

Impact of Dairy Intolerance on Acute B-Vitamin Response Post Milk Ingestion [†]

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Background: Milk is as an excellent source of B-vitamins, particularly riboflavin. However, postprandial B-vitamin appearance in circulation has not been fully described following milk ingestion, nor is there any data on whether dairy intolerance alters this response. Hence, this study aimed to investigate the postprandial B-vitamin response to acute milk ingestion in individuals with self-reported dairy tolerance and intolerance.

Methods: Young female participants ($n = 40$) in this study underwent a lactose challenge (50 g) for determination of tolerant ($n = 10$), lactose intolerant ($n = 10$) or dairy intolerant ($n = 20$; self-reported dairy intolerance, but not lactose intolerant) individuals. All participants ingested 750 mL of bovine conventional milk (CM), lactose-free milk (LFM) and a2 MilkTM (a2M) in a double-blind randomised crossover trial. Plasma samples collected at fasting and hourly until 3 h were analysed for B-vitamins using high performance liquid chromatography coupled with mass spectrometry.

Results: Plasma riboflavin concentrations increased in all groups 1 h after consuming all milk types. The dairy intolerant individuals had an overall blunted riboflavin response to milk ingestion, particularly with LFM ($p = 0.004$), when compared to the lactose intolerant group.

Conclusions: Dairy intolerant, but not lactose intolerant, individuals have a blunted rise in riboflavin following milk ingestion, particularly following ingestion of LFM. Hence, both the type of milk and self-reported dairy intolerance impact on the post-meal concentrations of riboflavin. Further analyses are required to clarify why self-reported dairy intolerance, when lactose intolerance is absent, alters the plasma riboflavin response to LFM.

Supplementary Materials: The poster is available online at www.mdpi.com/2504-3900/8/1/23/s1.



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