

# The Peanut Predicament

Early exposure — rather than avoidance — may be key to stemming rise of peanut allergies among kids

By SUSAN BLOOM

**E**MI SOUTHGATE, of Fair Lawn, was just 2 years old when she had her first allergic reaction to peanuts.

“Emi had eaten peanuts and peanut butter without problems as a baby,” says her mother, Mishuku. But while the family was having dinner in a restaurant in 2011, they were served a dish containing peanuts and Emi had a reaction. Though Emi immediately spit out the food, “she got hives and vomited, and we knew something was wrong,” Mishuku says. “After giving her Benadryl, we rushed her to the hospital and concluded that it must have been the peanuts.”

The Southgates were referred to Patricia Hicks, director of allergy and immunology at The Valley Hospital in Ridgewood. Hicks performed a peanut “challenge” on Emi and confirmed that the little girl was, indeed, allergic to the legume.

“A lot of scary things go through your mind as to what can happen and we feel lucky that Emi (now 6 years old) didn’t experience any breathing issues,” Mishuku says. She filled Emi’s prescription for an EpiPen Jr. and was trained alongside her daughter at the doctor’s office in how to administer the shot.

But a new study by British researchers has found that introducing peanuts into a child’s diet early may alter the immune system and help the child to build up a tolerance. The five-year study, involving hundreds of kids under age 1 and considered at high risk for developing peanut allergies, indicated that those who received regular peanut protein were at much less risk of developing a peanut allergy by age 5.

## CONDITION ON THE RISE

Pediatric peanut allergies have increased dramatically in the past 10 to 15 years and are estimated to affect 1 percent to 3 percent of all children in westernized countries, according to the American Academy of Allergy Asthma & Immunology. They are the most prevalent of allergies among kids, along with those involving eggs and milk. “Years back, schools always had an EpiPen — a syringe containing a vial of epinephrine (adrenaline), which safely and successfully treats acute allergic reactions by keeping airways open and maintaining blood pressure and other vital signs — in their first-aid kit, but the need for it was rare,” Hicks says.

“Today, however, roughly one in 50 kids has a peanut allergy and a local school nurse recently told me that she now keeps 27 prescribed EpiPens in her office,” says the

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Mari Southgate, left, holds an EpiPen as sister Emi, their mom, Mishuku, and allergist Patricia Hicks look on in the doctor's Ho-Ho-Kus office.

Photo by Steve Hockstein



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allergist, who has seen hundreds of kids with peanut allergies during more than 30 years of practice.

“Many of us carry an allergic reaction to a food, but also a blocking antibody that helps us develop tolerance,” Hicks says.

For kids who don't have that tolerance, however, inhaling airborne particles from allergens such as peanuts can stimulate mast cells to respond, causing an elevated reaction. “This can result in acute symptoms — from minor swelling around the mouth to hives, vomiting, and respiratory distress and low blood pressure, which can become fatal,” Hicks says.

Jack Page, of Holmdel, was also 2 years old when he had his first peanut-related incident, which left him covered in hives within 30 minutes of eating peanuts. Fourteen years later, he knows all too well the issues of growing up with a peanut allergy.

Jack is vigilant about avoiding anything that would cause a reaction because, he says, it makes his throat “feel like it's going to explode.”

All through school, “I had to sit at my own lunch table or, if someone near me had peanuts, I had to move,” says Jack, who's now 16 and about to begin his junior year of high school at the Academy of Allied Health and Science in Neptune. “I couldn't participate in birthday parties and often had to bring my own food. Some of the other kids would joke about it and it was hard.”


“Because they're often singled out in school, one of the symptoms we see in some kids with peanut allergies is a sense of impending doom, which makes them afraid to travel, eat out or participate in family events,” Hicks says. “It can be very scary for children and can impact their whole family life.”

**THE PEANUT PHENOMENON**

According to organizations such as Food Allergy Research & Education (FARE), eight food groups — dairy, eggs, soy, wheat, peanuts, shellfish, fish and tree nuts — are responsible for 90 percent of today's common food allergies. However, peanut allergies have become the leading cause of anaphylaxis and death involving food allergies over the past two decades.

This trend has driven the debate about what has triggered a phenomenon that most people from previous generations never experienced or could even fathom. When it first happened to her son, for example, Jack's mother, Dani Page, says she “didn't even know that there was such a thing as a peanut allergy.”

“After the initial incident where Jack ate a peanut, we had one other unexpected incident when I neglected to wipe down a supermarket shopping cart and Jack came into contact with the used wrapper from someone's peanut butter crackers,” she says. “Who would ever think you'd have to worry about a jar of jelly which someone had stuck a knife with peanut butter into?”

One of the most widely supported explanations for the increase in peanut allergies is the “hygiene hypothesis,” says Ellen Sher, who heads the allergy and immunology section of Unterberg Children's Hospital at Monmouth Medical Center | 

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The EpiPen, above, is used to treat acute allergic reactions, including those from peanuts. At left, a medic alert bracelet worn by Jack Page, 16, of Holmdel, who has a peanut allergy.

in Long Branch, and is medical director of Atlantic Allergy, Asthma and Immunology Associates of New Jersey.

This theory suggests that today's ultra-clean society, in which children don't contract as many serious diseases as they once did, has caused the body to reset its immune system and develop other types of antibodies.

"Studies of global populations with a historically low incidence of peanut allergies, which include groups such as the Amish and some Polish communities that rely on old-fashioned farming methods, have led researchers to conclude that exposure to nature and, particularly, to the endotoxins present in the fecal matter of livestock, have protective qualities against developing allergies," Sher says.

"Westernized countries worldwide have lost much of that natural shield as a function of their increasing industrialization."

At the same time, she says, chemical exposure, the greater use of antibiotics, kids spending increased hours indoors and the depletion of the ozone layer have reduced our immunity and contributed to the increased prevalence of allergies in general.

## A HUGE 'LEAP' FORWARD

When it comes to allergies, Sher says a person's most vulnerable time of life is early on, "when cells are deciding whether to be allergic or not, a process which may even occur in utero."

Nearly two decades ago, medical organizations armed |

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with that knowledge — including the American Academy of Pediatrics; the American Academy of Allergy, Asthma & Immunology; and the American College of Allergy, Asthma & Immunology — recommended that children not be introduced to peanuts or tree nuts until at least age 3, when a child's gastrointestinal tract is more developed. The incidence of peanut allergies, however, kept growing.

Now, a promising new theory tied to the results

of a five-year British clinical study published in the New England Journal of Medicine in February 2015 is providing insights that challenge the avoidance-based approach.

Called the LEAP (Learning Early About Peanut Allergy) study, and championed by lead investigator Gideon Lack, a professor at King's College London, the research pivoted off the fact that Jewish children in the United Kingdom exhibited a 10 times greater incidence of peanut allergies than children in Israel of the same ancestry. It was learned that the Israeli children routinely consumed a peanut snack called Bamba, which led researchers to suspect that the early introduction of peanuts in a child's development might hold the key to increasing their tolerance.

The LEAP study involved hundreds of kids, ages 4 months to 10 months, who were considered at high risk for developing peanut allergies. During the study, half followed the current standard of care (avoidance of peanuts until after age 3) and half received two grams of peanut protein three times a week, consistently, for five years. Results indicated that nearly 14 percent of the kids following the avoidance method ultimately became peanut allergic, while only 1.7 percent of the group who'd received regular peanut protein developed a peanut allergy by age 5.

“The kids following the avoidance method were eight times more likely to develop a peanut allergy,” Sher says. “The takeaway is that evidence suggests the early and regular introduction of peanuts into a child's diet may alter their immune system and help them build up a tolerance.”

In the second phase of the study, conducted by the same group of researchers and published in the New England Journal of Medicine in March, children who regularly received peanut protein throughout the first phase of the study were then not given it for a year to see if the effects would last for another year. The results? “Though there was a decrease in one particular antibody that protects against peanut allergy, the effects did last for another year,” Sher says. “This reveals that the kids' four to five years of peanut consumption was sufficient to induce a stable unresponsiveness to peanuts after they stopped

Studies of global populations with a historically low incidence of peanut allergies ... have led researchers to conclude that exposure to nature and, particularly, to the endotoxins present in the fecal matter of livestock, have protective qualities against developing allergies.

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Jack Page, 16, is examined by Ellen Sher, medical director of Atlantic Allergy, Asthma and Immunology Associates of New Jersey, in her Ocean Township office. The Holmdel teen's allergy to peanuts was discovered when he was 2 years old. Allergist Patricia Hicks, in photo at left, says: "A peanut allergy is a shock and can be overwhelming, but as you live with it, you develop your own set of coping mechanisms."

consuming them, though there are possibly benefits to keeping peanuts in their diet."

## MANAGING THE CONDITION

While the medical community digests the results of these studies and likely will integrate them into guidelines for future generations, children who are dealing with peanut allergies are left to vigilant management.

**Roughly one in 50 kids has a peanut allergy and a local school nurse recently told me that she now keeps 27 prescribed EpiPens in her office.**

**PATRICIA HICKS,**  
*director of allergy and immunology at The Valley Hospital in Ridgewood*

when we travel, but Emi now asks about things before she eats them or has someone read a label to her, and she understands that this is something she needs to worry about and guard against that her friends

don't," says Mishuku Southgate.

Jack Page agrees that he's also gotten to a comfort zone with his allergy. "It's about being proactive and looking around to see what could be a problem because you can't be sure that a food is 100 percent safe," he says.

"I'll never purposely eat anything with peanuts and I always have my EpiPen on hand," Jack says. "It's become second nature."

On the positive side, both Sher and Hicks agree that managing

this condition has become easier for kids, thanks to strength in numbers. "There's so much more awareness of the issue and support at schools, as well as better labeling of products and more peanut-free products available," Sher says.

"The real goal is having kids develop tolerance to peanuts, so that if they get exposed, they won't react now — or years later," says Hicks, who notes that research is being done on the role that Chinese herbs may play, as well as the combined use of probiotics and peanut protein to build tolerance. In the United States and Europe, researchers are also looking at the effects on long-term tolerance levels of administering peanut protein to

children orally, as well as via patches.

"It's exciting to think that new research may someday get us to the point where we don't have to worry about peanut allergies anymore," Mishuku Southgate says. ☺

STEVE HOOKSTEIN (HICKS), JAMES J. CONNOLLY (PAGE)

## LEARN MORE

Find information on peanut and food allergies by visiting:

- National Institute of Allergy and Infectious Diseases food allergy guidelines: [niaid.nih.gov/topics/foodAllergy/clinical/Documents/FAguidelinesPatient.pdf](http://niaid.nih.gov/topics/foodAllergy/clinical/Documents/FAguidelinesPatient.pdf)
- Food Allergy Research & Education (FARE): [foodallergy.org](http://foodallergy.org)
- Kids with Food Allergies: [kidswithfoodallergies.org](http://kidswithfoodallergies.org)
- Asthma and Allergy Foundation of America: [aafa.org](http://aafa.org)
- Food allergy travel site: [selectwisely.com](http://selectwisely.com) — S.B.

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