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Body Mass Index and Dietary Intake of Thiamin: Evidence for a Sexually Dimorphic Relation

S. Chen and A. Vieira

Nutrition & Metabolic Research Laboratory and IHRE, School of Kinesiology, Simon Fraser University, Burnaby, BC, CANADA

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ABSTRACT Body mass index (BMI) correlates with several anthropometric parameters including body adiposity. Comparisons of genetic and environmental factors have resulted in a heritability estimate for BMI of about 70%. Thiamin is a vitamin involved in energy metabolism and metabolic pathways for carbohydrates, amino acids, and fatty acids. This vitamin functions as a coenzyme for transketolase and three dehydrogenases that catalyze decarboxylation of a-ketoacids; it has also been proposed as a fatty acid-CoA lysase. Herein, we report on the association of thiamin intake with BMI, and the observed opposite gender effects. A significant positive ($P < 0.05$) correlation of thiamin intake/kcal with BMI was found among adult males; and a significant negative correlation ($P < 0.05$) was found among adult females. Based on reports that physiological levels for this vitamin can reflect dietary intake, possible metabolic reasons are presented for influences of thiamin on BMI and for the observed sexual dimorphism of this relation.