



I USE A ROBOT TO GO TO SCHOOL

If Lauren walks into a classroom, she could die. So she sends a robot instead.

BY SARAH JANE BRIAN

One afternoon in December 2010, Lauren Robinson walked into her eighth-grade science class in Fort Collins, Colorado, and immediately knew something was wrong. A wave of dizziness washed over her and she started to vomit. An itchy rash broke out all over her body. Worst of all, Lauren's throat began to close up—fast—and she was soon struggling to breathe.

Lauren had been thrown into **anaphylaxis**, a severe allergic reaction. Without immediate medical attention, a person in anaphylaxis can suffocate in minutes.

Since birth, Lauren has suffered from an allergy to dairy. But she had not eaten any dairy that day, and in her science class, there were no dairy products in sight. Hours earlier, there *had* been a pizza party in the room, but every surface had been thoroughly wiped down. What no one realized was that invisible particles of cheese still hung in the air. And that was all it took.



Lauren Robinson

Threats Everywhere

In the U.S., 1 in 13 children under the age of 18 has a food allergy. Everything from nuts and soy to shellfish and wheat can trigger allergic reactions. For most kids,



not eating the foods they are allergic to is enough to avoid getting sick. And when Lauren was younger, **vigilance** about what she ate was enough to keep her safe too. She avoided the obvious—cheese, yogurt, ice cream—but also **scrutinized** the labels of everything she ate; dairy products can lurk in all sorts of unexpected places, from bread and soup broth to chewing gum.

As Lauren got older, her allergy worsened. And by eighth grade, touching or inhaling even a tiny amount of an allergen had become potentially deadly.

For Lauren and others like her, invisible threats are everywhere. To a nut-allergy sufferer, for instance, an invisible smear of peanut butter on a library book, a pinprick-size speck of almond on a computer keyboard, or fumes from peanut butter cookies baking in a grocery store oven can cause life-threatening emergencies. As a result, many kids with severe allergies end up spending most of their time at home.

That, in Lauren's case, was where a robot came in.

“A Weird, Weird Idea”

After her attack in science class, Lauren was rushed to the hospital. She made a full recovery, but the attack was the last straw. She had already been hospitalized five times that year, and the idea of returning to school seemed so dangerous that Lauren and her family decided she would not go back.

Instead, a teacher started coming to her house. Lauren was safe, but she missed her friends.

“I felt alone and isolated,” she remembers.

Then Lauren and her family learned about a possible solution: a remote-controlled robot that Lauren could send to school in her place.

At first, Lauren thought using a robot was “a weird,



Allergy Alert dogs like Parker can also make a big difference in the life of an allergy sufferer. Parker lives with fifth-grader Grace Denney in New Hampshire. He is trained to sniff out the nuts that make Grace sick and warn her if he detects them.

weird idea.” She was willing to give it a try, though, and quickly became excited by the way the robot—called the VGo—allowed her to interact with others.

Here's how the VGo works: Using an app on her laptop, Lauren controls the VGo from home. The robot's video camera and microphones allow her to see and hear what's going on at school as she drives the robot from class to class. Her teachers and classmates can see and hear her too; her face appears on a screen and speakers project her voice.

It took time for Lauren to learn to control the VGo. “I kept bumping into walls at first,” she says, laughing. But eventually she got the hang of it, and now, using the robot feels natural. She has even figured out a way to “raise her hand” using the robot's headlights. “I flash them on and off until the teacher sees me,” she explains.

A Normal Life

Though Lauren, now 16, sends the VGo to school in her place, she refuses to let her allergy trap her at home or isolate her from the people she loves. But her allergy can complicate things. She does karate and plays field hockey, but she can't ride the bus to away games (too much food on those buses!) and her teammates must wash their hands before they see her. On weekends, Lauren's friends visit her at home. To keep her safe, they change clothes and wash their hands before they come over. And just in case, Lauren always carries an **EpiPen**; if she has an allergic reaction, she uses this device to give herself a life-saving injection.

Lauren has dreams for the future too. She wants to attend college someday and become a scientist. “I'll be able to live a normal life, but I have to be very, very careful,” she says. ●

What Causes Allergies?

Our own body's defense system against diseases is to blame **BY LAUREN TARSHIS**

Imagine an enormous army of tiny soldiers living inside your body. They are working around the clock to protect you from diseases and infection. Any time a germ invades your body, *bam*, the army attacks, working to destroy the germ before it makes you sick.

This army really does exist inside you. It's called your immune system, and it **comprises** a network of cells, tissues, organs, and chemicals that work together to protect your body. It detects germs and other "invaders" that could make you sick, and then it seeks to destroy these **pathogens** through a complex series of chemical reactions.

The immune system is incredibly effective, but it can get confused. In people with allergies, the immune system mistakes something harmless—like a peanut they eat or a speck of tree pollen they inhale—as a deadly

threat. An allergic reaction occurs when the immune system goes after this "enemy," and far from doing its job of providing protection, causes harm.

Usually the result is pretty mild—an itchy rash, a drippy nose, watery eyes—and most people can control their allergies with medicine. But sometimes the

allergic response is life-threatening, unleashing chemicals that put enormous stress on the body and interfere with breathing. Scientists have not yet

discovered ways to prevent these reactions, or even predict when allergies will develop.

Food allergies are far more common today than when your parents were growing up. From 1997 to 2011, the number of children with food allergies rose 50 percent, though scientists aren't sure why. In fact, much about allergies remains a mystery. One thing is certain: Allergies are nothing to sneeze at. ●



Cow's milk is the most common food allergy in young children.



Peanuts are the leading severe food allergy.



Eggs are the second-most-common food allergy in children and are in many baked goods.

WRITING CONTEST

Compare how these two texts present information about allergies. How do the two texts each contribute to your understanding of allergies? Answer in two to three paragraphs. Use text evidence to support your ideas. Send your response to **ALLERGY CONTEST**. Five winners will each receive *Word Nerd*, by Susin Nielsen. See page 2 for details.

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