

Household Routines and Obesity in US Preschool-Aged Children Sarah Anderson, PhDa, Robert C. Whitaker, MD, MPH, *Pediatrics* Vol. 125 March 1, 2010

ABSTRACT

OBJECTIVE: To determine the association between the prevalence of obesity in preschool-aged children and exposure to 3 household routines: regularly eating the evening meal as a family, obtaining adequate sleep, and limiting screen-viewing time.

METHODS: We conducted a cross-sectional analysis of a nationally representative sample of ~8550 four-year-old US children who were assessed in 2005 in the Early Childhood Longitudinal Study, Birth Cohort. Height and weight were measured. We assessed the association of childhood obesity (BMI \geq 95th percentile) with 3 household routines: regularly eating the evening meal as a family (>5 nights per week); obtaining adequate nighttime sleep on weekdays (\geq 10.5 hours per night); and having limited screen-viewing (television, video, digital video disk) time on weekdays (\leq 2 hours/day). Analyses were adjusted for the child's race/ethnicity, maternal obesity, maternal education, household income, and living in a single-parent household.

RESULTS: Eighteen percent of children were obese, 14.5% were exposed to all 3 routines, and 12.4% were exposed to none of the routines. The prevalence of obesity was 14.3% (95% confidence interval [CI]: 11.3%–17.2%) among children exposed to all 3 routines and 24.5% (95% CI: 20.1%–28.9%) among those exposed to none of the routines. After adjusting for covariates, the odds of obesity associated with exposure to all 3, any 2, or only 1 routine (compared with none) were 0.63 (95% CI: 0.46–0.87), 0.64 (95% CI: 0.47–0.85), and 0.84 (95% CI: 0.63–1.12), respectively.

CONCLUSIONS: US preschool-aged children exposed to the 3 household routines of regularly eating the evening meal as a family, obtaining adequate nighttime sleep, and having limited screen-viewing time had a 40% lower prevalence of obesity than those exposed to none of these routines. These household routines may be promising targets for obesity-prevention efforts in early childhood.

WHAT'S KNOWN ON THIS SUBJECT:

Many studies have shown an association between the amount of television-viewing and obesity; evidence is accumulating to link insufficient sleep to obesity, and some studies have shown an inverse association between frequency of family meals and obesity.

WHAT THIS STUDY ADDS:

Preschool-aged children exposed to 3 household routines of regularly eating dinner as a family, obtaining adequate nighttime sleep, and having limited screen-viewing time had a 40% lower prevalence of obesity than children exposed to none of these routines.

Despite interest in halting the childhood obesity epidemic through prevention efforts begun early in life,^{1,2} little is known about what approaches in early childhood are both acceptable to families and effective.^{3,4} An increasing number of young children are in child care settings,⁵ but preschool-aged children still spend the majority of their waking hours under the care of their parents,⁶ who have a large influence over many of the environmental factors that affect a child's risk of obesity.⁷

Although parents have great potential to prevent childhood obesity, engaging them in this effort is challenging. Mothers may not perceive that their overweight preschool-aged children are overweight⁸⁻¹⁰ and often feel that clinical counseling about children's weight criticizes their parenting abilities.^{11,12} Furthermore, during the preschool years, parents are often less concerned about their children's physical health than about their development.¹³ As a consequence, many parents may be more interested in learning how they can help their children succeed in school and get along with others than about how to help their children maintain a healthy weight. Given this clinical context and the lack of experimental evidence to support specific obesity-prevention strategies in early childhood, a potential approach is to encourage parents to adopt household routines that satisfy the following criteria: the routines (1) may offer protection against the development of childhood obesity, (2) may offer non-weight-related benefits, such as promoting children's social, emotional, and/or cognitive development, and (3) are unlikely to cause harm.¹⁴

Three of the most studied household routines that meet these criteria are regularly eating family meals, obtaining adequate sleep, and limiting screen-viewing time. Interventions to reduce television-viewing time in preschool-aged children have been implemented successfully,^{15,16} and such interventions have been demonstrated to have beneficial effects on children's BMI;¹⁶⁻¹⁸ observational studies have shown that higher BMI in children is associated with insufficient sleep¹⁹⁻²⁴ and a lower frequency of family meals.^{25,26} In addition to their potential to prevent obesity, each of these routines has been associated with non-weight-related benefits to children's well-being.²⁷⁻²⁹ However, we are aware of no studies that have examined the association between the combination of these routines and obesity in preschool-aged children.

By using data collected in 2005 on a nationally representative sample of US 4-year-old children, we examined the prevalence and cross-sectional association between obesity and a combination of 3 household routines: regularly eating the evening meal (dinner) as a family; obtaining an adequate amount of nighttime sleep; and limiting screen-viewing time (television/video/DVD).

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