

# Two interventions help improve weight management in children with overweight or obesity

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Two interventions that link clinical care with community resources helped improve key health measures in children with overweight or

obesity at the outset of the study. As reported in *JAMA Pediatrics*, both programs - developed by investigators at MassGeneral Hospital for Children (MGHfC) and Harvard Vanguard Medical Associates, a practice of Atrius Health - not only improved body mass index (BMI) in participants but also increased parents' sense that they had the information and resources to address their child's weight problem.

"More and more we recognize that, if we don't assist families in tackling the social and environmental conditions that impede their ability to make changes to their obesity-related behaviors, we will not be successful in pediatric weight management," says Elsie Taveras, MD, MPH, chief of General Pediatrics at MassGeneral Hospital for Children, who led the study. "To help us create our interventions we looked to families with [children](#) who had managed to improve their BMI, often under challenging environmental and social settings. These "positive outlier" families provided guidance on the content of health coaching, available resources in the community, language to use in motivating other families to change and the importance of building [parents'](#) confidence in taking on the challenge of reducing their child's excess weight."

The Connect 4 Health trial was conducted from June 2014 through March 2016 at six Harvard Vanguard pediatric practices in the Boston area and enrolled 721 children, ages 2 through 12, with a BMI in the overweight or obese range. Participants were randomly assigned to one of two interventions - enhanced primary care or enhanced primary care plus coaching.

Parents of those in both groups received educational materials focusing on key goals - decreasing screen time and consumption of sugar-sweetened beverages, improving diet quality, increasing moderate or vigorous physical activity, improving the quality and duration of sleep, and promoting social and emotional wellness. The enhanced primary care intervention - incorporating practices introduced at Harvard

Vanguard in recent years - included monthly text message to parents with links to publicly available resources to support behavioral change and a Neighborhood Resource Guide listing supportive facilities in their communities.

Parents of children in the enhanced primary care plus coaching group were contacted every other month - either over the phone, via videoconference or in person - by specially trained health coaches who provided individualized support through motivational interviewing, discussion of strategies for addressing and managing obesity risk factors, and identification of supportive resources in families' communities. Parents in the coaching groups also received additional educational materials after each coaching session and twice-weekly text messages or emails. Families were offered a free, one-month family membership in local YMCAs and invited to attend a program on healthy grocery shopping.

"Combatting obesity is an enormous challenge in pediatrics and identifying tools that are proven to make a difference in the health and well-being of our patients is essential," says co-author Daniel H. Slater, MD, chairman of Pediatrics at Atrius Health. "Our collaboration with Dr. Taveras' team and Connect 4 Health has been extremely rewarding and builds on the work that we have done together for more than a decade. Improvements - which include the electronic health record flagging of children with an unhealthy BMI, clinical decision support tools to help clinicians provide high quality care, and [educational materials](#) for parents to support self-guided behavior change - have all laid the groundwork for the two interventions tested in this study. It is gratifying to see that we can make a difference and improve our patients' health as well as their quality of life."

Along with comparing participants' BMI z scores - an age-specific measure used for children - at the beginning and end of the one-year

study period, the investigators surveyed parents regarding their child's health-related quality of life and their own sense of empowerment in managing their child's weight. At the end of the study parents were also asked whether they had received and were satisfied with study messages and materials and how their participation in the program affected their satisfaction with their child's health services.

In general, participants in both groups had improved BMI z scores at the end of the study period, with slightly greater improvement among those in the enhanced primary care plus coaching group. Comparisons with measurements taken a year before the outset of the study indicated that these reductions did not reflect previous trends towards a lower BMI; in fact, both groups had showed trends toward increasing BMI in the year before the study.

Parents of children in the enhanced primary care plus coaching group reported significant improvements in the child's health-related quality of life and parents in both groups reported an increased sense of empowerment. Most parents reported receiving and being satisfied with text messages and the Neighborhood Resource Guide, and satisfaction with the additional services provided to the coaching group was also high. Overall, 63 percent of parents in the enhanced primary care plus coaching group and 48 percent of those in the enhance care group felt their participation in the program increased their satisfaction with their child's [health](#) care services.

Study co-author Earlene Avalon, PhD, MPH, who chaired the Youth and Parental Advisory Board that helped create the two programs, says.

"This is such a relevant and important study because it takes a multi-pronged approach - not only looking at what the experts in the field are saying, but also asking people who walk the walk and deal with this daily to be architects of interventions and programs to tackle obesity. It is essential to consult people who have been successful and help them feel

empowered to contribute and share best practices. To promote the diversity of opinions we seek, we have to go above and beyond solely consulting the literature for true creativity and innovation to occur." Avalon is on the staff of Boston Children's Hospital and is an assistant professor of Health Management and Health Science at Northeastern University.

Taveras, a professor of Pediatrics at Harvard Medical School, says, "Our findings are pretty conclusive that there are three aspects of interventions for childhood obesity that work: improving clinical practices for obesity management; engaging and supporting families in behavior change; and linking families to community resources for further support. We're now testing a family-based intervention that starts working with mothers in pregnancy and their children ages 2 and under to support prevention and developing more aggressive weight management approaches for children with the most severe obesity, for whom the interventions in this study were not successful."

**More information:** *JAMA Pediatrics* (2017). [DOI: 10.1001/jamapediatrics.2017.1325](https://doi.org/10.1001/jamapediatrics.2017.1325)

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