Dairy intake in relation to breast and pubertal development in Chilean girls

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Resumen

Background: Frequent dairy consumption in childhood has been related to higher growth-hormone concentrations that may affect mammary gland and pubertal development.

Objective: We evaluated the relation of dairy intake to breast composition at Tanner stage 4 and age at menarche.

Design: A total of 515 Chilean girls are included in the Growth and Obesity Cohort Study. The subjects have been followed longitudinally since they were 3-4 y old (from 2006 to the present). Starting in 2013, diet was assessed every 6 mo via a 24-h recall. The breast fibroglandular volume (FGV) was measured with the use of dual-energy X-ray absorptiometry at Tanner stage 4. The date of menarche was reported every 6 mo. Our analysis included 290 girls with data on prospective diet and breast composition and 324 girls with data on prospective diet and age at menarche.

Results: The mean +/- SD breast FGV and percentage of fibroglandular volume (%FGV) (i.e., FGV divided by total breast volume times 100) at Tanner stage 4 was 81.7 +/- 6 32.2 cm(3) and 42.0% +/- 16.7%, respectively. Only sweetened, artificially flavored milk-based drinks were associated with the %FGV with girls who consumed > 125 g/d having a %FGV that was 4.5% (95% CI: 0.9%, 8.1%) higher than that of girls who consumed none (P-trend = 0.007). Yogurt intake was associated with a lower FGV. Specifically, girls who consumed > 125 g yogurt/d had -10.2 cm(3) (95% CI: -20.2, -0.3 cm(3)) less FGV than did girls who consumed no yogurt (P-trend = 0.03). The majority (90.7%) of girls in our cohort attained menarche before the data analyses with a mean +/- SD age at menarche of 11.9 +/- 6 0.7 y. In multivariable models, low-fat dairy, low-fat milk, and yogurt intakes were associated with a later age at menarche. In particular, girls who consumed > 125 g yogurt/d had menarche, on average, 4.6 mo (95% CI: 1.9, 7.4 mo) later than girls who consumed no yogurt (P-
trend = 0.01).

Conclusion: More-frequent consumption of sweetened, artificially-flavored milk-based drinks is associated with a higher %FGV, whereas higher yogurt intake is associated with a lower FGV and delayed age at menarche in Chilean girls.

**Palabras clave**

**Palabras clave de autor:** age at menarche; breast composition; dairy; development; puberty

**KeyWords Plus:** GROWTH-FACTOR-I; MAMMOGRAPHIC DENSITY; IGF-I; POSTMENOPAUSAL WOMEN; ESTROGEN METABOLITES; SOCIOECONOMIC-STATUS; TISSUE COMPOSITION; MILK CONSUMPTION; ADOLESCENT GIRLS; CANCER RISK

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