Abstract

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Association of low intake of milk and vitamin D during pregnancy with decreased birth weight.

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BACKGROUND: Some pregnant women may be advised or choose to restrict milk consumption and may not take appropriate supplements. We hypothesized that maternal milk restriction during pregnancy, which can reduce intakes of protein, calcium, riboflavin and vitamin D, might represent a health risk by lowering infant birth weight.

METHODS: We screened women between the ages of 19 and 45 years who were attending prenatal programs in Calgary, Alberta (51 degrees N) for low milk consumption (< or = 250 mL/d). Using repeat dietary recalls, we compared these women and their offspring with women whose daily milk consumption exceeded 250 mL (1 cup). Birth weight, length and head circumference were obtained from birth records.

RESULTS: Women who consumed < or = 250 mL/d of milk (n = 72) gave birth to infants who weighed less than those born to women who consumed more (n = 207; 3410 g v. 3530 g, respectively; p = 0.07). Infant lengths and head circumferences were similar. Women who restricted milk intake had statistically significantly lower intakes of protein and vitamin D as well. In multivariate analyses controlled for previously established predictors of infant birth weight, milk consumption and vitamin D intake were both significant predictors of birth weight. Each additional cup of milk daily was associated with a 41 g increase in birth weight (95% confidence interval [CI] 14.0-75.1 g); each additional microgram of vitamin D, with an 11 g increase (95% CI 1.2-20.7 g). Neither protein, riboflavin nor calcium intake was found to predict birth weight.

INTERPRETATION: Milk and vitamin D intakes during pregnancy are each associated with infant birth weight, independently of other risk factors.

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