5-2022

Know the Signs of an Allergic Reaction: Anaphylaxis

Sarah R. Remillard
Grand Valley State University

Food Allergies & Anaphylaxis

Identifying allergic reactions and responding to anaphylaxis

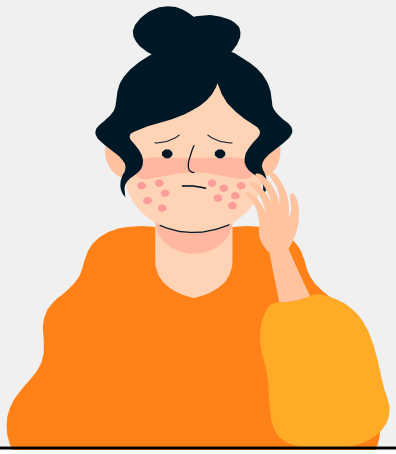
1

What is a food allergy?

"An adverse health effect arising from a specific **immune response** that occurs reproducibly on exposure to a given food."

National Institute of Allergy and Infectious Disease

Anaphylaxis is a severe, life-threatening complication of a food allergy, mediated by an immune response.



2

How Common Are Food Allergies?

19%
of students with allergies have had a reaction at school

9%
of children under 18 have a food allergy

25%
of first time allergic reactions occur in schools

40%
of food allergic children have a history of a severe allergic reaction

3

Common Allergens

- Cow's milk/dairy
- Peanuts
- Shellfish
- Egg
- Wheat
- Soy
- Tree nuts
- Fish
- Sesame

4

What Happens in the Body During an Allergic Reaction?

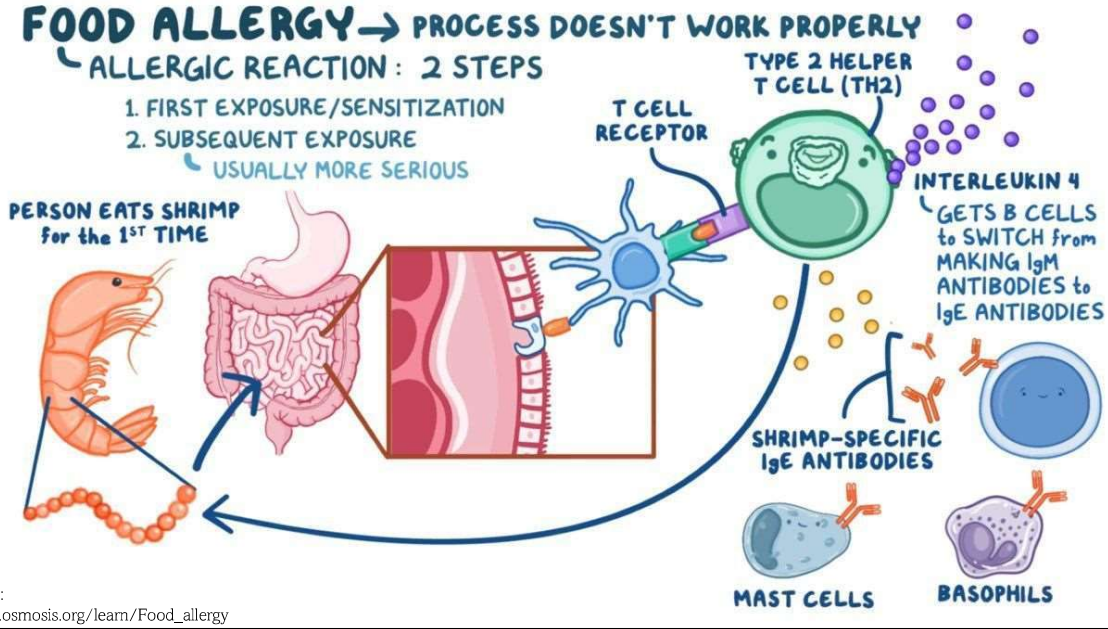


Image source:
https://www.osmosis.org/learn/Food_allergy

5

Symptoms of Anaphylaxis

Dizziness
Headaches and a drop in blood pressure

Wheezing
Difficulty breathing or wheezing

Abdominal Pain
Cramps and vomiting

Runny Nose
A runny nose and itchy eyes may be present

Skin Rashes
Itchy, red, hives present on contact with an allergen

Difficulty Swallowing
Swelling in the throat makes swallowing or drinking difficult

6

What is Epinephrine?

Treats Anaphylaxis

Epinephrine is a first line medication to halt severe allergic reactions.

Underused

Epinephrine is underused in cases of anaphylaxis.

Safe

There are no contraindications for epinephrine if an allergic reaction is suspected.

Relieves Symptoms

Epinephrine opens the airway and increases blood pressure.

Short Acting

Epinephrine may only last for 15 minutes. Seek medical care

Portable

People with food allergies can carry an autoinjector on their person. Schools may stock unassigned epinephrine.

7

Common Epinephrine Injectors

Image source: https://www.npr.org/sections/health-shots/2016/10/26/499425541/an-alternative-to-the-epipen-is-coming-back-to-drugstores

8

1 PREPARE

Remove the EpiPen® or EpiPen Jr® Auto-Injector from the clear carrier tube.
Flip open the yellow cap of your EpiPen® or the green cap of your EpiPen Jr® carrier tube. Tip and slide the auto-injector out of the carrier tube.

Hold the auto-injector in your fist with the orange tip pointing downward.
Blue to the sky, orange to the thigh™.

With your other hand, remove the blue safety release by pulling straight up without bending or twisting it.

NEVER-SEE-NEEDLE® helps with protection. Protects against needle exposure before and after use.

NOTE:
- The needle comes out of the orange tip.
- To avoid an accidental injection, never put your thumb, fingers or hand over the orange tip. If an accidental injection happens, get medical help right away.

2 ADMINISTER

If you are administering EpiPen® or EpiPen Jr® to a young child, hold the leg firmly in place while administering an injection.

Place the orange tip against the middle of the outer thigh (upper leg) at a right angle (perpendicular) to the thigh.

Swing and push the auto-injector firmly until it "clicks." The click signals that the injection has started.

Hold firmly in place for 3 seconds (count slowly 1, 2, 3).

Remove the auto-injector from the thigh. The orange tip will extend to cover the needle. If the needle is still visible, do not attempt to reuse it.

Massage the injection area for 10 seconds.

3 GET EMERGENCY MEDICAL HELP RIGHT AWAY

You may need further medical attention.
If symptoms continue or recur, you may need to use a second EpiPen® or EpiPen Jr® Auto-Injector.

INDICATIONS

EpiPen® and EpiPen Jr® Auto-Injectors are for the emergency treatment of life-threatening allergic reactions (anaphylaxis) caused by allergens, exercise, or unknown triggers; and for people who are at increased risk for these reactions. EpiPen® and EpiPen Jr® are intended for immediate administration as emergency supportive therapy only. Seek immediate emergency medical help right away.

Mylan Speciality L.P. (2016). *How to use EpiPen autoinjector.* https://www.med.unc.edu/pediatrics/cccp/wp-content/uploads/sites/1156/gravity_forms/1-188e5632d99d8f770a150fd48b72fb22/2021/02/How_to_Use_EpiPen_Autoinjector.pdf

9

"Epinephrine First, Epinephrine Fast"

1 Recognize Symptoms
Severe symptoms include wheezing, difficulty swallowing, and dizziness.

2 Administer Epinephrine
Follow the instructions on the autoinjector.

3 Get Help
Get help and call 911

4 Go to the Hospital
After epinephrine is given, still proceed to the hospital

10

How Do I Find Allergens in Food?

- Food labels must indicate common allergens by name.
- Sesame may be excluded until January 1st, 2023.
- Key words:
  - "May contain"
  - "Made on equipment with"
  - "processed in a facility that also processes…"

https://www.foodallergy.org/resources/how-read-food-label

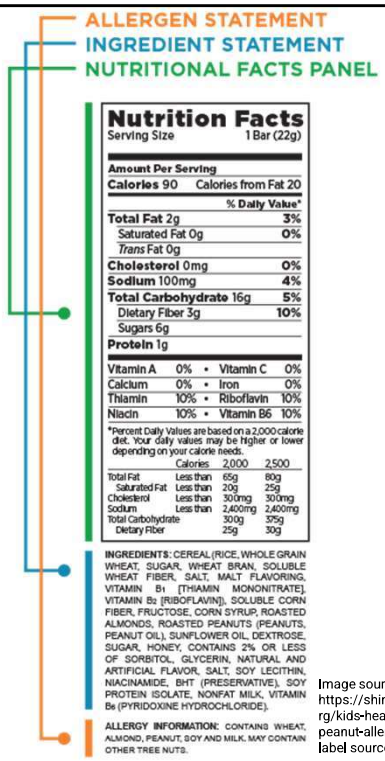


Image source: https://shine365.marshfieldclinic.org/kids-health/understanding-peanut-allergy-food-labels/ food label source

11

What Can I Do to Help Someone with Food Allergies?

Wash your hands

Wash your hands after eating to prevent contamination of commonly touched surfaces.

Clean surfaces

Wiping down surfaces cleans remaining food particles off the surface and prevents accidental exposure to an allergen through touch.

Do not share food

You may not know if your food contains an allergen that could make your friend or classmate sick.

Read food labels

Food labels will identify what allergens are in packaged food.

Be an advocate

Learn about food allergies to help your friends avoid life threatening reactions. Do not pressure them into trying foods they may be allergic to.

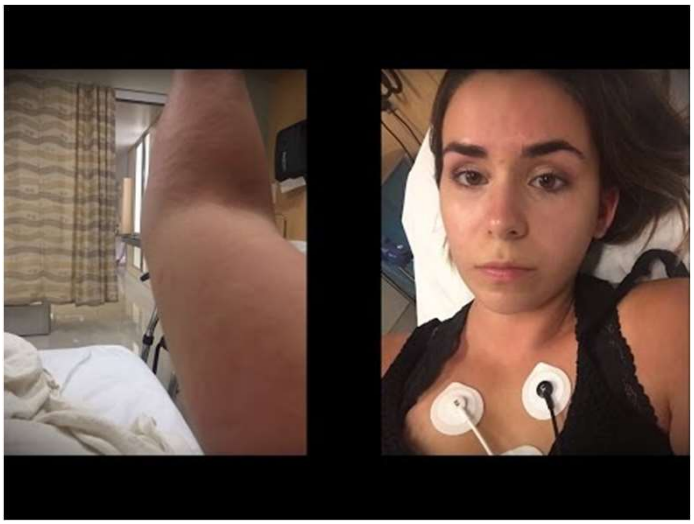
12

Myths and Facts

https://www.youtube.com/watch?v=civyA2P3Cs4&t=1s

13

A Wakeup Call - Heather's Story of Anaphylaxis



https://www.youtube.com/watch?v=hyxqEvtr1Mo

14

Additional Resources for High Schools and Staff

Voluntary Guidelines for Managing Food Allergies In Schools and Early Care and Education Programs from the CDC

Anaphylaxis Action Plan from the American Academy of Allergy, Asthma, & Immunology

Peer Education Video for high school students

Food Allergy Information from Food Allergy Research and Education (FARE)

CDC Poster About How to Respond to Anaphylaxis

15

References

Bettcher, C.M., Rockwell, P.G., Ravikumar, R. (2020). Managing food allergy in children: An evidence-based update. *The Journal of Family Practice, 69*(7), 336-343. https://doi.org/10.12788/jfp.

CFAAR. (2016, August 15). High school students talk: Food allergy [Video]. YouTube. https://www.youtube.com/watch?v=sXMuOW3Fv8

Chooniedass, R., Temple, B., & Becker, A. (2017). Epinephrine use for anaphylaxis: Too seldom, too late current practices and guidelines in health care. *Annals of Allergy, Asthma, & Immunology,119*(2), 108-110. https://doi.org/10.1016/j.anai.2017.06.004

FARE. (2016, April 20). *A wakeup call: Heather's story of anaphylaxis* [Video]. YouTube. https://www.youtube.com/watch?v=hvxqEvtr1Mo

Food Allergy Research & Education. (2022). *How to read a food label.* https://www.foodallergy.org/resources/how-read-food-label

Greenhawt, M., Shaker, M., Stukus, D. R., Fleischer, D. M., Hourihane, J., Tang, M., Abrams, E. M., Wang, J., Bingemann, T. A., Chan, E. S., Lieberman, J., Sampson, H. A., Bock, S. A., Young, M. C., Waserman, S., & Mack, D. P. (2020). Managing food allergy in schools during the COVID-19 pandemic. *The Journal of Allergy and Clinical Immunology. In practice*, *8*(9), 2845–2850. https://doi.org/10.1016/j.jaip.2020.07.016

Greenhawt, M., Wallace, D., Sublett, J. W., Maughan, E., Tanner, A., Kelley, K. J., Fineman, S., White, M., Cash, G., Anderson, C., Schoessler, S., Gupta, R., & Pistiner, M. (2018). Current trends in food allergy-induced anaphylaxis management at school. *Annals of Allergy, Asthma & Immunology: Official Publication of the American College of Allergy, Asthma, & Immunology, 121*(2), 174–178. https://doi.org/10.1016/j.anai.2018.04.015

Jiang, J., Gallagher, J.L., Szkodon, J.W., Syed, M., Gobin, K.S., Gupta, R. S., & Bilaver, L.A. (2019). The development and evaluation of peer food allergy education videos for school-age youth. *Annals of allergy, asthma, & immunology, 123*(1), 107-108. https://doi.org/10.1016/j.anai.2019.04.002.

National Center for Chronic Disease Prevention and Health Promotion. (2013). *Voluntary guidelines for managing food allergies in schools and early care and education programs*. Centers for Disease Control and Prevention. https://www.cdc.gov/healthyschools/foodallergies/pdf/20_316712-A_FA_guide_508tag.pdf

16

References

Neupert, K., Cherian, S., & Varshney, P. (2019). Epinephrine use in Austin independent school district after implementation of unassigned epinephrine. *Journal of Allergy and Clinical Immunology.in Practice, 7*(5), 1650-1652.e4. http://dx.doi.org/10.1016/j.jaip.2018.10.050

Mylan Specialty L.P. (2016). *How to use EpiPen autoinjector*. https://www.med.unc.edu/pediatrics/cccp/wp-content/uploads/sites/1156/gravity_forms/1-188e5632d99d8f770a150fd48b72fb22/2021/02/How_to_Use_EpiPen_Autoinjector.pdf

Osmosis. (2016, June 20). *Type 1 hypersensitivity (IgE-mediated hypersensitivity): Causes, symptoms, pathology* [Video]. YouTube. https://www.youtube.com/watch?v=2tmw9x2Ot_Q&t=144s

Pouessel, G., Turner, P. J., Worm, M., Cardona, V., Deschildre, A., Beaudouin, E., Renaudin, J. M., Demoly, P., & Tanno, L. K. (2018). Food-induced fatal anaphylaxis: From epidemiological data to general prevention strategies. *Clinical and Experimental Allergy: Journal of the British Society for Allergy and Clinical Immunology, 48*(12), 1584–1593. https://doi.org/10.1111/cea.13287

Science Insider. (2021, November 14). *Allergists debunk 11 food allergy myths: Debunked* [Video]. YouTube. https://www.youtube.com/watch?v=civyA2P3Cs4&t=1s

Yamamoto-Hanada, K., Honda, T., Kurihara, J., Ishitsuka, K., Futamura, M., & Ohya, Y. (2016). Food allergy education program at an elementary school: A pilot study. *Annals of allergy, Asthma & Immunology : Official Publication of the American College of Allergy, Asthma, & Immunology*, *117*(3), 318–319. https://doi.org/10.1016/j.anai.2016.06.018

Quach, L. L., & John, R. M. (2018). Psychosocial impact of growing up with food allergies. *The Journal for Nurse Practitioners, 14*(6), 477-483. https://doi.org/10.1016/j.nurpra.2018.03.017

Yue, D., Ciccolini, A., Avilla, E., & Waserman, S. (2018). Food allergy and anaphylaxis. *Journal of Asthma and Allergy*, *11*, 111–120. https://doi.org/10.2147/JAA.S162456

17

THANK YOU FOR YOUR ATTENTION

Do you have any questions?

Presentation by Sarah Remillard,
Grand Valley State Student Nurse

18

KNOW THE SIGNS OF AN ALLERGIC REACTION:

ANAPHYLAXIS

HIVES, SWOLLEN FACE AND TONGUE

RUNNY NOSE

WHEEZING OR COUGH, DIZZINESS

ABDOMINAL PAIN OR VOMITING

DIFFICULTY SWALLOWING

Detailed first aid from ASCIA

Anaphylaxis information from FARE

1. Recognize these symptoms as signs of anaphylaxis, a life-threatening reaction. Have the person sit or lay down.
2. Administer epinephrine into the outer thigh following instructions on the autoinjector. Epinephrine is safe to use even if you are not certain it is a severe food allergy.
3. Call 911 and go to the emergency room. The person should be seen by a medical professional.