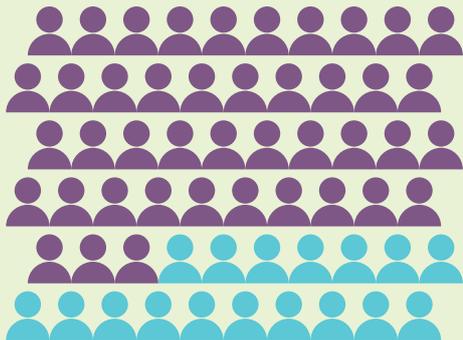
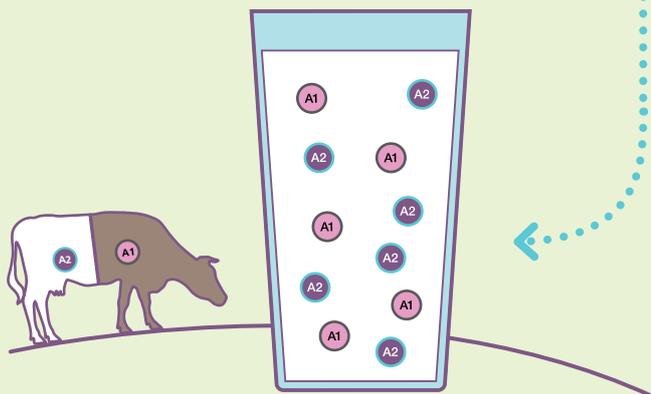


A 2017 STUDY REPORTS MILK-RELATED GASTROINTESTINAL SYMPTOMS MAY RESULT FROM INGESTION OF A1 BETA-CASEIN RATHER THAN LACTOSE IN SOME INDIVIDUALS



☺ = 10 people

600 Chinese subjects with self-reported lactose intolerance, 430 of whom were classified as lactose malabsorbers via a urinary galactose test, participated in a three-centre, double blind, randomized, 2 x crossover trial that involved consuming a single dose of conventional milk (containing both A1 and A2 beta-casein proteins*) and milk containing only A2 beta-casein protein.



When subjects consumed 300ml of conventional milk with both A1 and A2 beta-casein with the effects being measured at 1, 3 and 12 hours, acute gastrointestinal symptoms increased in the majority of subjects, including in both lactose malabsorbers and lactose absorbers.



When subjects, including those identified as lactose malabsorbers, consumed 300ml of A1 beta-casein free milk, acute gastrointestinal symptoms were significantly reduced in the majority of subjects.



Effects of cow's milk beta-casein variants on symptoms of milk intolerance in Chinese adults: a multicentre, randomised controlled study

Mei He, Jianqin Sun, Zhuo Qin Jiang and Yue Xin Yang. Nutrition Journal (2017) 16:72

Abstract

Background: A major protein component of cow's milk is β -casein. The most frequent variants in dairy herds are A1 and A2. Recent studies showed that milk containing A1 β -casein promoted intestinal inflammation and exacerbated gastrointestinal symptoms. However, the acute gastrointestinal effects of A1 β -casein have not been investigated. This study compared the gastrointestinal effects of milk containing A1 and A2 β -casein versus A2 β -casein alone in Chinese adults with self-reported lactose intolerance.

Methods: In this randomised, crossover, double-blind trial, with a 3-day dairy washout period at baseline, subjects were randomised to consume 300 mL of milk containing A1 and A2 β -casein (ratio 58:42; conventional milk) or A2 β -casein alone; subjects consumed the alternative product after a 7-day washout period. Urine galactose was measured at baseline after a 15 g lactose load. Subjects completed 9-point visual analogue scales for gastrointestinal symptoms (borborygmus, flatulence, bloating, abdominal pain, stool frequency, and stool consistency) at baseline and at 1, 3, and 12 h after milk consumption.

Results: A total of 600 subjects were included. All six symptom scores at 1 and 3 h were significantly lower after consuming A2 β -casein versus conventional milk (all $P < 0.0001$). At 12 h, significant differences remained for bloating, abdominal pain, stool frequency, and stool consistency (all $P < 0.0001$). Symptom scores were consistently lower with A2 β -casein in both lactose absorbers (urinary galactose ≥ 0.27 mmol/L) and lactose malabsorbers (urinary galactose < 0.27 mmol/L).

Conclusions: Milk containing A2 β -casein attenuated acute gastrointestinal symptoms of milk intolerance, while conventional milk containing A1 β -casein reduced lactase activity and increased gastrointestinal symptoms compared with milk containing A2 β -casein. Thus, milk-related gastrointestinal symptoms may result from the ingestion of A1 β -casein rather than lactose in some individuals.