

DIETARY LACTOSE INTAKES AND ESTIMATED PREVALENCES OF MALDIGESTION IN AUSTRALIA AND NEW ZEALAND

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Lactose maldigestion is widespread throughout many of the world's populations except for a small number of countries such as Australia and New Zealand where most individuals are capable of digesting lactose adequately. Within these two countries, however, there are some groups who have high rates of lactose maldigestion and develop symptoms of intolerance such as diarrhoea, abdominal pain and production of gas. If left unchecked, dehydration and malnutrition can develop. Very little information is known about lactose intakes and whether high or low intakes of lactose affect the intakes of any other nutrients. Estimations of lactose consumption were analysed from data obtained from children, adults and the elderly in different populations.

Lactose is present in moderate amounts in the diets of Australians and New Zealanders. Dairy products are the major contributors of lactose with milk supplying over 70% of the total lactose intake. Estimated intakes of lactose (g/day) for the different age groups in Australia are shown in Table 1.

Table 1. Mean (\pm SEM) daily lactose intakes (g/day) estimated from quantified food frequency questionnaires

	Total	Male	Female
Five year old children	356	10 \pm 0.5	10 \pm 0.4
Ten year old children	309	30 \pm 1.5	26 \pm 1.3
Adults (18-80+ years)	1767	22 \pm 0.5	19 \pm 0.4
Elderly (65+ years)	1304	20 \pm 0.5	19 \pm 0.5

Calcium intakes were significantly lower in the diets of low vs high lactose consumers in all age-groups ($P < 0.01$). This raises questions concerning the possible association between low lactose intakes, lactose intolerance and the risk of developing osteoporosis. In addition, the high lactose consuming adults also had higher intakes of saturated fat, and cholesterol and their diets had a lower polyunsaturated to saturated fat ratio. Interestingly, those with high intakes of lactose had a lower alcohol consumption compared to the low-lactose consumers. These differences that relate to lactose intakes may have long-term effects on health.

Since the loss of the lactase enzyme is genetically programmed, the prevalence of lactase non-persistence varies markedly with ethnicity. Estimations of the prevalence of maldigestion in different populations in Australia and New Zealand are as follows (in decreasing order of prevalence); Aboriginals, Asians, Maoris, Greeks and other Southern European groups, Samoans in New Zealand, and Caucasians.

Further research needs to define the exact prevalence of lactose maldigestion in all age-groups in multi-cultural societies, especially in infants. The role of foods such as lactose-free and low lactose products may become more defined as we find out more about lactose.