

Plant-based food packages linked to reduced BMI in children

June 22 2023



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A new study led by researchers from the Mass General Brigham healthcare system suggests that taking a "food is medicine" approach could increase nutrition security for families and lead to reductions in

body mass index (BMI) in children. Working together with the MGH Food Pantry, researchers from the Massachusetts General for Children and Boston Children's Hospital examined whether providing weekly plant-based foods to families seeking food assistance during the pandemic led to weight changes among children.

The team found an association between increasing receipt of food packages and decreased BMI. The findings, published in the journal *Preventing Chronic Disease*, add to a growing body of evidence that providing plant-based foods could be a useful strategy to prevent [childhood obesity](#) in children from food-insecure families.

"It's important to encourage healthy eating habits during childhood to help prevent co-morbidities associated with obesity later in life, but many families do not have access to expensive healthy foods, such as produce," said senior author Lauren Fiechtner, MD, MPH, Director of the Pediatric Nutrition Center at Mass General for Children and Health and Research Advisor at The Greater Boston Food Bank.

"Food pantries like MGH Revere that can provide families with healthy foods are a huge help in making sure that kids have a long, healthy future and have the best cardiovascular and metabolic health possible from a young age."

Food insecurity increased by 55% percent in the United States in 2020, affecting 42% of households with children. This increase was driven by a variety of factors, such as the [economic impacts](#) of the pandemic, the closure of schools, and disruption of food supply chains. As food insecurity increased, so did the prevalence of childhood obesity, rising from 19.3% to 22.4% between August 2019 and August 2020.

For families dealing with food insecurity, the challenge is usually one of food quality as much as food quantity.

"Children in families with food insecurity are frequently skipping meals or skipping food for a whole day because their [family](#) does not have enough money for food," said Fiechtner. "One way for parents to stretch a tight food budget and make sure their children are at least eating something is to buy the cheapest foods available, which are often not nutritious and contribute to obesity and other health problems."

To help mitigate the impacts of pandemic-related food insecurity on childhood obesity, the MGH Revere Food Pantry provided weekly plant-based food packages to families seeking food assistance. The packages contained fresh fruits and vegetables, nuts, and whole grains, and were adjusted to family size to provide enough for three meals per day for each member of the household.

Between January 1, 2021, and February 1, 2022, 107 children from 93 families, received weekly food packages, averaging about 27 packages per family for the whole study period.

The food packages were provided by the Massachusetts General Hospital (MGH) Revere Food Pantry, a partnership between MGH and The Greater Boston Food Bank. The MGH Revere Food Pantry has provided healthy food and nutritional education to families in the greater Boston area since it opened its doors in 2020.

"For dozens of families, the MGH Revere Food Pantry was a literal lifeline during the pandemic by providing free weekly packages of healthy food for the entire household," said study co-author Jacob Mirsky, MD, MA, DipABLM, Medical Director of the MGH Revere Food Pantry.

The researchers examined BMI during a baseline period prior to receiving food packages and then during a follow-up period using the Mass General Brigham electronic health record. At the start of the study,

57% of children in the study aged 2-18 years had a BMI at or above the 85th percentile. At follow-up, this number was reduced to 49%. The researchers also saw a decrease in BMI with each additional food family package received and estimated that children in households who received 27 weeks or more of packages may have had a BMI decrease of 1.08 kg/m² or more.

While the study focused specifically on the pandemic, the research suggests that these findings could carry over into strategies to address broader issues of [food insecurity](#) in the future.

"There was an immediate value to providing these food packages to support families during the pandemic, but we also enabled families and children to make healthier food choices, which we know is important to introduce when children are young," said first author Allison Wu, MD MPH, Attending Physician in Pediatric Gastroenterology, Hepatology & Nutrition at Boston Children's Hospital. Wu is a research collaborator and former research fellow in the Harvard-Wide Pediatric Health Services Research Program.

"This kind of support is not only important for their BMI in childhood, but also in informing how they choose foods and influencing what foods their families are preparing for them to promote overall health."

More information: Allison J. Wu et al, Plant-Based Family Food Packages and Weight Change in Children During the COVID-19 Pandemic, *Preventing Chronic Disease* (2023). [DOI: 10.5888/pcd20.220336](#)

Provided by Mass General Brigham

Citation: Plant-based food packages linked to reduced BMI in children (2023, June 22) retrieved 5 July 2023 from

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