

Environmental Risks for Overweight in Preschool Children

Julie Lumeng, MD
Assistant Professor

Division of Child Behavioral Health, Department of Pediatrics
Assistant Research Scientist
Center for Human Growth and Development
University of Michigan



UNIVERSITY OF MICHIGAN
THE CENTER FOR HUMAN
GROWTH AND DEVELOPMENT



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Are women responsible for obesity among children?

Women have been blamed for many of the world's problems since Eve in the Garden of Eden . . . the theory is that when American women started to enter the workforce en masse in the 1970s and '80s, kids started getting fatter. . .

Child Care and Obesity Risk

- Does attending child care, in and of itself, as opposed to being home with one's mother, predict an increased risk of obesity among 3-5-year-old children?

Child Care and Obesity Risk

Study 1:

Objective: To determine if attending child care between ages 3 to 5 years is associated with an increased risk of overweight at ages 6 to 12 years.

Methods:

- Parents reported child care attendance on 1244 children between ages 3 to 5 years.
- Children were followed up at ages 6 to 12 years with reported weights and heights.

Child Care and Obesity Risk

Results:

- Attending part time child care (>0 but <15 h/week), compared to no child care, was associated with reduced risk of obesity in later childhood.
- Attending child care more than 15 h/week was not associated with any different risk for obesity than staying home with one's mother full time.
- These findings were independent of child gender, race, age, poverty status, birth weight, hours of television per day, behavior problems, or quality of the home environment.

Child Care and Obesity Risk

Conclusions:

- Attending some child care appears to be *protective* against obesity, if it has any effect at all, and this effect appears to be regardless of whether the child lives in poverty or the quality of the home environment.

JC Lumeng, K Gannon, D Appugliese, HJ Cabral, B Zuckerman. Preschool child care and risk of overweight in 6- to 12-year-old children. *International Journal of Obesity* (2005) 29, 60–66.

Child Care and Obesity Risk

Study 2:

- NICHD Study of Early Child Care and Youth Development
- We examined child care experience from birth to 54 months and prevalence of childhood obesity at both 54 months and 1st grade
- No consistent relationship between child care experience and obesity risk up to 1st grade

Child Care and Obesity Risk

Study 3:

- The sample included 1607 children (59% white, 25% African American).
- During the academic year in Head Start, the prevalence of obesity decreased from 17.4 to 15.1% ($p < .01$).
- During the summers preceding and following Head Start enrollment, the prevalence of overweight rebounded (14.9 to 17.4%, $p < .05$ and 14.5 to 17.8%, $p < .05$).
- Conclusion: Head Start seems to have beneficial effects on children's weight status, but these effects seem to dissipate during times when children are not attending (e.g. summers)

Unique Aspects of Child Care that May Contribute to Eating Behavior

Eating behavior and group size

Animals eat more when in the presence of other animals than when alone

- Rats (Harlow 1932, Hoyenga 1969)
- Chicks (Tolman 1965)
- Monkeys (Harlow 1933)
- Puppies (James 1960)



Do Children Also Eat More in Groups than when Alone?



Why Would Individuals Eat More in Groups?

- Mechanism
 - Animals
 - Arousal
 - Competition
 - Adult Humans
 - Sit at table longer socializing
 - The longer they are at the table, the more they eat
 - Not arousal

Methods

- 54 children in preschool, ages 2.5 – 6 years
- Each child served graham cracker snack while eating in a group of 3 children, and in a group of 9 children during regular day in preschool
- Amount consumed measured
- Behavior coded from videotape

Results

- Children consumed 30% more when eating in larger (compared to smaller) groups
- In larger groups, children:
 - Began eating sooner after sitting down
 - Ate faster once they started eating
 - Socialized less

Implications

- Children eat more in larger groups, just like animals
- Mechanism of increased consumption is the same as in animals: increased arousal

JC Lumeng, KH Hillman. Larger group size increases consumption: Social facilitation of eating behavior in children. *Archives of Disease in Childhood*. 2007; 92: 384-387.

Implications

- Under-eating
 - Support for eating in social environments to increase intake?
- Overeating
 - Support for recommendations to eat family meals at home as opposed to out in restaurants
 - Support for small eating groups in child care



The New York Times
nytimes.com

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VITAL SIGNS

Behavior: More Children, Eating More Graham Crackers

By ERIC NAGOURNEY

Puppies do it. Chickens do it. Even preschoolers do it.

That is the finding of a new study that looked not at falling in love but at how children eat when they are in larger groups. Like animals, the researchers found, the preschoolers ate more.

Summary

- It is difficult to detect a consistent, uniform effect of child care in and of itself on children's risk of overweight or obesity.
- It appears that, if anything, child care may reduce risk of obesity in certain populations.
- Likely more important than simply attending child care is what occurs within individual child care settings, and aspects of child care environments that are unique

Summary

- Child care is an area ripe for intervention in the struggle against childhood obesity
- Regulations and staff education
 - Directly impact obesity risk
 - Serve as a model for families
 - Portion size
 - Healthy foods
 - Physical activity
 - Limiting TV viewing