**OBJECTIVE**
To identify the role of dairy and calcium intake on body fat and weight among Asian and Caucasian young girls.

**STUDY DETAILS**
- Cross-sectional analysis of the baseline measures of an ongoing longitudinal study of 323 healthy young girls aged 9 to 14 years residing on the island of Oahu, Hawaii
- Exclusions included any participants with any chronic disease or those using steroids, asthma and antiepileptic medications
- Dietary intake was measured by a 3-day dietary record including 2 weekdays and 1 weekend day (completed with the parents’ assistance)
- Weight, height and iliac skinfold thickness were measured
- Tanner breast stage was assigned by one of 2 nurse practitioners
- The girls completed a physical activity retrospective questionnaire

**Factors influencing body weight and body fat (as measured by iliac skinfold thickness) in adolescent girls assessed by multiple regression analysis**

<table>
<thead>
<tr>
<th>Negative (Inverse) Associations</th>
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<tbody>
<tr>
<td>– An increase in total calcium intake or dairy calcium was associated with a significant decrease in body fat ( p = 0.01 ) and ( 0.02 ) respectively</td>
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<td>– As age or physical activity increased body fat decreased significantly ( p \leq 0.05 )</td>
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<tr>
<td>– In girls of Asian ancestry, an increase in dairy calcium was associated with a significant greater decrease in body fat ( p = 0.0027 )</td>
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<th>Positive Associations</th>
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<tr>
<td>– An increase in body weight was significantly associated with an increase in total energy and soda intake ( p \leq 0.05 )</td>
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<td>– One can (341.6 g) of soda was associated with 1.7 kg increase in body weight</td>
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<td>– Soda could influence weight by increasing energy intake or by replacing milk</td>
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<tr>
<td>– An increase in body fat and body weight was significantly associated with height, Tanner breast stage and Pacific Islander ethnicity ( p \leq 0.05 )</td>
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Novotny et al. 2004
**KEY FINDING**

Total calcium and dairy calcium intakes were both significantly associated with lower adiposity among adolescent girls.

Dairy calcium had a significantly stronger association with lower body fat than total calcium intake and its effect was greater among girls of Asian ancestry than Caucasians.

Consumption of soda was significantly associated with increased body weight.

**RESULTS**

– Energy intake was slightly underreported
– Calcium intake was 736 mg/day, much lower than the Dietary Reference Intake (DRI) of 1300 mg/day
– Dairy intake of 1.4 servings/day was half of the three servings recommended by the Food Guide Pyramid (and Canada’s Food Guide)
– Calcium intake from dairy products was almost twice that of non-dairy calcium intake ($p<0.001$)
– Milk provided 66% of adolescent dairy intake
– Calcium intake from diet was six times higher than from supplements ($p<0.001$)
– Non-dairy calcium was not associated with either body weight or body fat, which suggests the dairy portion of the calcium intake is the key factor
– The authors suggest that calcium may require other components from milk for its activity or it may be a marker for other bioactive components of milk
– One serving of milk a day was associated with 0.78 mm smaller iliac skinfold thickness. The effect was stronger in Asians (1.89 mm smaller) than in Caucasians