

## Children With IBD Showed Impaired Growth Before Diagnosis

— Researchers speculate that impaired nutritional status could account for preclinical loss in BMI



Children who were diagnosed with inflammatory bowel disease (IBD) showed a decline in height, weight, and body mass index (BMI) in the years before diagnosis, particularly those with Crohn's disease, a Danish population-based cohort study showed.

Compared with children without IBD, those with a diagnosis of Crohn's disease had declining anthropometric measures 3 years before diagnosis in weight (mean -0.12 g, 95% CI -0.20 to -0.03) and BMI (mean -0.13, 95% CI -0.21 to -0.04) and 1 year before diagnosis in length or height (mean -0.20 cm, 95% CI -0.29 to -0.10), reported Maiara Brusco De Freitas, PhD, of Aalborg University in Copenhagen, and colleagues.

For kids diagnosed with ulcerative colitis, this same pattern was observed 1 year prior to diagnosis for weight (mean -0.12 g, 95% CI -0.22 to -0.02) and BMI (mean -0.13, 95% CI -0.23 to -0.03), they wrote in *JAMA Network*.

"These results not only highlight the long preclinical phase of IBD, especially [Crohn's disease], but also demonstrate the significance of frequent nutritional screening and monitoring once children are diagnosed with IBD to restore nutritional status and provide a healthy transition to adulthood," Brusco De Freitas and team concluded.

"Impaired nutrition and growth in childhood can have short-term and long-term consequences if not treated effectively," they wrote. "The reduced weight in IBD may have multiple causes, such as decreased caloric intake due to the anorexic effects of proinflammatory mediators like interleukin (IL)-1 $\beta$  and TNF [tumor necrosis factor]- $\alpha$ , malabsorption of food components, and/or early gastrointestinal symptoms, including early satiety, pain, and nausea. Reduced food intake may be caused by pain while eating, fear of diarrhea after meals, or poor tolerance of foods."

Temporary growth impairment, defined as a length/height-for-age of at least 2 standard deviations below the norm, occurred in 5.3% of children who developed IBD. Leading up to their diagnoses, those with IBD weighed an average 0.07 g less up to 4 years before diagnosis and an average 0.27 g less in the year before compared with their peers. They also experienced impaired height of a mean -0.14 cm in the year before their diagnosis, which worsened to a mean -0.28 cm during the diagnostic period.

A shift in BMI therefore occurred starting 3 years before diagnosis, worsening to an average -0.27 around the time of diagnosis. When the researchers compared children diagnosed before age 13 to those diagnosed at age 13 or later, they found greater nutritional impairment in those diagnosed at a younger age.

Most of the overall anthropometric impairment in children with IBD was driven by the blunted weight gain and linear growth in children with Crohn's. From the average -0.12 g impairment in weight in the 3 years before diagnosis, this worsened to -0.38 g in the year before diagnosis, while linear growth worsened from an average -0.20 cm 1 year before diagnosis to -0.34 cm during the diagnostic period.

For those with ulcerative colitis, there was a slight deviation in weight and BMI during the year prior to diagnosis as previously noted, but for length or height, a slight impairment was observed only in the year of diagnosis (mean -0.20 cm, 95% CI -0.31 to -0.09).

"Children with Crohn's disease approached the weight and length or height of children without IBD about 3 years after diagnosis, whereas children with ulcerative colitis seemed to recover within the first years after diagnosis but then showed significant deviation again in the third year," Brusco De Freitas and team noted.

"Recovery may be explained by treatment after diagnosis," which included immunomodulators in 60% of children with Crohn's and 5-aminosalicylic acid in 82.6% of children with ulcerative colitis. In addition, 48.3% of children with Crohn's and 57.8% of those with ulcerative colitis received systemic corticosteroids in the first year, and 38.4% and 24.4%, respectively, received TNF inhibitors.

This study included 916,133 children born in Denmark from 1997-2015 who had length/height and weight measurements taken at birth and at least one anthropometric measurement at school age. Of these children, 1,522 were diagnosed with IBD based on at least two hospital visits with an IBD code within 2 years (55.9% with Crohn's and 44.1% with ulcerative colitis). Median age at IBD diagnosis was 14.3 years, and 50.1% were girls.

To address family-level confounders in anthropometric measurements for each child with IBD, the researchers also identified the full sibling who was closest in age to the child (if they had a sibling) who didn't have an IBD visit. Among those 755 siblings, there were no deviations in anthropometric measurements, "hence suggesting no family-derived confounders such as environment or common genetics," they wrote.

**-[www.medpagetoday.com](http://www.medpagetoday.com), January 17, 2025**

### **Disclosures**

The research was funded by the Danish National Research Foundation Center of Excellence. Brusco De Freitas reported no conflicts of interest. One co-author reported receiving personal fees from Ferring and Pfizer unrelated to this study.

### **Primary Source**

*JAMA Network Open*

**Source Reference:** *Brusco De Freitas M, et al "Anthropometric trajectories in children prior to development of inflammatory bowel disease" JAMA Netw Open 2025; DOI:*

*10.1001/jamanetworkopen.2024.55158.*