

Allergic to Corn

Could corn be the culprit behind your symptoms?

By the time Clare Donlan was 2, something was troubling her so much that she regularly had episodes of uncontrolled screaming and hitting. At times, the tantrums lasted all day. And then, although exhausted from the lashing out, she still had trouble sleeping.

Doctors blamed the health and behavior issues that had plagued Clare since birth on various problems—colic, constipation, poor sleep habits, dry skin and others. When the toddler developed a rash all over her body that lasted three days, her mom, Jaci Donlan of Hanover, Minnesota, suspected it was more than a virus (as one doctor suggested). Following her instincts, Donlan had the little girl checked for allergies. Tests indicated Clare was sensitive to gluten, egg and dairy.

But removing these items from Clare's diet wasn't the solution Donlan had hoped for. "We thought we'd taken the offending foods out of her diet but the problems didn't go away. In fact, they got worse," Donlan explains. "When your child is throwing fits throughout the day, it sucks the life out of you and makes you doubt your parenting skills. I was depleted mentally, emotionally and physically. It was exhausting, maddening."

Ultimately, Donlan put Clare on an elimination diet, which pointed to a surprising culprit: corn. The cereal grain had become more of a staple after the toddler began eating gluten free.

Within a day after Donlan removed corn from Clare's diet, the youngster started sleeping better and her fits decreased.

"I got my child back," Donlan says.



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Confusion about Corn

Corn is a major industry that touts the most widely produced feed grain in the country. According to the U.S. Department of Agriculture, over 80 million acres in the United States are dedicated to growing it. In addition to being sold in its natural state, corn is processed into an amazing variety of widely used products, like cooking oil, popcorn, cornstarch, powdered sugar, toothpaste, medications, fuel ethanol, and sweeteners. In fact, corn was the basis of an estimated 23.1 billion pounds of sweetener produced in 2008, according to the Corn Refiners Association.

Although corn products are widely consumed, there is a general lack of understanding when it comes to corn's role as a food allergy or sensitivity. One reason is that corn is not one of the so-called Big Eight allergens (peanuts, tree nuts, wheat, milk, egg, shellfish, fish, soy) that together cause 90 percent of America's food allergy reactions. It doesn't fall under the Food Allergen Labeling and Consumer Protection Act of 2004, which means that manufacturers aren't required to list it as an ingredient by its common name, highlight it on product labels or name it as a possible source of cross-contamination in a product.

"I sympathize with people who have corn allergy because corn is very hard to avoid," says Mary S. Morris, MD, of Allergy Associates of La Crosse in La Crosse, Wisconsin. "A lot of times, people don't connect their symptoms to the corn sweetener in their ice cream."



While corn can prompt anaphylaxis, more often it causes headaches, fatigue and irritability.”

Adding to the confusion is the fact that symptoms of corn allergy can differ from those of more common food allergies. While corn can prompt anaphylaxis, including breathing difficulty, hives, swelling and even death in severely corn-allergic patients, more often it causes headaches, fatigue and irritability.

“I’m surprised at how frequently corn will trigger a bad headache, even in children,” Morris says.

These types of headaches are no stranger to Jenny Connors, a web developer in Gloucester, Massachusetts, who suffered migraines since childhood. Although she was diagnosed with a corn allergy at age 12, her doctors did not connect her ongoing health issues, including chronic headaches, asthma, rashes, joint pain and irritable bowel syndrome, to the allergy until well into her adulthood when a neurologist pinpointed corn as a trigger for her migraines. Even then, Connors didn’t experience relief until she noticed that the prescription medication she was taking to treat her migraines contained corn.

“I eliminated all traces of corn from my diet and I have been IBS free, bronchitis free and joint pain free since then,” she says.

Another factor contributing to questions about corn allergy is that people can have varied reactions to different forms of corn, Morris explains. For example, some people have more of a problem with corn sweetener than they do with corn on the cob or cornstarch. And corn pollen or corn dust that’s inhaled during harvest can trigger a reaction in some people who often can consume corn without a problem, she says.

All this makes corn allergy difficult to diagnose, Morris notes. Corn might show up in a typical skin or blood test that checks for IgE (the allergic antibody) levels—but not always. IgE allergy tests didn’t detect Clare Donlan’s corn allergy.

“Sometimes corn is IgE-mediated but sometimes the only way to figure it out is to do a corn challenge test under medical supervision in a doctor’s office,” Morris says, adding that she conducts oral challenges when she can’t tell for sure if a suspected food is causing a reaction.

Morris’ practice routinely screens for corn allergy through a blood test and, while corn is a less common allergen than the Big Eight, it is common enough that she says she sees patients with corn allergy every week.

Hard to Believe

Not all doctors would consider corn allergy as potential cause of a patient’s headaches or behavior issues. In fact, some question whether the grain is even a true allergen. For example, Morris recalls informing a surgeon that her patient, hospitalized under the surgeon’s care, had a corn allergy. The surgeon said the allergy wasn’t possible and ignored Morris’ request not to administer dextrose (usually corn-based) to the patient. It took the patient’s allergic reaction to corn during surgery to convince the physician that the allergy did exist.

Donlan has personally come up against this type of skepticism.

“Because it’s not on the top-eight radar, it’s not the first place people go to look for the root cause of their symptoms. Even though corn is the source of many severe problems for people, it is many times overlooked,” she says.

Ellen Hart of Montgomery, Texas, certainly didn’t believe a corn allergy could be the basis for her health problems. “It never occurred to me this was food related,” she says. For years she suffered with headaches but when the pain became so debilitating that she was forced to stay in bed, she decided to get an allergy test. Results confirmed a corn allergy (along with allergy to several other foods) as the cause for her symptoms.

Life Without Corn

Like many newly diagnosed patients, Hart was overwhelmed when she learned all the foods she could no longer eat.

“I was scared. I felt for certain I was going to always be hungry,” she says. She turned to her niece, Robyn Keele, the

mother of two sons (Matt, 16, and Mark, 13), both with multiple food allergies, including corn.

“I think the hardest part is when you get that list of what you’re allergic to and you say, okay, what do I do now?” says Keele of Yucca Valley, California. “It’s not like you can make a plan and wait to deal with it in a week. You have to eat every day.”

And finding something to eat that doesn’t contain corn can be a challenge. Learning the different names of ingredients that can indicate hidden corn, like dextrose, fructose, sorbitol and maltodextrin, to name a few, is a must.

“Education is essential for people who plan to eat out or buy prepared foods,” Morris says. Because corn allergy is often part of an overall medical condition that includes other food allergies, it’s easier to avoid corn and other problem foods by cooking mostly from scratch and using fresh, unprocessed foods. This strategy works for Donlan and Keele.

“I’ve found that it’s better for me to prepare things myself as opposed to buying pre-packaged foods. When I make it myself, I know what’s in it and I don’t have to wonder what the company didn’t tell me,” says Donlan, whose daughter Clare is now 3.

Donlan has had her share of experiences while navigating the challenges of corn allergy. She does not trust product labels because manufacturers are not required to list corn as an ingredient. She says she’s purchased products with contradictory information—the outside package indicates one thing while the individually wrapped products inside have different ingredients listed.

“I get furious. My initial reaction is, how can I spend so much time finding safe products for Clare and invest a great deal of money in buying them only to have the company not tell me the truth?” she says.

A lack of public awareness can be frustrating, as well. Donlan recently asked a meat manufacturer whether a preservative in deli meat was corn-derived. Her question was met with incredulity that anyone would think the company would put corn in its meat.

“This is a typical response. People think of corn in a literal way, as if they were putting kernels of corn in the meat,” Donlan explains.

Sublingual Immunotherapy

Drops placed under Matt Keele’s tongue have been a life-changer in the treatment of his environmental and food allergies, including corn. Matt, 16, has been receiving sublingual immunotherapy for more than ten years to desensitize him to multiple allergens.

As a toddler, Matt suffered from eczema and other health problems. He would vomit during the night, have trouble sleeping and often flew into rages. An anaphylactic reaction when he was 1 led to the diagnosis of an egg allergy. But avoiding eggs didn’t improve his overall health.

Robyn Keele, of Yucca Valley, California, worked diligently to address her son’s physical and emotional troubles. She consulted several allergists, a neurologist, a nutritionist, a child behaviorist, and a chiropractor specializing in children, as well as healthcare practitioners using non-traditional methods. Finally, a second set of allergy tests revealed that, in addition to eggs, Matt was allergic to several foods that he’d been eating since birth, including wheat, dairy, peanuts, corn, tomatoes and lemons.

“This was the best and worse news we could have received. It was an answer to our questions and prayers but also a path I didn’t know how to go down,” Keele says.

The path she chose led Matt to sublingual immunotherapy conducted by Mary S. Morris, MD, of Allergy Associates of La Crosse, Ltd. In sublingual immunotherapy, a minute amount of carefully measured, physician-prescribed antigen is placed under the patient’s tongue on a spot called the “privileged immunological site” to desensitize the patient to the allergen over time.

“One thing that makes sublingual immunotherapy so effective is we are actually mimicking what happens early in life with babies and how our bodies learn to differentiate between what could be harmful and what the immune system should tolerate,” Morris says.



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Partnering with Parents

The treatment, along with Morris' willingness to help parents figure out what's going on with their children, have been essential to Keele in caring for her allergic sons. After frustrating years of seeking answers for Matt, Keele has found a medical partner in Morris. She turned to Morris again for help when her younger son, Mark, then age 3, began having behavior issues and showed signs of food allergy. Mark, now 13, is allergic to eggs, citric acid, corn, sodium benzoate, safflower, dairy and salicylates.

"You have someone who's in your corner," Keele says about Morris. "She's so much more than an allergist. She's a medical detective, too."

The La Crosse, Wisconsin, practice has been administering sublingual immunotherapy for food and airborne allergies for more than 40 years, treating over 120,000 patients. Morris' father, David Morris, MD, began using immunotherapy in the 1960s to address airborne allergens, like the mold afflicting local farmers.

While the antigen used in the drops is approved by the FDA, sublingual administration is not approved to treat food allergies. FDA has approved use of the allergenic extracts for subcutaneous injection only, but off-label use is common.

The therapy requires medical finesse, experience and accurate testing to ensure it is done safely. Morris performs stringent tests to determine what allergies need to be treated and the amount of drops for each patient. After the first visit, patients generally return to the clinic in 3 to 4 months and then twice a year for 3 to 5 years. Some patients require longer therapy.

It's important to note that the success of sublingual immunotherapy lies in decreasing serious, life-threatening reactions from accidental exposure—not in outright curing a food allergy. Morris says that a corn-allergic patient could be a good candidate for treatment because long-term avoidance of corn is so challenging. After 12 months on the drops, for example, a patient may be able to ingest some cornstarch or eat popcorn once a week.

Sublingual immunotherapy can play an essential role in changing allergic disease for life, Morris says. Research has shown that using the drops for airborne allergies and asthma decreases the need for medicine, such as antihistamine and inhaled steroids. Many allergists are awaiting FDA approval before recommending sublingual therapy for food allergies but research looks promising. The drops have gotten Matt Keele to the point where he can eat almost anything and Robyn Keele has faith that the treatment will help expand her younger son's very limited diet, as well.

"The drops have been a miracle for us," Keele says. "It's a whole lot better than getting shots for environmental allergies and trying to avoid all the problem foods. We've had success—and it's hard to argue with that."

Not Alone

To provide information and fill the void of support for corn-allergic people, Jenny Connors created and hosts a website devoted to corn allergy (cornallergens.com).

"The virtual community is important for anyone who has special dietary needs but probably even more so for corn-allergy sufferers," Connors says, noting the difficulty in locating accurate and pertinent medical information about the lesser-known allergen.

When Connors first began investigating her symptoms, she found help through social networking, eventually connecting the dots to figure out that her problems stemmed from corn. Now she hears from hundreds of others via her website, people in similar circumstances who share their experiences and symptoms.

Donlan says the Internet has been an essential source of emotional support for her. Apart from the online community, she finds that few people understand that it's not okay to give Clare "a little corn" nor do they realize the wrong food can prompt behavior problems that can last for days.

Kernel of Trouble

The following items are just a handful of everyday products that may contain corn. For a comprehensive listing, go to cornallergens.com.

- Alcohol
- Artificial and natural flavorings
- Artificial sweeteners
- Brown sugar
- Caramel and caramel color
- Citric acid
- Distilled white vinegar
- Food starch
- Fructose
- Honey
- Iodized Salt
- Vitamins C and E
- Xylitol
- Yeast

Corn Substitutions

Baking corn free can be a challenge because corn is hidden in most brands of baking powder and confectioners' sugar. Xanthan gum, which is used in many gluten-free prepared foods and mixes, is often produced from the fermentation of corn sugar; guar gum is a safe alternative.

Replace cornstarch with tapioca starch/flour or potato starch. Replace corn flour with sorghum flour. Replace cornmeal with rice bran. If the cornmeal is used for dusting pans or meat, use rice flour instead.

Make your own corn-

free baking ingredients with these recipes.

Baking Powder Blend together ½ cup baking soda, ⅔ cup cream of tartar + ⅔ cup arrowroot starch. Featherweight Baking Powder (hainpurefoods.com) is made with potato starch and is gluten free.

Confectioners' Sugar Combine 1¼ tablespoons tapioca starch/flour or potato starch + enough granulated sugar to make 1 cup. Process mixture in a blender on high speed for 45 seconds or until powdered. Store unused portion in an airtight container.

"There were times I felt as if no one cared about something that had become my entire life—making sure everything that went into Clare's mouth was safe," Donlan says.

Her advice to others with corn allergy? "You may feel as though nobody 'gets it' but there are a lot of us out there," she says. "Talk to someone online or find a food-allergy support group and talk to them in person so you know that there's a light at the end of the tunnel." LW

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