

# Obesity prevention among low-income, diverse preschool-aged children and parents

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Childhood obesity is a serious health problem and disproportionately affects children of lower income and racial/ethnic minorities.

Contributing factors to [childhood obesity](#) include the neighborhood

environment, social influences, economic factors, the home environment, parenting behaviors, and child behavioral and biological factors. Previous pediatric obesity prevention interventions have been less effective than expected, perhaps in part due to the multifaceted nature of the problem.

Drs. Simone French and Nancy Sherwood, both professors in the University of Minnesota School of Public Health, led the NET-Works study, which was recently published in the *American Journal of Public Health*. The goal of the study was to integrate home visiting, community-based parenting classes, [primary care](#) provider interactions and neighborhood connection strategies to support low-income, racially and ethnically diverse parents to prevent obesity among their preschool-aged [children](#).

The NET-Works trial made unique contribution to the pediatric obesity prevention research area because of its community-based interventions, focus on low-income preschool-aged children, and multi-level [intervention](#) that includes home visiting, parenting classes, community links and pediatric primary care.

Participants were recruited in partnership with 12 Minneapolis-St Paul, Minnesota primary care clinics that serve diverse populations. Five hundred thirty-four children were randomized over an 18-month period. Fifty-eight percent of the children were Hispanic and 62.9 percent had annual household incomes of less than \$25,000 per year.

The NET-Works program consisted of home visiting, community-based parenting classes and telephone check-in calls. Referrals to community resources for healthy foods and physical activity opportunities were embedded in the home visiting and parenting class components. The home visit setting enabled behavior and home environment change strategies to be tailored for individual families, while the parenting class

setting provided group support for behavior changes.

"This high-intensity, accessible intervention was designed to provide support to parents over a three-year period," said French. "NET-Works program participation was highest during the initial 12 months, which was the period in the study in which child body mass index (BMI) seemed to be stable, compared with BMI gains during the later years of the intervention."

Key findings include:

- There were no significant differences between the NET-Works group and the comparison group in the primary outcome of the child's adjusted BMI at 24 and 36 months.
- NET-Works group consumed significantly fewer calories per day at 24 and 36 months compared with children in the comparison group.
- Intake of added sugars at 36 months was significantly lower among NET-Works children compared with those in the comparison group.
- There were no significant differences between groups in change in sedentary, light, moderate or vigorous physical activity at either 24 or 36 months.
- The NET-Works group's television viewing hours significantly decreased by 16 percent and 12 percent at 24 and 36 months, respectively, relative to the comparison group.
- Among children who were overweight at the beginning of the study, the NET-Works group had smaller increases in BMI compared to children in the comparison group.
- Among Hispanic children, the NET-Works group had smaller increases in BMI compared children in the comparison group.

"One of the takeaway messages from the study is that flexible amounts

of intervention contact and channels of delivery may optimize results for families at different time points in their lives," said Sherwood.

"Research that evaluates the effectiveness of varied combinations of intervention components and dose could be a useful approach to better understand how best to create family-optimized interventions."

Overall, the study found that family-based pediatric obesity interventions may need to focus on children who are already overweight or obese. Parents may be more motivated to make changes in the [home environment](#) and parenting behaviors if they perceive that their child already has a weight issue. Although participation rates were higher among Hispanic parents compared with non-Hispanic parents, participation was not significantly associated with smaller BMI gain among children over the three years of the intervention. Reasons for the NET-Works program's greater success among Hispanic parents and children are not clear, but are being explored in detail in further analysis of the data.

**More information:** Simone A. French et al. Multicomponent Obesity Prevention Intervention in Low-Income Preschoolers: Primary and Subgroup Analyses of the NET-Works Randomized Clinical Trial, 2012–2017, *American Journal of Public Health* (2018). [DOI: 10.2105/AJPH.2018.304696](https://doi.org/10.2105/AJPH.2018.304696)

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