

Study links GI symptoms and autism in children

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For Veer Patel (above, with mom Minal Patel), a strict schedule curbs GI symptoms.

(Medical Xpress)—Five-year-old Veer Patel was diagnosed with autism spectrum disorder (ASD) in October 2010. Typical of children "on the spectrum," he manages best with a rigid, unchanging daily routine. Unfortunately, his bowel functions are unpredictable, and he is frequently constipated—conditions that arose some time after his ASD diagnosis.

He is not alone.

Historically, the medical research community has paid scant attention to the issue, but many parents have long noted chronic gastrointestinal (GI) symptoms in their ASD children.

This lack of priority may change in the wake of a new study by researchers at the Marcus Autism Center, Children's Healthcare of Atlanta, and Emory University School of Medicine. They conducted the first meta-analysis of all published, peer-reviewed research related to autistic children and GI problems. What they found was that children with ASD, when compared to non-ASD

children, were four times more likely to experience general GI complaints and three times more likely to experience constipation and diarrhea. These children complained about abdominal pain twice as often as their non-ASD peers.

The purpose of the analysis was twofold, according to coauthor William Sharp, director of the Pediatric Feeding Disorders Program at Marcus Autism Center and assistant professor of pediatrics at the School of Medicine.

"One was to survey what we know about these issues—and we don't know much," he says. "There have been only fifteen studies published in the past thirty-two years that have really good experimental controls.

"We also hope this study prompts the medical community to increase its focus on the prevalence, cause, and remediation of these issues."

While the study confirms the anecdotal experiences of pediatricians and parents, it scrupulously avoids claiming a causal relationship.

"While we detected greater GI symptoms in ASD, our results also highlight a clear need for more research focusing on GI system in this population," Sharp says. "This includes what may be contributing to greater GI prevalence in ASD. Clearly, consideration should be given to the high rate of feeding problems and related behavioral issues such as toileting concerns documented in this population. At this time, we do not have evidence suggesting a unique GI pathology in ASD."

Food selectivity is a common characteristic of children with ASD, who can be exceptionally stubborn about what they will and will not eat. They tend to prefer a narrow range of highly processed, calorie-dense foods—particularly cheese, chicken nuggets, and French fries—and reject fruits,

vegetables, and proteins.



Like many children with ASD, Veer is nonverbal, but communicates clearly in other ways.

When Veer's GI problems first surfaced, says his mother, Minal Patel, she thought they were probably just typical childhood bowel problems—but they weren't going away.

"We started to look at his diet," she explains. "He has a hard time dealing with certain food textures, so he was on a puree diet. We thought that might be why his stool was not solid and his bowel movements were random."

Veer was placed on a special diet to help regulate his GI system. "His stool was more solid than before, but he was still very irregular," Patel says.

According to study coauthor Barbara McElhanon, pediatric gastroenterologist at Children's Healthcare of Atlanta and assistant professor of pediatrics at the School of Medicine, an important question is whether the food preference of ASD children is responsible for those with GI problems, or an underlying GI problem that guides their food preferences. "We simply do not know at this point," she says.

The onset of GI problems can be tricky to pin down because ASD children typically have difficulty communicating. Oftentimes the only indication of a problem is behavior such as self-injury, aggression, or irritability that can't be explained by other factors, McElhanon says.

Because he is nonverbal, Veer signals his need to use the toilet by hiding in a corner or making faces, Minal says, but that happens only about 20 percent of the time. "Usually we just have to guess."

Medication, delivered on a prescribed schedule, has been marginally effective. "We had to go through a lengthy process where we had to watch him the whole time every day."

The weekend is the most difficult time for Veer's GI system because he is "off schedule," his mother adds. "There's no school or therapy sessions, so they're 'free' days. He tends to have three or four bowel movements on a Saturday or Sunday versus one or two on a week day."

One factor that for years hindered research into the GI needs of children with ASD was the unfounded, and now thoroughly debunked, assertion that vaccinations caused an inflammatory GI disease, which then caused autism.

"Many studies have now shown no evidence of an association between autism and vaccines, and vaccines are important for a child's health," Sharp notes. "We hope that our work leads to better awareness of the GI health needs of children with ASD and to more studies of GI functioning in this population."

On the research side, McElhanon would like to see a standardized measure of GI symptoms and their relationship to diet.

"We should also look at the microbiome to learn what kinds of bacteria are in the bowel in these cases, what's in their blood work, what are some of the metabolites in their urine," she says.

"Physicians need to be aware that children with ASD have more GI complaints, and screen them at appointments," McElhanon continues. "They should

be asking the families for information about the nature of the stool as well as behaviors such as increased irritability that occur before the child uses the toilet. Open-ended questions such as, 'Do you have concerns that your child's stomach hurts?' are also helpful."

By documenting their child's complaints, diet, [bowel movements](#), and behaviors on an ongoing basis, parents may uncover a pattern that can help the pediatrician, gastroenterologist, or nutritionist pinpoint a potential problem.

McElhanon also urges caregivers to visit www.healthychildren.org to learn more about constipation, diarrhea, abdominal pain, and any pediatric concern they have for their [children](#) both with and without ASD.

The study, "Gastrointestinal Symptoms in Autism Spectrum Disorder: A Meta-analysis," appears in the April 28, 2014, online edition of the journal *Pediatrics*.

More information: "Gastrointestinal Symptoms in Autism Spectrum Disorder: A Meta-analysis." Barbara O. McElhanon, Courtney McCracken, Saul Karpen, and William G. Sharp. *Pediatrics* peds.2013-3995; published ahead of print April 28, 2014, [DOI: 10.1542/peds.2013-3995](https://doi.org/10.1542/peds.2013-3995)

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