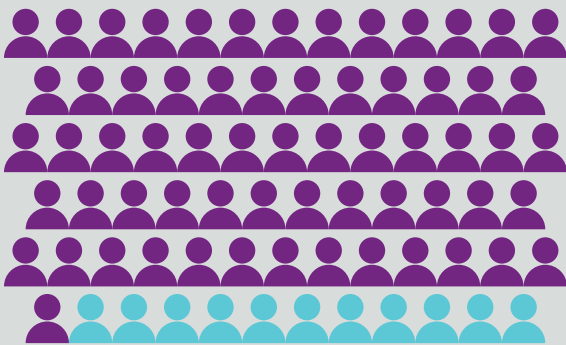
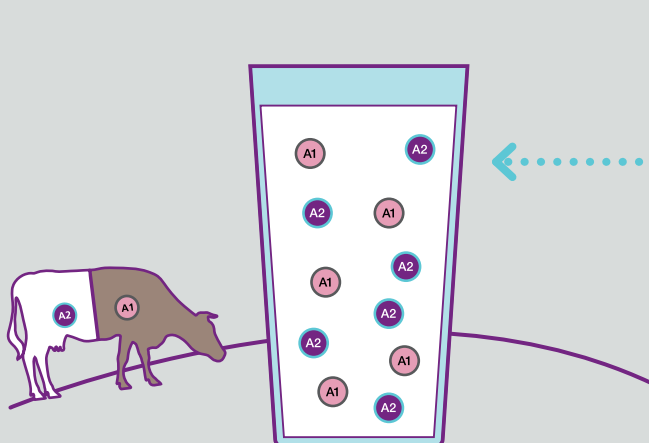


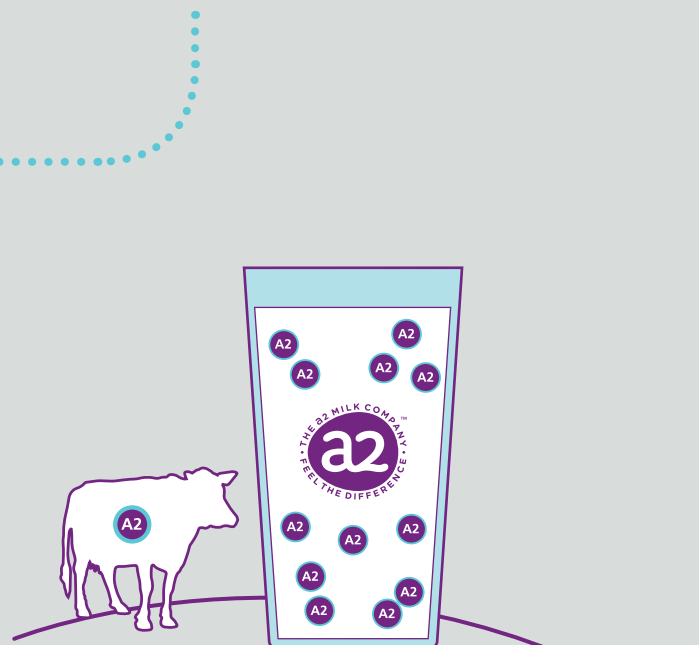
## A 2019 TRIAL REPORTS REPLACING CONVENTIONAL MILK WITH MILK CONTAINING ONLY A2 BETA-CASEIN REDUCED GASTROINTESTINAL SYMPTOMS ASSOCIATED WITH MILK INTOLERANCE IN CERTAIN CHILDREN



75 Chinese children aged 5-6 years with mild to moderate milk intolerance, 64 of whom were diagnosed via urinary galactose test as lactose intolerant (LI), participated in a multicentre, double-blind, randomized, 2 x 2 crossover trial that involved consuming conventional milk (containing both A1 and A2 beta-casein proteins\*) and milk containing only A2 beta-casein protein.



When the children consumed 2 x 150mL per day of conventional milk with both A1 and A2 beta-casein for 5 days gastrointestinal symptom scores increased in many of the children.



When the children consumed milk containing only A2 beta-casein gastrointestinal symptom scores were lower than scores after consuming conventional milk, and remained at a level similar to baseline.

# Effects of Conventional Milk Versus Milk Containing Only A2 $\beta$ -Casein on Digestion in Chinese Children: A Randomized Study

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## Abstract

**Objectives:** In this study, we hypothesized that replacing conventional milk, which contains A1 and A2  $\beta$ -casein proteins, with milk that contains only A2  $\beta$ -casein in the diet of dairy or milk-intolerant preschoolers (age 5 to 6 years) would result in reduced gastrointestinal symptoms associated with milk intolerance, and that this would correspond with cognitive improvements.

**Methods:** This randomized, double-blind, crossover study aimed to compare the effects of 5 days' consumption of conventional milk versus milk containing only A2  $\beta$ -casein on gastrointestinal symptoms, as assessed via visual analog scales, average stool frequency and consistency, and serum inflammatory and immune biomarkers in healthy preschoolers with mild-to-moderate milk intolerance. The study also aimed to compare changes in the cognitive behavior of preschoolers, based on Subtle Cognitive Impairment Test scores.

**Results:** Subjects who consumed milk containing only A2  $\beta$ -casein had significantly less severe gastrointestinal symptoms as measured by visual analog scales, reduced stool frequency, and improvements in stool consistency, compared with subjects consuming conventional milk. There were significant increases from baseline in serum interleukin-4, immunoglobulins G, E, and G1, and beta-casomorphin-7 coupled to lower glutathione levels, in subjects consuming conventional milk compared with milk containing only A2  $\beta$ -casein. Subtle Cognitive Impairment Test analysis showed significant improvements in test accuracy after consumption of milk containing only A2  $\beta$ -casein. There were no severe adverse events related to consumption of either milk product.

**Conclusions:** Replacing conventional milk with milk containing only A2  $\beta$ -casein reduced gastrointestinal symptoms associated with milk intolerance in Chinese preschool children, with corresponding improvements in aspects of cognitive performance.