

Allergies and Anaphylaxis

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Allergy Definition

Allergies are among the most common chronic conditions worldwide. If you have an allergy, your immune system mistakes an otherwise harmless substance as an invader. This substance is called an allergen. The immune system overreacts to the allergen by producing Immunoglobulin E (IgE) antibodies. These antibodies travel to cells that release histamine and other chemicals, causing an allergic reaction.

In some individuals, allergies can also trigger symptoms of asthma. And persons with asthma may be more susceptible to allergens.

A number of different allergens are responsible for allergic reactions. The most common include:

- Pollen
- Dust
- Food
- Insect stings
- Animal dander

- Mold
 - Medications/Drugs
 - Latex
- Occasionally, some people have allergy-like reactions to hot or cold temperatures, sunlight, or other environmental triggers

Anaphylaxis is a life threatening allergic reaction.

Allergy Symptoms

Mild allergy symptoms may include conjunctivitis (pink eye), rhinitis (stuffy nose, runny nose, sneezing, and post-nasal drip) and urticaria (hives). Symptoms of an allergic or anaphylactic reaction may come from any system in the body.

Anaphylaxis Symptoms - usually occur within minutes of exposure to an allergen. Sometimes, however, anaphylaxis may occur a half-hour or longer after exposure. Symptoms may include: skin reactions, including hives along with itching, flushed or pale skin (almost always present with anaphylaxis), a feeling of warmth; the sensation of a lump in the throat; constriction of the airways and a swollen tongue or throat, which can cause wheezing and trouble breathing; a feeling of impending doom; a weak and rapid pulse; nausea, vomiting or diarrhea; dizziness or fainting.

Incidence

The incidence of allergies and allergic reactions has been on a steady increase in the industrialized world for at least the past 50 years. And worldwide, sensitization rates to one or more common allergens among school children are currently approaching 40%-50%. A more extensive description of the incidence can be found at <http://www.aaaai.org/about-the-aaaai/newsroom/allergy-statistics.aspx>

According to the [Food Allergy Research and Education](#) (F.A.R.E.) 15 million people have **food allergies**. Nearly 6 million or 8% of children have food allergies with young children affected the most. Boys appear to develop food allergies more than girls. Food allergies may be a trigger for or associated with other allergic conditions, such as atopic dermatitis (eczema) and eosinophilic gastrointestinal diseases.

The most common food allergens are milk, egg, wheat, soy, peanuts, tree nuts (e.g., walnuts, almonds, cashews, pistachios, and pecans), fish and shellfish. Some allergies are out-grown. Most likely to be outgrown are allergies to milk, egg, wheat, and soy. On the other hand, allergies to peanuts, tree nuts, fish, or shellfish are generally lifelong allergies.

According to a study released in 2008 by the Centers for Disease Control and Prevention, about an 18% increase in food allergy was seen between 1997 and 2007. The prevalence of peanut allergy among children appears to have tripled between 1997 and 2008.

Treatment & Medications

The best treatment is avoidance of the allergen. There are a number of medications that can be used to prevent reactions and treat allergies depending on the type and severity of the allergy. These may include antihistamines, decongestants, corticosteroids, and other medications.

A severe allergic reaction (anaphylaxis) needs to be treated with epinephrine, which can be life- saving when given right away. If epinephrine is administered at school, call 911 and make sure the student (or adult) is transported to ensure appropriate follow-up which may include treatment with additional epinephrine and observation for a biphasic reaction.

Auto-injector epinephrine is the preferred method of epinephrine delivery at school. Auto-injector epinephrine is an emergency injectable medication that may be given by unlicensed school staff after appropriate training and following the recommendations for medication administration in the California Department of Education's (CDE) Program Advisory on Medication Administration (May 2005).

[CA Education Code 49423](#)

CA Ed. Code also 49423 allows for students with a severe allergy to self-carry auto-injector epinephrine. In addition to physician and parent authorization, this requires a statement of release of liability to the school district. It is best practice to have an epinephrine auto-injector back-up in the health office in the event that the student's medication is not available during an anaphylactic reaction.

Food Allergies at School

Unfortunately, deaths related to food allergy anaphylaxis continue to occur at school (January 2012, Virginia). Failure to promptly (i.e., within minutes) treat food anaphylaxis with epinephrine is a risk factor for fatalities. Teenagers and young adults with food allergies are at the highest risk of fatal food-induced anaphylaxis. According to FAAN, studies have indicated that 16-18% of school-age children who have food allergies have had a reaction in school. In an estimated 25% of the cases, the reaction occurs before the student has been diagnosed with food allergy.

Therefore, it is imperative for schools to develop policies to handle medical emergencies, and to take preventative measures to avoid a student's exposure to a known food allergen. Physicians, families, and school staff should work together to formulate reasonable and practical plans that will keep students with food allergies safe (Food Allergy Research and Education (FARE) <http://www.foodallergy.org/>)

Requirement for Epinephrine Auto-injectors

[Education Code 49414](#)

As of January 1, 2015 county offices of education, public and charter schools are required to have standing orders for auto-injector epinephrine and volunteer staff trained on its administration thereby making this medication available for those students or staff who may have an undiagnosed allergy and have an anaphylactic reaction at school. Each private elementary and secondary school in the state may voluntarily determine whether or not to make emergency epinephrine auto-injectors and trained personnel available at its school. In making this determination, a school shall evaluate the emergency medical response time to the school and determine whether initiating emergency medical services is an acceptable alternative to epinephrine auto-injectors and trained personnel.

Current resources for obtaining free epinephrine auto-injectors (programs may end at end at any time):

[EpiPens for Schools](#)

[Kaleo/Auvi Q](#) (elementary schools only) – Look for *Q Your School*

School Food Allergy Plans & Resources

A comprehensive plan includes having policies and protocols in place for:

- the education of all members of a school community regarding the seriousness of food allergies and of a potential anaphylactic reaction
- preventing exposure
- student specific Food Allergy Action Plans
- training and documentation
- rescue medication orders and protocols
- medication storage, access and administration
- cafeteria protocols
- emergency response protocols
- and more

There are many resources available to schools and school districts to assist them in developing a comprehensive school plan.

Training Resources:

1. The online *C.A.R.E. course* is available for free at <http://allergyready.com/> . This course is designed to help teachers, administrators and other school personnel prevent and manage potentially life-threatening allergic reactions. The course includes visuals, guides, case studies, and more.

The **C.A.R.E.** acronym stands for:

- C** Comprehend the food allergy medical basics
- A** Avoid food allergens
- R** Recognize a reaction
- E** Enact emergency protocol

2. The online [Keeping Students Safe and Included](#) course is available for free from Food Allergy Research & Education (F.A.R.E).

It is online training course designed to help school staff and administrators become better prepared to manage students with food allergies and respond to food allergy emergencies. Take this course to learn more about managing food allergies in schools and how to best protect and keep students included.

Course Objectives

- Improve understanding of food allergies and allergic reactions.
 - Identify ways that schools can create a safer and more inclusive environment for students with food allergies.
 - Learn how school staff can enact a food allergy management plan or policy.
3. Also available from Food Allergy Research & Education (F.A.R.E). – *Recognizing & Responding to Anaphylaxis* <https://www.foodallergy.org/education-awareness/training/recognizing-responding-to-anaphylaxis>

Plan Resources:

The National School Boards Association's (NSBA): *Safe at School and Ready to Learn: A Comprehensive Policy Guide for Protecting Students with Life-threatening Food Allergies* was published in 2012. https://cdn-files.nsba.org/s3fs-public/reports/Safe-at-School-and-Ready-to-Learn.pdf?COh1FORdHmb4gcA_4KszRU4F0syFuVut

Both the Food Allergy Research and Education (FARE) and the National Association of School Nurses (NASN) offer a wealth of resources in the development of a comprehensive school plan.

Food Allergy Research and Education (FARE)
<http://www.foodallergy.org/managing-food-allergies/at-school>

National Association of School Nurses
<http://www.nasn.org/ToolsResources/FoodAllergyandAnaphylaxis>

References/Resources

American Academy of Allergy, Asthma & Immunology
<https://www.aaaai.org/conditions-and-treatments/allergies>

American College of Allergy, Asthma & Immunology
<https://acaai.org/>

Centers for Disease Control & Prevention
<http://www.cdc.gov/nchs/fastats/allergies.htm>

National Library of Medicine
<https://www.nlm.nih.gov/medlineplus/allergy.html>

Food Allergy and Anaphylaxis Network
<https://www.foodallergy.org/facts-and-stats>

Legal References

California Department of Education Program Advisory on Medication Administration
<http://www.cde.ca.gov/ls/he/hn/documents/medadvisory.pdf>

[Education Code 49423](#) – Prescribed auto-injector epinephrine

[Education Code 49414](#) – Requires emergency epinephrine auto-injectors at school (county offices of education, public and charter schools/optional for private schools)

CA Codes may be retrieved here: <http://leginfo.legislature.ca.gov/faces/codes.xhtml>