SUMMARIES

Biobehavioral Factors are Associated with Obesity in Puerto Rican Children

**OBJECTIVE**
To identify predictors of obesity among Puerto Rican children from Hartford, CT.

**STUDY DETAILS**
– Case-control study of 53 Puerto Rican children aged 7.2 to 11 years
– Children were classified as obese (body mass index [BMI] ≥85th percentile) or controls (BMI ≤85th percentile)
– 31 girls (19 obese, 12 controls) and 22 boys (10 obese, 12 controls)
– One 24-hour recall with a 4-stage protocol and a 71-item food frequency questionnaire with items classified into 11 “food categories” were used to assess dietary intakes
– Weight, height, triceps skinfold, waist and hip circumference measurements of children and their mothers were taken
– Physical activity was assessed through a 13-item physical activity questionnaire, modified for the target group
– Blood pressure and health assessments (incidence of common childhood illnesses) were also recorded
– Exclusions included diagnosed endocrine conditions that could lead to obesity, children whose weight for height was less than 5th percentile and girls that had already reached menarche

**KEY FINDING**
Lower dairy intake and higher frequency of fruit juice consumption, hours of daily TV watching and maternal BMI were all significantly associated with higher BMI.

**RESULTS**
– Obese children were significantly heavier and taller and had larger triceps skinfolds (which was strongly associated with their BMI) than non-obese children
– Their mothers were likewise significantly heavier, and had significantly larger BMIs and triceps skinfolds
– Obese children consumed more “fruit juice” (possibly includes fruit drinks) than controls (2.38 vs. 1.41, *p*=0.01) and fruit juice consumption was positively correlated with BMI (*p*=0.005) and triceps skinfold (*p*=0.009)
– Obese girls tended to consume less dairy (*p*=0.054) than controls, but this difference was not detected among boys
– A significant negative association was found between the intake of dairy products and BMI (*p*=0.03)
– Obese girls consumed significantly less calcium than controls (*p*=0.02)
– Obese children had similar total energy intakes but lower energy intakes per kilogram of body weight (*p*=0.001) compared to controls
– TV viewing was significantly (*p*<0.05) correlated with lower physical activity in girls and with higher snacking frequency and sweets consumption in boys (*p*=0.003)
– Significant positive predictors of obesity were lower dairy product intake and higher frequency of fruit juice consumption, hours per day of weekday TV viewing and maternal BMI, after multivariate regression analysis
Obese children had almost four times more ear infections \((p=0.01)\) and had significantly higher systolic and diastolic blood pressures \((p<0.01)\).

TV viewing, fruit juice consumption and mother’s BMI have also been associated with childhood obesity in children of other ethnic groups, suggesting that the key determinants are common to different cultures.

![Factors associated with odds of developing obesity in low income children](image)

**Factors associated with odds of developing obesity in low income children**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Odds Ratio</th>
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<tbody>
<tr>
<td>Mother’s BMI (kg/m²)</td>
<td>1.39</td>
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<tr>
<td>TV viewing (hours/day)</td>
<td>1.86</td>
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<tr>
<td>Fruit juice (daily frequency)</td>
<td>4.02</td>
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<tr>
<td>Low dairy (daily frequency)</td>
<td>0.41</td>
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</tbody>
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Tanasescu et al. 2000