

Modified Body Mass Index Z-scores in Children in New York City during the COVID-19 Pandemic.

Objectives: Determine whether the negative impact of the COVID-19 pandemic on weight gain trajectories among children attending well-child visits in New York City (NYC) persisted after the public health restrictions were reduced.

Study Design: Multicenter retrospective chart review study of 7,150 children aged 3 to 19 years seen for well-child care between January 1, 2018 and December 4, 2021 in the NYC Health and Hospitals system. Primary outcome was the difference in annual change of modified body mass index z-score (mBMIz) between the pre-pandemic and early- and late-pandemic periods. The secondary outcome was odds of overweight, obesity, or severe obesity. Multivariable analyses were conducted with each outcome as the dependent variable, and year, age category, sex, race/ethnicity, insurance status, NYC borough, and baseline weight category as independent variables.

Results: The difference in annual mBMIz change for pre-pandemic to early-pandemic = 0.175, [95% Confidence Interval (CI) 0.152, 0.198] and for pre-pandemic to late-pandemic=0.037, [95% CI 0.012, 0.061]. There was a statistically significant interaction between period and baseline weight category. Those with severe obesity at baseline had the greatest mBMIz increase during both pandemic periods and those with underweight at baseline had the lowest mBMIz increase during both pandemic periods.

Conclusions: In NYC, the worsening mBMIz trajectories for children associated with COVID-19 restrictions did not reverse by 2021. Decisions about continuing restrictions, such as school closures, should carefully weigh the negative health impact of these policies.