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Dietary acculturation of Chinese in the Manawatu  
in association with risk factors  
for type 2 diabetes

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requirements for the degree of

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## Abstract

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Acculturation is known to affect migrants' dietary habits and eating patterns. To evaluate the influence on the diets of Chinese migrants who have settled in New Zealand and its relation to risk factors for type 2 diabetes mellitus, a total of 46 self-selected participants took part in this 2006 dietary acculturation study in the Manawatu region. The majority was from Mainland China, and more than 40% of the entire group had a family history of diabetes, which was possibly the underlying motivation for them to take part in this study. In addition, Chinese participants were less likely to visit their preferred General Practitioners regularly, unless they felt unwell, when compared to New Zealand population.

The participants' acculturation levels were evaluated by the Suinn-Lew Asian Self-identify scale, and most of the participants identified themselves as Asian. The entire group was divided into two acculturation groups (Low and High) by using a cut-off point (2.0) from the acculturation scores. Three demographic variables, arrival age, residency length, and current age, were investigated. It was significant that the residency length was negatively associated with the acculturation score ( $P < 0.001$ ). Participants who had younger arrival ages gained higher acculturation scores; they had become more acculturated to Western culture.

Food frequency questionnaires and 24-hour dietary recalls were used to collect the participants' dietary information. The participants with high acculturation scores were more likely to consume Western-style foods more frequently, and to have sedentary lifestyles. In contrast, participants with low acculturation scores were more likely to have traditional eating patterns. In addition, participants with high acculturation scores consumed morning or afternoon tea more frequently than those people in the low acculturation group ( $P < 0.05$ ); having morning or afternoon tea is popular in New Zealand. Breakfast was the first meal to be Westernised among the study participants. One of the significant findings was

that energy intakes from dietary fat were 36.4% (females) and 38.6% (males), and these were higher than the recommended less than 35% of total energy intake from fat. Also, low dietary intakes of vitamin D, calcium and folate, together with an extreme high sodium intake, were observed in the study group.

To provide additional data, body weight, height, waist and hip circumferences were measured in this study. The BMI values, waist circumference and W/H ratio were used as markers of risk factors for heart diseases and diabetes. Based on the Chinese Standards for BMI and waist circumference, more than 50 percent of male participants were considered as either overweight or obese. Furthermore, females with low acculturation scores had greater BMI values than those in the high acculturation group ( $P < 0.05$ ). Three blood tests, fasting plasma glucose (FPG), HbA<sub>1c</sub> and total cholesterol (TC) values were measured among 33 participants, and two of them were found to have abnormal FPG and HbA<sub>1c</sub> accordingly were referred to their preferred General Practitioners.

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