



Food allergies

Life threatening,

yes, but

potentially curable?

Pat Rich

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For someone with a serious food allergy, even the most innocent family gathering can be a minefield. But new research presented this spring offers hope, especially for parents whose children face a lifetime of avoiding potentially killer foods.

Two years ago, at a Christmas gathering at his grandmother's house, 20-year-old Kevin Taylor, an Ottawa University student sampled a dessert, not realizing that it contained peanut butter. Although the family had been aware for many years that Kevin had a serious allergy to peanuts — his first reaction occurred when he was just four — a forgetful relative had supplied a dessert containing a potentially lethal ingredient.

"Kevin unwittingly had a bite of a peanut butter ball, and his throat started to constrict. He couldn't breathe, so we had to rush him to the hospital," says his mother, Louise. "Kevin has to carry an epinephrine auto-injector at all times but he didn't have it at the Christmas gathering because you figure, with family, everybody knows about his allergy." Louise raced home and got the auto-injector, and Kevin jabbed himself in the leg. But he still ended up spending several hours in the hospital until his widespread swelling subsided.

Kevin's story demonstrates just how vigilant people with serious food allergies must be, and how anxiety-provoking it can be raising children with such allergies. It also demonstrates the critical role the epinephrine auto-injector plays in treating serious reactions.

According to Louise, Kevin was first diagnosed as a preschooler when he developed hives at age four after eating peanut butter. "It's been scary and stressful," she says, especially since his reactions to peanut worsened over the years with repeated exposure.

For someone with a serious food allergy, eating even a tiny quantity of the allergenic food can cause a severe immune reaction. Sometimes the reaction progresses to anaphylactic shock, a life-threatening condition in which the throat constricts, leaving the person unable to breathe and at risk of suffocation. For Kevin, as for anyone with a food allergy, avoiding trigger foods is the key to remaining healthy. But food-allergic people should also always have an auto-injector available to provide a dose of epinephrine (aka adrenaline) and moderate the potentially fatal reaction.

A CURE COMING SOON?

But what about a means for protecting at-risk children who accidentally eat an allergenic food from having a life-threatening reaction — a safeguard that has so far been lacking? If successful, this approach might even allow them to eat trigger foods as part

of their regular diets. Such a treatment may soon be a reality, thanks to breakthrough research in oral immunotherapy, presented this year at North America's premier allergy meeting — the American Association of Allergy, Asthma and Immunology. In a protocol somewhat similar to desensitizing people to airborne allergens such as mould and pollen, usually via regular injections, children receive tiny but escalating doses of the allergenic food in powdered form in a carefully controlled environment. The treatment is given over a period of weeks or years until the child's immune system becomes desensitized to the food and can tolerate it.

The most exciting of these findings involved children with peanut allergy and came from a consortium of U.S. research institutes. The first randomized, double-blind controlled trial —

the most rigorous standard of medical studies — involved 29 peanut-allergic children. It showed that oral immunotherapy could significantly increase the amount of this legume that the children could safely tolerate. A related follow-up study from the same group showed that eight children who successfully completed up to five years of treatment could now add peanuts to their diet without serious effects.

But the allergists were quick to stress that this research is preliminary and requires much more testing before it can be applied on a widespread basis. "We don't know the right dose; we don't know the right interval of dosing; we don't know the right route of administration. And there continue to be adverse reactions," says lead investigator Dr. Wesley Burks, a professor and chief of pediatric allergy at Duke University Medical Center in Chapel Hill, N.C.

In fact, oral immunotherapy looks so promising that a joint study at McMaster

University, in Hamilton, Ont., and Dalhousie University in Halifax is about to start enrolling children under the direction of Drs. Susan Waserman, an allergist and professor of medicine at McMaster University and Wade Watson, a pediatric allergist and a professor of pediatrics at Dalhousie. "At this point, it may be a bit premature to call it a cure," says Dr. Waserman. "But it really is extremely exciting because we had nothing up until now. To demonstrate that some of these children who reacted to tiny amounts of peanut previously with acute allergic reactions were then able to tolerate up to 13 peanuts is really quite unbelievable."

Dr. Waserman echoed the other experts in expressing the need for extreme caution in doing such studies. "There's no question that it has to be done carefully. Every time the dose is escalated, this needs to be done in hospital," she says. "The

TOP 10 Allergy triggering Foods

- Peanuts
- Tree nuts
- Shellfish
- Fish
- Dairy products
- Eggs
- Wheat
- Soy
- Sesame
- Sulphites



capability of reacting to the peanut is always there. Certainly it's nothing that anybody should be trying at home."

Although the treatment might mean taking daily doses of the allergic food for months, if not years, Louise feels that it would certainly have been worth considering if it could have freed her son of the prospect of a lifetime of watching what he eats. "Whatever they can come up with that will get rid of the allergy we are open to," she says.

THE MAINSTAY: AUTO-INJECTORS

In the absence of a cure for food allergies, epinephrine auto-injectors are the only effective means of protecting children after the accidental ingestion of allergenic foods. Louise, for example, received a prescription for an auto-injector as soon as Kevin was diagnosed and told to have him carry it with him at all times. "They trained me and Kevin himself on how to use it," she says.

But new Canadian research from McGill University in Montreal suggests that many parents are afraid of using these devices and some children are neglecting to carry them at all times. In a survey of 844 parents of children who were prescribed auto-injectors for food allergies, 18.4% had not been educated about how to use the devices. "We were surprised there wasn't more education by the physicians on how to use the auto-injector," says lead investigator Dr. Ann Clarke, a professor of medicine in the departments of allergy and clinical immunology and clinical epidemiology at McGill.

The poll also found that 53% of surveyed parents were afraid to use an auto-injector and 9.1% would use the device only if the child was having severe symptoms or would never use it at all. For Dr. Clarke, the findings are "very disturbing."

Laurie Harada, executive director of Anaphylaxis Canada — an organization that educates Canadians about anaphylaxis and supports research in this area — also finds the McGill findings worrisome. "In many cases where people die from a severe allergic reaction or end up in hospital, the underuse or lack of use or unavailability of this life-saving medication is a key factor," she says. Harada admits, however, that the findings are not a total surprise. "A lot of people may be carrying the device but may not necessarily know how to use it. Also, many parents have told us that they are afraid to administer the device, even when they have been taught how."

Today there are many more resources to educate people about the proper use using auto-injectors, including a dummy injector that has no needle and contains no medication. Harada says this training tool is a "need to have" device because "it takes away the fear factor and helps to build confidence." Furthermore, she says, it is not sufficient for a doctor to give parents a prescription for their child's auto-injector or even to demonstrate its use. Parents should be properly instructed on its use, preferably with a dummy device, and then asked to demonstrate that they can use it properly. Pharmacists can also be asked to help demonstrate the device when filling the prescription.


In a second study, this time of 706 parents of children with



Fighting allergic reactions

food allergies, Dr. Clarke found that more than 30% of affected children over age five do not carry auto-injectors. And of those who do self-carry, 20% do not know how to use them. “Unfortunately, many people who should be able to use them are not, including the children themselves, their parents and school personnel. Many, especially teachers, are uncomfortable using them,” she says.

The age at which a child can carry an auto-injector and use it varies according to maturity, but is usually around six or seven. As to when to use the device, this is a very controversial subject among experts. “But the take-home message is that if you’re waiting until the child has severe symptoms to use it, clearly this is wrong,” says Dr. Clarke. “You certainly need to use it at the sign of moderate symptoms and, one could argue, to use it as soon as mild symptoms develop, or even right after the child ingests the allergenic food and before symptoms begin.”

The future for immunizing children against the worst effects of food allergens looks bright, but for now, ongoing vigilance is required. 

- 1 Always carry your epinephrine auto-injector with you.
- 2 Know the signs and symptoms of an allergic reaction.
- 3 Know how to administer the auto-injector and teach caregivers, friends, family members, and teachers how to use it.
- 4 In the event of a reaction, call 911 or your local emergency medical services. Tell the dispatcher that someone is having a life-threatening allergic reaction and ask for an ambulance to be sent immediately.
- 5 Go to the nearest hospital, even if symptoms are mild or have stopped. Stay in the hospital for an appropriate period of observation as decided by the emergency department physician (generally about four hours). The reaction could come back.
- 6 Properly discard the used auto-injector to minimize any chance of injury.
- 7 Replace the auto-injector before the expiry date.
- 8 Keep your auto-injector in a safe place and protect it from damage.
- 9 Consult with your physician as to when to switch to a higher-dose auto-injector (for children).
- 10 When planning a plane trip, contact your carrier about its policy on passengers carrying an auto-injector.



1.52% of Canadian children under age 14 (90,000) are allergic to peanuts

— *Surveying Canadians to Assess the Prevalence of Common Food Allergies and Attitudes towards Food Labelling and Risk, Health Canada*