



Preparing for Anaphylactic Reactions

IN SEVERELY ALLERGIC CHILDREN

By Jacqueline Eghrari-Sabet, MD

ABSTRACT The incidence of severe allergies, especially to food, has increased dramatically in the United States. The number of children who are allergic to peanuts has more than doubled in the past five years. Severe allergies often cause anaphylaxis, which has a wide range of symptoms, including tightness in the chest, difficulty breathing and swallowing, itchy mouth and skin, nausea, hives, and fainting, and can cause death. Preparation and acting quickly in an emergency situation is key for affected children.

Treating Anaphylaxis

For children with severe allergies, the most commonly prescribed treatment after exposure is epinephrine, a life-saving and fast-acting medication to be used at the onset of anaphylaxis. It is delivered by an automated injection and begins working immediately to reverse the symptoms of the reaction. Children who have had anaphylaxis should always carry an epinephrine auto-injector (such as Twinject® or EpiPen®) or have quick and easy access to it. It is crucial; this is the first line of treatment. Antihistamines (such as Benadryl®) can help with mild, non-threatening allergic reactions; in some cases, though, they might mask or delay the symptoms of a life-threatening reaction.

If a child has been diagnosed with a food allergy, it is, per se, severe: every child with a food allergy is at risk for anaphylaxis. It is important to know that if a child has experienced milder symptoms in the past, e.g., hives, it is possible the child will have more serious reactions in the future.

Never hesitate to use an epinephrine auto-injector as soon as any symptoms of anaphylaxis occur. The sooner it's used, the better off the patient will be. Data show that delay in use of epinephrine is a principal contributor to patient mortality. When anaphylaxis occurs, the patient should still receive emergency care after using an epinephrine auto-injector, even if the symptoms subside; patients need further monitoring after every reaction in case of a delayed or secondary reaction.

Some children are now using a Food Allergy Action Plan, which details desired treatment by the child's parents and primary physician; a template is available at www.foodallergy.org. It is important to discuss the plan with parents, students, and the primary physician to ensure that the importance of epinephrine use is agreed upon. My professional recommendation is to use epinephrine first and then call 911, in all cases.

Having Two Doses of Epinephrine

Some anaphylactic reactions are so severe that a single dose of epinephrine is not enough. However, only 16 percent of patients carry a second dose of epinephrine. The exact amount of epinephrine needed to reverse a given anaphylaxis episode is unknown, but it has been shown that one in three people who have an anaphylactic reaction will require a second dose of epinephrine within as short a period as 10 minutes, long before they can get to an emergency room or doctor.

In my practice, I regularly prescribe that two doses of epinephrine be available to severely allergic patients in the form of either one Twinject or two EpiPens. Twinject is interesting because it contains two doses of epinephrine in one device. It comes in a hard case that is compact, with a clip to encourage people to have it with them at all times. Twinject requires little force to administer the first dose, lessening patient apprehension, and it has a thin needle. The device is clearly labeled with step-by-step directions.

Advising Parents and School Personnel

School nurses are part of the core team of school personnel who play a vital role in establishing a prevention and treatment plan. As the health practitioner on site, it is important to encourage all relevant staff members to be aware of the student's Food Allergy Action Plan (see sample on page 16) and be able to recognize the symptoms of a reaction. The following ideas may help to ensure the effectiveness of the plan:

- Do a practice run of the Food Allergy Action Plan with the student and associated personnel, such as teachers, aides, and cafeteria staff.
- Be certain everyone is aware of the medication's location—whether it is kept in the Health Office or with students who are allowed to carry their own medication.
- Identify individuals who are trained to administer emergency medications, in accordance with State Nursing and Good Samaritan Laws.
- Revisit policies and the Food Allergy Action Plan with parents, student, and physician after a reaction has occurred.

Summary

School nurses are an integral part of allergic reaction preparedness. Quick recognition and early treatment of anaphylaxis are the best ways to protect allergic individuals. Anaphylaxis prevention requires preparation for all involved parties and collaboration among them. 🍵

REFERENCES

Food Allergy Network (2007). *School Guidelines for Managing Students with Food Allergies* < <http://www.foodallergy.org/school/SchoolGuidelines.pdf> >

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ABOUT THE AUTHOR

Jacqueline Eghrari-Sabet, MD is the founder of Family Asthma & Allergy Care in Washington, D.C. She has been named a Washingtonian Top Doctor in the field of Adult and Pediatric Allergy Immunology and top Pediatrician by The Consumer Research Council of America. She is board certified in both Allergy-Immunology and Pediatrics, and as part of her commitment to continuing education has recently been re-certified in both these fields. Dr. Eghrari is a paid consultant and a member of the advisory board for Verus Pharmaceuticals.

Food Allergy Action Plan

Student's

Name: _____ D.O.B: _____ Teacher: _____

Place
Child's
Picture
Here

ALLERGY TO: _____

Asthmatic Yes* ☐ No ☐ *Higher risk for severe reaction

◆ STEP 1: TREATMENT ◆

<u>Symptoms:</u>		<u>Give Checked Medication**:</u> <small>** (To be determined by physician authorizing treatment)</small>	
▪	If a food allergen has been ingested, but <i>no symptoms</i> :	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	Mouth Itching, tingling, or swelling of lips, tongue, mouth	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	Skin Hives, itchy rash, swelling of the face or extremities	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	Gut Nausea, abdominal cramps, vomiting, diarrhea	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	Throat† Tightening of throat, hoarseness, hacking cough	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	Lung† Shortness of breath, repetitive coughing, wheezing	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	Heart† Weak or thready pulse, low blood pressure, fainting, pale, blueness	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	Other† _____	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine
▪	If reaction is progressing (several of the above areas affected), give:	<input type="checkbox"/> Epinephrine	<input type="checkbox"/> Antihistamine

† Potentially life-threatening. The severity of symptoms can quickly change.

DOSAGE

Epinephrine: inject intramuscularly (circle one) EpiPen® EpiPen® Jr. Twinject® 0.3 mg Twinject® 0.15 mg
(see reverse side for instructions)

Antihistamine: give _____
medication/dose/route

Other: give _____
medication/dose/route

IMPORTANT: Asthma inhalers and/or antihistamines cannot be depended on to replace epinephrine in anaphylaxis.

◆ STEP 2: EMERGENCY CALLS ◆

1. Call 911 (or Rescue Squad: _____). State that an allergic reaction has been treated, and additional epinephrine may be needed.

2. Dr. _____ Phone Number: _____

3. Parent _____ Phone Number(s) _____

4. Emergency contacts:
Name/Relationship Phone Number(s)

a. _____ 1.) _____ 2.) _____

b. _____ 1.) _____ 2.) _____

EVEN IF PARENT/GUARDIAN CANNOT BE REACHED, DO NOT HESITATE TO MEDICATE OR TAKE CHILD TO MEDICAL FACILITY!

Parent/Guardian's Signature _____ Date _____

Doctor's Signature _____ Date _____

(Required)

TRAINED STAFF MEMBERS

1. _____

Room _____

2. _____

Room _____

3. _____

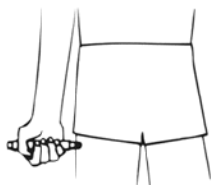
Room _____

EpiPen® and EpiPen® Jr. Directions

- Pull off gray activation cap.



- Hold black tip near outer thigh (always apply to thigh).



- Swing and jab firmly into outer thigh until Auto-Injector mechanism functions. Hold in place and count to 10. Remove the EpiPen® unit and massage the injection area for 10 seconds.

Twinject® 0.3 mg and Twinject® 0.15 mg Directions



- Remove caps labeled “1” and “2.”
- Place rounded tip against outer thigh, press down hard until needle penetrates. Hold for 10 seconds, then remove.



SECOND DOSE ADMINISTRATION:

If symptoms don't improve after 10 minutes, administer second dose:

- Unscrew rounded tip. Pull syringe from barrel by holding blue collar at needle base.
- Slide yellow collar off plunger.
- Put needle into thigh through skin, push plunger down all the way, and remove.



Once EpiPen® or Twinject® is used, call the Rescue Squad. Take the used unit with you to the Emergency Room. Plan to stay for observation at the Emergency Room for at least 4 hours.

For children with multiple food allergies, consider providing separate Action Plans for different foods.

***Medication checklist adapted from the Authorization of Emergency Treatment form developed by the Mount Sinai School of Medicine. Used with permission.*

