

# Allergy & Anaphylaxis

A Practical Guide for Schools and Families

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# School Nursing Article List

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# Creating a Latex-Safe School



School nurse Janice McPhee with one of her students.

Janice McPhee, MSN, RN, is the school nurse you would want to care for your child. She is well versed in evidence-based care, works to find solutions and really cares for students.

McPhee recently worked to implement a latex-safe environment in the Ballston Spa Central School District in Ballston Spa, New York, to help a family whose child has a severe latex allergy. Here is a Q&A interview with McPhee, an Anaphylaxis Community Experts (ACE) volunteer, about latex prevention measures at her school.

**Q: You helped your school raise awareness of latex allergy. How did the idea of a latex-safe school come about?**

**McPhee:** In Ballston Spa, we have students and staff members with latex allergies. The parents of a student with latex allergy had to take their child home from an event at the elementary school after the child had a reaction to the latex balloons used for decoration. They asked the principal to help their child and we went to work as a team to find a solution.

**Q: What was your role in the developing and implementing latex prevention measures?**

**McPhee:** I brought the parents' concerns and latex allergy information to the school district's Environmental Safety Committee. Nurses had removed latex from products used in our offices several years ago and we had removed latex gloves from our kitchens. Now we decided to remove items containing latex from the district's purchasing list.

Once we explained the risks of latex allergy, there was no resistance to the initiative from parents or the school district. The Coordinator of Science K-12 worked diligently to adjust science projects that included latex balloons and other latex products.

**Q: Why is latex prevention in schools so important?**

**McPhee:** Latex can be found in so many places in the school setting. The most common items you can find it in

are gloves, bandages, balloons, science equipment and rubber mats. We are protecting our students and staff members from a potential anaphylactic reaction.

Are we totally latex free? Probably not, but we continue to educate staff and families about why it's important to remain vigilant. Staff members often approach me to discuss latex products and review options.

ACE volunteers are in the perfect position to help parents, children and staff who live with latex allergy. Add your voice to theirs and advocate for a latex-safe environment at school.

**Latex allergy affects up to 6 percent of the population in the United States. Reactions can range from hives and urticaria to asthma flares and life-threatening anaphylaxis. Avoidance of natural rubber latex is critical for people with latex allergy.**



Anaphylaxis Community Experts (ACE) is a national, award-winning education, advocacy and outreach program developed and hosted by Allergy & Asthma Network in partnership with the American College of Allergy, Asthma & Immunology, sponsored by Mylan Specialty L.P.

ACE volunteer teams across the country offer free awareness and training programs. Become an ACE member or request a presentation in your neighborhood: Visit [AllergyAsthmaNetwork.org/outreach](http://AllergyAsthmaNetwork.org/outreach), email [ace@AllergyAsthmaNetwork.org](mailto:ace@AllergyAsthmaNetwork.org) or call 800.878.4403.



# What You Need to Know About Latex Allergies

By Jean M. Zimmerman

As an increasing number of students are being diagnosed with latex allergies, school bus operators must learn to minimize triggers, while at the same time gearing up for potential reactions. Students with latex allergies look no different from other students. However, for a student with latex allergies, exposure to latex could cause very serious complications.

## What is latex?

Latex is a natural product from the sap of the rubber tree and is a major ingredient in most rubber products. Rubber made with latex is called natural rubber latex (NRL) and is often chosen as a material due to its low manufacturing cost, flexibility, strength and elasticity.

Many of us are not aware of how many items that we come into contact with on a daily basis contain latex.

These items can range from pacifiers to rubber bands to rubber clothing, such as raincoats.

Two kinds of NRL are produced – crepe rubber and liquid latex. Crepe rubber is hardened and can be found in tires and rubber balls. Liquid latex is used to make thin stretchy items such as surgical gloves, balloons and rubber bands. Most people with latex allergies are allergic to products made from liquid latex.

## Who is prone to allergy?

With the spread of infectious diseases over the past 10 years, healthcare workers have increased their use of surgical gloves and other liquid latex products. Increased use breeds increased sensitivity, which can, in turn, lead to an allergic reaction.

In 1975, it was estimated that 5 to 10 percent of all healthcare workers had become sensitive to latex. In 1997, the number of latex-sensitive healthcare workers had risen to 17 percent. With repeated exposure to liquid latex (as noted, liquid latex is found in many household products), more and more children and adults are developing allergic reactions to it.

Children with complex medical needs who have been exposed to liquid latex products since birth are particularly susceptible to latex allergies. Children with spina bifida, for example, often have multiple surgeries early in life and are exposed to a greater-than-normal amount of latex. The Spina Bifida Association of America and the FDA estimate that as many as 65 percent of children with spina bifida have a latex allergy. Other children who have had spinal injuries or multiple congenital defects have an incidence of

latex allergies above 25 percent. Children who have had three or more surgeries have a 33 percent incidence of latex allergy. The tendency to develop allergies is inherited. Those with latex allergies are often also allergic to avocados, bananas, kiwi, potatoes and chestnuts.

## What is a reaction like?

When someone who is allergic to latex is exposed to it, the allergic reaction may actually involve parts of the body that did not even touch the NRL. For example, the use of latex gloves during a tooth filling may cause hives over the patient's entire body.

In more severe cases, the reaction may involve the person's airway, lungs and heart.

Symptoms of a latex allergic reaction to be aware of, as noted by the Asthma and Allergy Foundation of America, include the following:

- Hives or itchy welts that may appear on any part of the body.
- Hay fever-like symptoms, including nasal stuffiness, sneezing, runny nose and itching of the nose, eyes or roof of the mouth.
- Wheezing, coughing and shortness of breath.
- Anaphylaxis, a life-threatening reaction that is characterized by a blocked airway, swelling of the throat and a drop in blood pressure.

Beyond having a basic understanding of latex allergies, a school transportation provider can take the following steps to minimize the risk of allergic reaction on the bus.

## Know student health

It is critical to know the medical conditions of all the students you transport. The transportation department is an integral part of the school system and has not only the right, but also the responsibility to know the medical needs of transported students. The transportation staff must be aware of students who are allergic to latex (and other allergens such as bee stings) and follow medical procedures as established by their school systems.

As a child or adult becomes more sensitive to latex, his or her chances of having a life-threatening anaphylactic reaction also increase. Anaphylaxis is a medical emergency, and the sooner it is treated, the less severe it will be.

## Use picture ID cards

Specific medical information about each student must be kept in a secure area on every bus a student rides. Keep this in mind when a student rides different buses in the morning and afternoon. This information must be updated

whenever there is a change in a student's medical condition or medications. Serious allergies, such as a latex allergy, should be noted in the emergency information.

However, is having written emergency information on the bus enough? Not necessarily. Picture the following scenario: There has been a school bus accident. Both driver and monitor are unconscious and the students are non-verbal. The paramedics arrive at the scene. How do they know which emergency information is for which student? They don't.

For this reason, it is critical that a recent photo be attached to each emergency information card. (When taking pictures of students, remember that parental notification is required.)

### Identify reaction triggers

A person who is allergic to latex does not necessarily have to come into direct contact with it to have an allergic reaction. Some people may be allergic to the powder that comes off the latex gloves. For others, just the smell of latex may cause a reaction. Because of varying sensitivities, rubber balloons and other products that may contain latex should not be allowed on school buses. However, there may be latex lurking in places you never suspected, such as within the structure of the bus itself or in the products you use to clean it.

Here's a perfect example: One of the physical therapists in the Palm Beach County School System had a student with spina bifida practice transferring over to a school bus seat once she received a new sports-type wheelchair that was not suitable for school bus use. That evening, the student's thigh broke out in a red, swollen rash that the mother described as a latex allergy.

Originally, I was told that there is a good possibility that latex was used in the foam contained in the seats of the older school buses. However, leading bus seat manufacturers looked back into their records and could not find any indication of the use of a latex product. The cause of this student's allergic reaction has not been determined. Perhaps it was triggered by a replacement seat foam or cleaning, patching or repainting material.

For this reason, it is critical that you read the labels of all products used on the school bus and reject any with latex additives.

### Use non-latex gloves

Be aware that some of your own staff may be allergic to latex. Most emergency response teams only carry non-latex gloves, but how many of our bodily fluid cleanup kits still contain latex gloves? Yes, non-latex gloves do cost more, but we can never put a price tag on the health of a student or staff member.

Do not fall into the trap of having both types of gloves (latex and non-latex) onboard and think that, in an emergency, the right gloves will be used. To an

untrained eye, the two types of gloves are very similar in appearance and could easily be mixed up. Even telling them apart by their color is a dangerous practice, as different manufacturers make them in different colors. The safest practice is to always use non-latex gloves.

### Check gloves regularly

It is suggested that you inspect non-latex gloves stored on school buses at least every three months to be sure the materials have not broken down. Current studies suggest the shelf life of these gloves is a minimum of two years, but that life span can be affected by storage conditions. The manufacturers suggest that the gloves be stored in a cool, dry, well-ventilated area and that they be shielded from direct sunlight.

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# What Parents Should Consider When Choosing A Preschool



## ✓ Does the preschool have a food allergy policy?

Ask for a hard copy of their policy for reference as you compare facilities. Some may have this information available online via a handbook.

## ✓ How will my child's food allergy needs be communicated within the school to teachers, parents and classmates?

When it comes to a child's allergies, communication with staff is important so they know symptoms and triggers to watch for in case of a reaction. Other parents will want to know about a child's food allergies for off-site birthday parties and play dates; send an email or letter to parents with suggestions for safe snacks or treats. Ask the preschool director or teachers how health conditions are discussed – in an age-appropriate way – with students.

## ✓ What is the medication policy?

Ask which staff members, if any, are allowed to administer medication during the school day. Are they present daily for the duration of the day and what happens when they are absent? Verify where medication is stored, if it is temperature controlled, and who has access to it in case of emergency.

## ✓ What type of medication training is provided?

Many schools require personnel to have CPR certification that includes some allergy education and instruction. If the school you select doesn't offer it, consider doing it yourself.

## ✓ Does the preschool offer menu accommodations for children with food allergies or is it the parent's responsibility to bring in safe snacks and meals?

If the school provides meals and snacks your child will eat, it is critical to work closely with the food service manager to discuss allergens in food, as well as the potential for cross-contact when food is served or via suppliers. Provide a list of unsafe ingredients to watch out for on food labels. Whether or not you choose to pack your child's snacks and lunch, send a box of safe snacks for your child's teacher to keep in the room for impromptu celebrations.

### **How will the preschool handle mealtimes in your child's classroom?**

Some preschools with toddlers may ban all peanut or tree nut products due to the potential for sharing food and the likelihood of young children putting everything and anything in their mouths. Others may enforce a peanut-free eating area with strict cleaning guidelines.

### **How are eating surfaces cleaned after mealtime?**

Eating surfaces should be cleaned with hot water and soap before and after snacks and meals to eliminate as much allergen residue as possible. This is important to consider even if there's a food allergen ban already in place, as sometimes the space may be used for purposes outside of preschool. Some church-based preschools, for example, may host meetings or special events in which food is served after school hours. Is the classroom cleaned in the morning before students arrive?

### **Are scented room sprays, deodorizers or candles used?**

Some teachers use scented room sprays or deodorizers or candles to keep the classroom smelling fresh, but these can aggravate asthma symptoms.

## You've Selected a Preschool. Now What?

- 1. Provide the school with an Asthma Action Plan and/or Allergy and Anaphylaxis Emergency Plan** completed and signed by your child's doctor. Don't forget to include your child's picture – this helps all staff members easily identify your child. Give copies of the forms to the director of the preschool, school health staff, and all of your child's teachers.
- 2. Work with your physician to complete medication forms** for each medication that will be kept at school. Give copies to the preschool.
- 3. Provide medications with an expiration date as far off in the future as possible.** Record the expiration dates on your calendar so you can refill before the medication expires.
- 4. Before school begins, request to speak with your child's primary teachers at a non-peak time.** Share information about asthma and/or food allergies and answer any questions they may have. This may also be an opportunity for the teacher to meet your child, too.

# Food Allergy Symptoms: Mild vs. Serious

By Purvi Parikh, MD

Sasha was a fussy eater – often just turning her head away and rubbing at her lips. She also had frequent eczema spots on the inside of her elbows and on her cheeks. Little Will had a small rash around his mouth and a nagging cough.

Parents who tell me about these seemingly minor symptoms – which might even be considered “normal” – are often surprised when I tell them it could be food allergy.

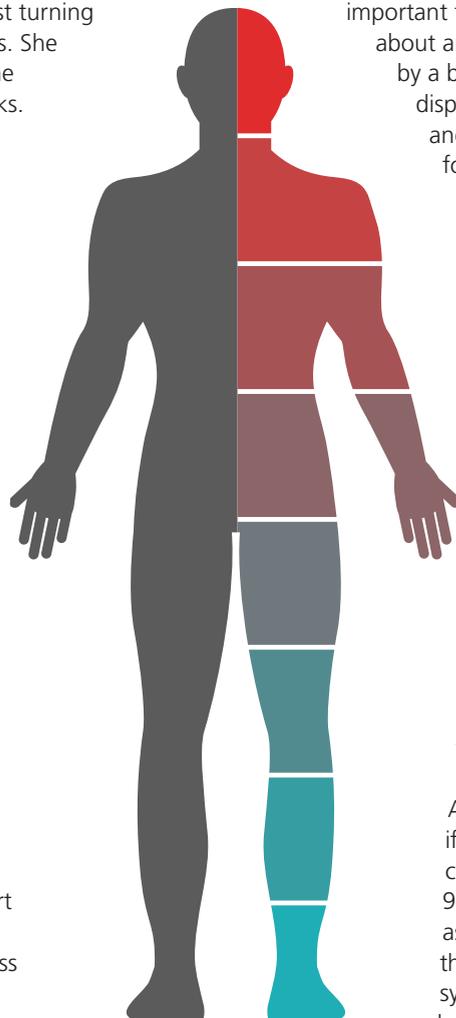
A food allergy reaction isn't always sudden and dramatic, especially in young children, but most will appear within minutes or a couple of hours after consuming the food.

Babies and young children may cry, look flushed, and break out into hives. They may vomit, or begin wheezing. It could happen the first time a child tries a new food, or after they've safely eaten it a few times. Children might also experience ongoing symptoms that are hard to link to a specific food – eczema is the most common.

Older children and adults may react more with flushing, hives and wheezing, or with stomach discomfort but not necessarily vomiting. If breathing is difficult or there's dizziness or confusion, it's likely anaphylaxis.

Mild allergy symptoms can erupt

into serious events without warning. That's why it's important to talk with your child's pediatrician about any and all symptoms. Simple skin testing by a board-certified allergist will confirm or disprove a suspected food allergy, so a safe and nutritious diet can be developed and followed.



## Clearing Confusion

There's no such thing as a “mild food allergy.” There are mild symptoms, for sure, but there's no way to predict the severity of a reaction from one day to the next – which is why allergists recommend staying away from any food that you're truly allergic to.

Ask a board-certified allergist for a written Allergy and Anaphylaxis Emergency Plan, with specific instructions about what to do if symptoms appear, and what to do if you suspect you or your food-allergic child has been exposed to a food allergen. The American Academy of Pediatrics recently published a sample form at [aap.org](http://aap.org).

Always follow the instructions on your Allergy and Anaphylaxis Emergency Plan, if you have one. If not, for mild symptoms call your doctor; for serious symptoms, call 911 and use an epinephrine auto-injector as soon as possible. A general rule of thumb in an emergent situation is if skin symptoms are rapidly spreading or you have any other symptom with it – nausea,

## For Quick Reference

Mild	Serious
• Few hives	• Hives plus any other symptoms hives spreading across the body swelling that affects breathing vomiting or diarrhea
• Eczema	• Shortness of breath, wheeze, cough
• Mild swelling of the lips	• Pale skin; blue lips or fingernails
• Flushing	• Fainting or dizziness
• Itchy nose, mouth, eyes	• Feeling of doom, confusion, agitation
• Stomach discomfort	

vomiting, cramps, dizziness, coughing or wheezing – then it's serious.

Food allergy symptoms can be broken down into types: skin, gastrointestinal, respiratory and cardiovascular.

**1) Skin symptoms** are the most common: a skin rash, or hives; itchy mouth or lips; flushing of the face; swelling of the lips or tongue.

**Mild:**

- A few hives around the face
- Flushing
- Itchy mouth, tongue, lips or eyes; this is a form of hives, developing under the skin
- Mild swelling of lips

**Serious:**

- Hives that pop up and spread across different parts of the body; this indicates that the allergic reaction is spreading through the bloodstream
- Swelling of the mouth or tongue that interferes with breathing or swallowing

**Special cases:**

- Any amount of hives or swelling is considered serious in a person who has experienced a serious allergic reaction in the past
- When hives appear along with symptoms in another part of the body, like respiratory or gastrointestinal, this is considered serious
- Some people with hay fever will experience mild food allergy symptoms – an itchy mouth, for example – when eating certain fruits and vegetables that are related to the tree, grass or weed pollens they are allergic to. This is called OAS, or Oral Allergy Syndrome. Call your physician if you notice these symptoms.
- Others may experience sensitivities to food, such as lactose intolerance. These sensitivities make food difficult to eat, but they are not a true allergy. That's why it's important to see an allergist for testing.

**2) Gastrointestinal symptoms** like vomiting are particularly common among infants and children.

**Mild:**

- Stomach discomfort
- Bloating

**Serious:**

- Vomiting
- Severe pain or cramping
- Diarrhea

**3) Respiratory symptoms** are also quite common and often serious – especially for people with both asthma and food allergies.

**Mild:**

- Small cough
- Hoarse voice

**Severe:**

- Wheezing
- Shortness of breath
- Hoarse voice
- Uncontrollable cough

**Special cases:**

- Respiratory symptoms are always serious in people with asthma; if they arise in a person with food allergies soon after eating, they should be treated with epinephrine, not albuterol. Epinephrine will improve breathing whether the reaction is to a food allergen or asthma trigger. Fatal cases of anaphylaxis have been reported in people with both food allergy and asthma, so you should not hesitate to use your epinephrine.

**4) Cardiovascular symptoms** are always serious and require immediate treatment – use an epinephrine auto-injector or call 911.

**Serious:**

- Dizziness, fainting or confusion; this indicates decreased blood flow to the brain
- Pale skin, blue-tinged lips or fingernails; this indicates restricted oxygen and blood flow throughout the body

There is no substitute for the care of an allergist when food allergy is suspected. Be sure to have allergy testing under the guidance of a board-certified allergist if you think you or your child may have a food allergy. There are many tests that have not been validated for allergies, so you want to be sure you are undergoing accurate and reliable testing. Misinformation for food allergies can be dangerous.

*Purvi Parikh, MD, is an allergist and immunologist with Allergy & Asthma Network, the leading nonprofit patient education organization for people with allergies, asthma and related conditions. Dr. Parikh practices in New York City at Allergy and Asthma Associates of Murray Hill and New York University School of Medicine. She sits on the Board of Directors for the advocacy council of the American College of Allergy, Asthma & Immunology.*



# Latex Gloves Becoming History

The first hospital in the country to use rubber gloves during surgery is leading the quest to banish the gloves, creating a latex-safe environment for patients and nurses.

It's the right thing to do, says Colleen Cusick, RN, clinical products specialist at Johns Hopkins Health System in Baltimore. Up to 15% of healthcare workers have an allergy or sensitivity. And some patients are at higher risk for latex allergies.

Johns Hopkins indicates its first surgeon in chief, William Stewart Halsted, developed and introduced rubber surgical gloves for use in the United States in 1894 to protect the hands of his scrub nurse from the harsh antiseptics in widespread use as disinfectants.

Latex gloves became the norm in operating rooms and, during the 1980s, on all units to protect workers from bloodborne pathogens.

But with greater exposure to the gloves natural proteins, people began developing latex allergies, which can result in life-threatening anaphylactic reactions. Hopkins reports 6% of the general population is allergic to latex.

Hopkins established an interdisciplinary latex task force in 1997 to address the problem. Within a year, the hospital banished nonsterile latex exam gloves, replacing them with neoprene, polyisoprene or vinyl gloves.

Norrie Rabinowitz-Hirsch, RN, a latex-allergic staff nurse at Hopkins, considers the universal use of latex-free products important in decreasing exposure to the proteins, because limiting exposure may decrease the numbers of people who become sensitive.

Chances of developing the allergy increase with greater exposure to the proteins, especially if the latex comes in contact with mucous membranes or broken skin,

such as hands with cracks and sores related to frequent hand washing or patients who have undergone multiple surgeries. People with certain food allergies, such as kiwis, avocados, bananas or passion fruit, also are at greater risk, so it evolved into a patient-safety issue, Cusick adds.

In the surgical suites, clinicians continued to prefer latex gloves because of their fit, flexibility and better tactile sensation. Now, with improvements in sterile neoprene and polyisoprene gloves, Hopkins has removed latex from the OR, too. The nonlatex sterile gloves cost between 30% and 50% more than latex gloves.

The hospital also has eliminated as many other medical latex products as possible from the facility, but, Cusick says, some items such as certain catheters have no latex-free alternatives.

And some latex-free versions are not clinically acceptable, Cusick says. Their use becomes a judgment call. Is this something someone needs? If the patient doesn't have an allergy, they may do fine. Certainly, if someone has a documented latex allergy, you would not want to use them.

Johns Hopkins also has banned latex balloons and notified all florists. When the American Red Cross conducts an on-site blood drive, the hospital requires nurses wear latex-free gloves.

It's a very good thing, Rabinowitz-Hirsch says about the hospital's latex-safe environment. I think more hospitals should take a stance and go latex-safe to minimize the amount of latex in the hospital.

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— Debra Anscombe Wood, RN

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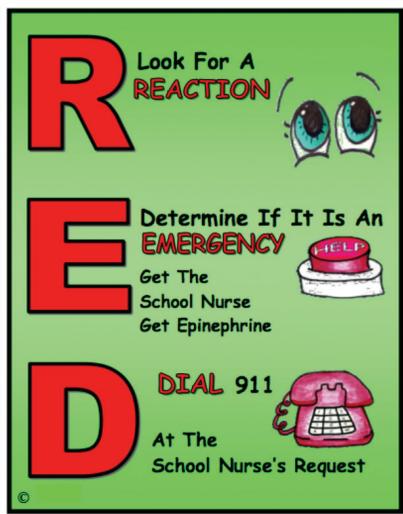
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# It Takes a Hero

Students who attend Covert Avenue Elementary School in Elmont, New York hail from all over the world and are encouraged to appreciate each other's customs and beliefs. Kids with food allergies are included in all activities and there are no food allergy-related restrictions.

Colleen Foley, RN, the school's District Supervising Nurse and an Anaphylaxis Community Experts (ACE) volunteer with Allergy & Asthma Network, trains staff each year to recognize and respond to anaphylactic emergencies.

As part of training, Foley uses anaphylaxis education training cards with the acronym **RED**:



Foley distributes the training cards to school staff. "On the back of the card is a red, yellow and green chart that shows teachers how symptoms can progress from mild to life-threatening," she says. "During individual trainings, I highlight on the card when the teacher should administer epinephrine. Most are willing to give epinephrine but they



"A delay in administering epinephrine is associated with a higher risk of death from anaphylaxis. Knowing when to take action is very difficult. My goal is to empower school staff so they respond immediately, rather than be swayed by uncertainty."

— Colleen Foley, RN

question their decision when it comes time to act. The RED card is a visual aid supporting that decision."

Last school year, Foley trained more than 40 staff members, including a teacher who put the training to use when she recognized that a student was experiencing a life-threatening allergic reaction.

Snack time had started. The teacher noticed the student was not feeling well. She was feeling "itchy" on her arms and belly, and was developing hives after eating pistachios brought from home. The student, who had never experienced a food-allergic reaction before, said she felt a hot feeling around her mouth.

The teacher immediately brought her to Foley's office where the school's epinephrine auto-injectors are stored. Following school emergency protocol for unknown allergies, Foley administered epinephrine. She also telephoned the child's mother and pediatrician and called 911 to request an ambulance.

Thanks to Foley's anaphylaxis education training and the availability of stock epinephrine at Covert Avenue

Elementary School, the child recovered from the allergic reaction. She returned to school a day later with her own epinephrine auto-injectors and a personalized Anaphylaxis Action Plan. The hospital's emergency department staff commended the school for administering epinephrine right away.

For Foley, there was never any doubt.

"This child's experience is the perfect example of why I train our staff to recognize and respond to a life-threatening allergic reaction," she says. "A delay in administering epinephrine is associated with a higher risk of death from anaphylaxis. Knowing when to take action is very difficult. My goal is to empower school staff so they respond immediately, rather than be swayed by uncertainty."

*Anaphylaxis Community Experts (ACE) is a national, award-winning education, advocacy and outreach program developed and hosted by Allergy & Asthma Network in partnership with the American College of Allergy, Asthma & Immunology, sponsored by Mylan Specialty L.P.*

# Latex Allergy Article List

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# Breathe Better Together!

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

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

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



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