

Children Who Were Diagnosed with COVID-19 Gained More Weight During the Pandemic Than Peers Who Were Not Diagnosed With the Virus

Nemours Children's Health study suggests COVID symptoms and stress may have contributed to excess weight gain

WILMINGTON, Delaware (August 6, 2025)— Children who were diagnosed with COVID-19 had larger and more persistent gains in body mass index (BMI) than children without a COVID-19 diagnosis, research from Nemours Children's Health shows.

In a [study](#) recently published in *Childhood Obesity*, researchers gathered data from the [National COVID Cohort Collaborative](#), a national resource that includes electronic health records from more than 20 million patients, including those receiving care from Nemours Children's Health. The Nemours Biomedical Research Informatics Center (BRIC) provided a targeted set of deidentified data to investigators from Nemours Children's Health and the University of Delaware.

The researchers compared the weight trajectories of 11,747 children aged 2 to 18 who had been diagnosed with COVID-19 between January 2020 and June 2023 with the same number of children with similar characteristics who had not been diagnosed with the virus.

The researchers tracked weight in the six months prior to diagnosis and the six months after diagnosis for the COVID-positive group, and compared that data with the same time period for the COVID-negative group. They found that while both groups gained at similar rates in the first six months, only the COVID-positive group continued to gain weight in the later six months.

Contributing author Thao-Ly Phan, MD, MPH, Senior Research Scientist with the Center for Healthcare Delivery Science and Medical Director of the Healthy Weight and Wellness Clinic, both located at Nemours Children's Hospital, Delaware, explained that COVID weight gain likely stemmed from multiple factors, including [stress](#).

"Biologically, our bodies react to stress by making hormones that affect our metabolism," she said. "But stress can also lead to depression or anxiety, which can indirectly affect health behaviors. Times of extreme stress like the pandemic can lead to things like trauma and social isolation, which can have a negative impact on health too."

The authors added that children who were diagnosed with COVID-19 may have experienced lingering headaches or fatigue that prevented them from playing outside. Disrupted sleep routines may have exacerbated sedentary behaviors.

Phan and colleagues said the study provides valuable information on the impact of the COVID virus itself but must be viewed in the full context of the pandemic.

"While it was already known that the pandemic generally led to rapid weight gain in children, the specific role of a COVID-19 infection itself in this trend was previously unclear. By comparing these two groups, we were able to identify unique weight gain patterns in children exposed to COVID-19 infection, filling a critical gap in the existing literature," said first author Md Mozaharul Mottalib, a doctoral candidate at the University of Delaware.

"I want parents to know that their child was not alone if he or she gained more weight than expected during the pandemic. This happened to many children because of how much the pandemic disrupted the way people lived their lives," Phan said. "Going forward, it's important for families to focus on healthy routines—making healthy food choices, being active, getting a good night's sleep, and spending time together as a family—during any period of stress, whether from a pandemic or any other major event in a child's life."

About Nemours Children's Health

Nemours Children's Health is one of the nation's largest multistate pediatric health systems, which includes two freestanding children's hospitals and a network of more than 70 primary and specialty care practices. Nemours Children's seeks to transform the health of children by adopting a holistic health model that utilizes innovative, safe, and high-quality care, while also addressing children's needs well beyond medicine. In producing the highly acclaimed, award-winning pediatric medicine podcast *Well Beyond Medicine*, Nemours underscores that commitment by featuring the people, programs and partnerships addressing whole child health. Nemours Children's also powers the world's most-visited website for information on the health of children and teens, [Nemours KidsHealth.org](#).

The Nemours Foundation, established through the legacy and philanthropy of Alfred I. duPont, provides pediatric clinical care, research, education, advocacy, and prevention programs to the children, families and communities it serves. For more information, visit [Nemours.org](#).

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