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ORIGINAL RESEARCH COMMUNICATION

Portion size effects on daily energy intake in low-income Hispanic and African American children and their mothers^{1,2,3}

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Background: Portion size influences children's energy intakes at meals, but effects on daily intake are unknown.

Objective: Effects of large portions on daily energy intake were tested in 5-y-old Hispanic and African American children from low-income families. Maternal food intake data were collected to evaluate familial susceptibility to portion size.

Design: A within-subjects experimental design with reference and large portion sizes was used in a study of 59 low-income Hispanic and African American preschool-aged children and their mothers. The portion size of 3 entrées (lunch, dinner, and breakfast) and an afternoon snack served during a 24-h period were of a reference size in one condition and doubled in the other condition. Portion sizes of other foods and beverages did not vary across conditions. Weighed food intake, anthropometric measures, and self-reported data were obtained.

Results: Doubling the portion size of several entrées and a snack served during a 24-h period increased energy intake from those foods by 23% (180 kcal) among children ($P < 0.0001$) and by 21% (270 kcal) among mothers ($P < 0.0001$). Child and maternal energy intakes from other foods for which portion size was not altered did not differ across conditions. Consequently, total energy intakes in the large-portion condition were 12% ($P < 0.001$) and 6% ($P < 0.01$) higher in children and mothers, respectively, than in the reference condition. Child and maternal intakes of the portion-manipulated foods were not correlated.

Conclusions: Large portions may contribute to obesigenic dietary environments by promoting excess daily intakes among Hispanic and African American children.

Key Words: Portion size • energy intake • eating behavior • obesity

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