

Calcium Intake and Body Composition in Children

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Since dietary habits are typically established during childhood, optimal prevention and treatment strategies for obesity must begin early in life. The purpose of this study was to investigate the relationship between calcium intake and body composition in children.

This study used baseline data collected from the Youth and Adolescents Healthy Osteo Outcomes study. In the current analysis, 280 Caucasian ($n = 216$) and African American ($n = 64$) adolescents between the ages of 8-18 were included. Body composition was assessed via DEXA Hologic 2000 technology ($r > 0.93$, $p < .0001$). Total estimated energy intake was measured using the Block Food Frequency Questionnaire (FFQ) and calcium intake was obtained using a Calcium Rapid Assessment Method.

A block-entry approach was taken to determine whether calcium could predict body fat %, body fat (g), and lean mass if the possible effects of non-modifiable variables (age, gender, and race) and modifiable variables (caloric intake and expenditure) were controlled. The covariates in Block 1 (age, gender, and race) were entered, and explained 20.9% of the variance in body fat % and 19.4% of the variance in body fat (g). Block 2 (caloric intake, energy expenditure, and calcium intake) was entered into the regression, explaining an additional 7.6% of the variance in body fat % and 5.8% of the variance in body fat (g). The regression results for the entire models (blocks 1 and 2) were significant with body fat percentage, body fat (g), and lean mass as dependent variables. However, this analysis found no significant relationship between calcium intake and lean mass.

Less than 15% of adolescent girls and 37% of adolescent boys get recommended amounts of calcium. This study uncovered a relationship between low calcium intake and higher body fat in children. The present findings will aid future researchers as they explore childhood obesity and will add to existing literature as this topic gains attention in both popular press and scientific journals.