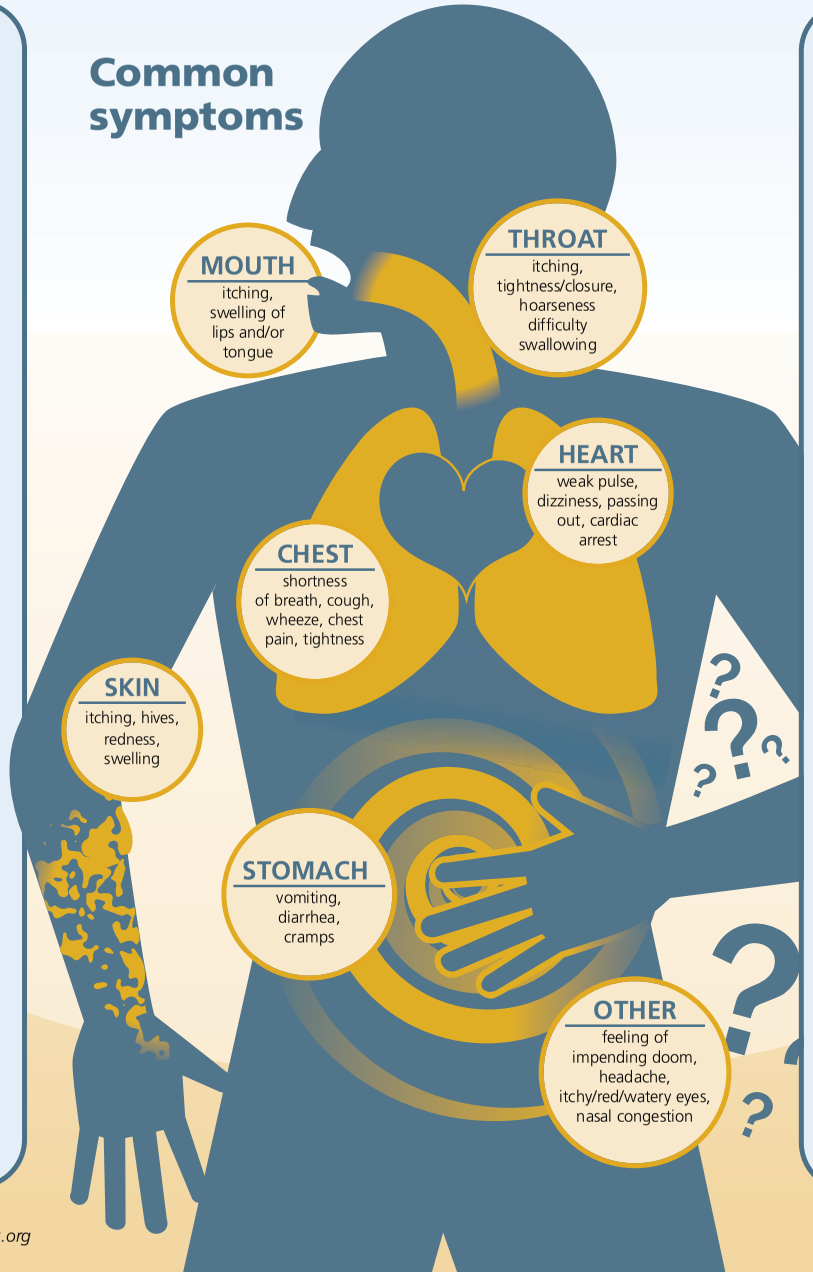
- Balloons
- Rubber gloves
- Condoms
- Elastic bands (i.e., physical therapy bands/rubber bands)
- Dental dams

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

911

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

CARRY TWO AUTO-INJECTORS

2

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.***

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