Proceedings of the Nutrition Society (2015), **74 (OCE4)**, E224 doi:10.1017/S0029665115002669

Irish Section Meeting, 17–19 June 2015, Nutrition at key life stages: new findings, new approaches

Development of culturally appropriate low GI breakfast meals for Asian populations

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Asian populations are known to be at increased risk of developing type 2 diabetes (T2DM) and are therefore recommended to choose low glycaemic index (GI) foods[1]. Current dietetic practice in Australia provides dietary advice to Asian populations which often involves meal suggestions that are culturally inappropriate[1,2] thus decreasing compliance with dietary advice. For example patients are often advised to use porridge oats for breakfast rather than their traditional breakfast meal. Furthermore, many of the meal suggestions given to Asians have only been tested in Caucasians making it difficult to extrapolate the health impact. The aim of this project was to modify traditional high GI Asian breakfast meals to low GI versions and to develop culturally acceptable meal options that could help with glycaemic control and thus decrease risk of developing T2DM in South East (SE) Asian and Chinese populations.

Twenty participants were recruited and placed into either the SE Asian group (n = 12) or the Chinese group (n = 8) based on their self-identified ethic background. Modifications were made to traditional breakfast meals, Nasi Lemak (SE Asian meal) and congee (Chinese meal), to create low GI versions. Participants were assigned to the modified traditional breakfast meal (either SE Asian or Chinese) or porridge oats in a randomised crossover design. Each meal was matched for macronutrient composition and provided 50 g of available carbohydrate. Measurements of blood glucose, appetite and satiety were taken over a 2·5 h postprandial period.

Incremental area under the blood glucose response curve (iAUC) analysis revealed no significant ($P > 0{\cdot}05$) differences between the modified SE Asian breakfast meal and the porridge oats (172·6 ± 60·9 vs 151·8 ± 60·9 mmol/L/min respectively) or between the modified Chinese meal and the porridge oats (162·7 ± 74·3 vs 143·9 ± 66·9 mmol/L/min respectively) using repeated measures ANOVA. When comparing the SE Asian group to the Chinese group there was no significant difference in glycaemic response to the oat porridge meal between groups. Analysis of Visual Analogue Scales (VAS) highlighted that there were no significant differences for subjective ratings of hunger and fullness between the different meal conditions or the different population groups.

In conclusion, these results indicate that small modifications to traditional meals may be a viable alternative option in diabetes prevention. The information generated from this study will be used to inform dietetic practice in the Australian Asian community.

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2. Misra A, Ganda OP (2007). *Nutrition* **23**, 696–708.