

Q&A

Questions for Alison Hill: Understanding obesity in autism

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Although autism is a behavioral diagnosis, many children with the condition share a physical trait: obesity.

For years, the link between autism and obesity was anecdotal. But over the past five years or so, researchers have begun to take a **more objective look**. A study published 2 November in *Pediatrics* is the latest to find that children with autism are **more likely to be overweight or obese** than their peers.

The researchers compared body weight and height data from 5,053 children in the **Autism Treatment Network**, a national sample of nearly 7,000 children with confirmed autism diagnoses, and 8,844 age-matched controls from the **National Health and Nutrition Examination Survey**. They found that roughly 32 percent of the children with autism aged 2 to 5 years were overweight and 16 percent were obese. By contrast, 23 percent of the controls were overweight and 10 percent were obese.

We asked lead researcher **Alison Hill**, assistant professor of pediatrics at Oregon Health and Science University, what clinicians, researchers and parents should make of the findings.

Spectrum: Why did you conduct this study?

Alison Hill: A number of clinicians I work with were seeing a lot more kids who had autism and were obese. We wondered if there was something to these anecdotes.

S: How is your study different from others that have looked at obesity in children with autism?

AS: Many of the previous studies relied on parent-reported diagnoses of autism or on parent-reported measures of height and weight. We had the opportunity to get kids who had clinically confirmed diagnoses of autism as well as measures of height and weight.

S: What did you find?

AH: We basically found that rates of overweight and obesity were elevated in the autism sample. But when we broke things down by age, we saw the pattern mainly among 2- to 5-year-olds. There is some evidence that the rates of overweight and obesity are higher in adolescents with autism, but that was the smallest sample in the Autism Treatment Network. There does seem to be a consistent pattern, at least.

S: Do your findings align with those of previous studies of autism and obesity?

AH: I think we all have slightly different samples and slightly different abilities to answer different research questions. But all the studies **seem to be finding similar results**. That gives us confidence that we're looking at something real.

S: Why might children with autism be more at risk for obesity?

AH: There are a number of possible explanations, none of which we could flesh out with the data we had. There's been some speculation that the 2- to 5-year period is a difficult time for parents who are juggling their child's medical needs, education and interventions. It's possible that concerns about weight gain during this period are not at the top of the list of priorities. There may be kind of an overshadowing effect, where autism signs and symptoms become the focus, and concerns about weight gain go to the backburner a little.

S: What should clinicians do with this information?

AH: I think it's good for pediatricians to be aware that children with autism may be prone to unhealthy weight so they can help parents find strategies to address weight issues early. There are a number of long-term health consequences of obesity, such as hypertension, diabetes, reduced lifespan, breathing disorders, and orthopedic and sleeping problems. Kids who are overweight or obese are also more likely to be bullied and socially isolated.

S: What about parents?

AH: There are certainly parents who have been able to prevent or halt weight gain in their children. But there are also parents who are really struggling with how to solve this problem.

I think there needs to be a lot more research on ways to help kids with autism prevent weight gain or, once they've gained weight, lose it. A parent of a child with autism might need a lot of support. There are behavioral challenges associated with **picky eating**, and the child might be **less inclined to eat fruits, veggies** and whole grains. If younger kids are feeling socially isolated, they might be **missing out on active-play** opportunities. It's not a simple prescriptive thing to have them eat healthier and move more.

S: What future studies do you hope to see?

AH: Age-related changes in overweight and obesity are definitely something that researchers should follow up on. We can't say from our study when these kids started gaining weight. Are they gaining early in this 2- to 5-year period and staying stable? Or are there different patterns of weight gain at different stages of life?

I also hope we can tease apart some of the environmental factors. A parent's body mass index (BMI) is a pretty strong predictor of a child's BMI in the general population, so the home environment may be playing a big role. On the other hand, some children may be struggling with weight issues that no one else in the family is experiencing.

Another issue we weren't able to address is genetics. A number of studies have found that certain large-scale changes in DNA called **copy number variants** (CNVs) are associated with elevated weight in the general population, and some of these CNVs have been **linked to an increased risk**

of autism. We're not sure if the CNVs link obesity and autism in our sample, but I think it's kind of interesting that people have found these common genetic vulnerabilities.

We need a better understanding of whether genetic and environmental factors that contribute to overweight and obesity in the general population are also at play in autism. This may point us to treatments.

Alison Hill is assistant professor of pediatrics at Oregon Health and Science University.

Correction: An earlier version of this article incorrectly stated that 48 percent of children with autism were overweight or obese, compared with 33 percent of controls. The numbers have been updated to separate out the percentages of overweight and obese children, as the overweight category in the study included both.