

Effect of the microbial lactase (EC 3.2.1.23) activity in yoghurt on the intestinal absorption of lactose: an in vivo study in lactase-deficient humans.

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Breath hydrogen excretion was measured in eight lactase (EC 3.2.1.108)-deficient volunteers ingesting 18 g lactose in the form of milk, yoghurt and heated yoghurt. Total excess hydrogen excretion (area under curve) was significantly lower after yoghurt and heated yoghurt, than after milk: 103 (SE 29), 191 (SE 32), and 439 (SE 69) respectively (P less than 0.001). The oro-caecal transit time of fermentable components from yoghurt and heated yoghurt (mainly lactose) was longer than that from milk: 165 (SE 17), 206 (SE 19), v. 103 (SE 19) min (P less than 0.01). An intestinal perfusion technique was used in the same subjects after ingestion on two consecutive days of 18 g lactose in yoghurt and heated yoghurt. Significantly less lactose was recovered from the terminal ileum after yoghurt than after heated yoghurt meals: 1740 (SE 260) v. 2825 (SE 461) mg (P less than 0.05), and approximately one-fifth of the lactase activity contained in yoghurt reached the terminal ileum. These findings indicate that more than 90% of the lactose in yoghurt is digested in the small intestine of lactase-deficient subjects and suggest that both the lactase activity contained in the viable starter culture and a slow oro-caecal transit time are responsible for this excellent absorption.