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**Kiwifruit and Guar Gum Modulation of Postprandial Blood
Glucose and its Cognitive Effects**

Thesis presented in partial fulfillment
of the requirement for the degree
of Master of Science in Psychology at
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ABSTRACT

Glucose is the main source of energy for the brain, and blood glucose levels have been shown to have a significant impact on cognitive performance. This thesis research examined the effects of kiwifruit and guar gum (a soluble fiber) on the postprandial blood glucose response, and to what extent glucose manipulation can influence cognitive performance. Twenty healthy participants took part in a within subjects trial, with each individual consuming one of four breakfast diets per week (Weet-Bix, Weet-Bix + Kiwifruit, Weet-Bix + Guar Gum, and Weet-Bix + Kiwifruit + Guar gum). Each breakfast was separated by at least a 1-week washout period. It has been shown that kiwifruit and its interaction with guar gum decreases blood glucose peaks during the postprandial phase, and maintains a glucose level above fasting baseline measures over a 3-hour time period. In the present study there were no main effects of Breakfast Type across the cognitive tasks, or for interactions between Breakfast Type and Testing Time. However, there was a significant effect for time for each task, collapsed across each breakfast. (Time refers to the three points the cognitive tests were administered, one pre-breakfast, and two post-breakfast at 90 and 180 mins). Trends in the blood glucose response data indicated that when blood glucose levels were controlled and maintained (by the kiwifruit and guar gum), performance on some cognitive tasks improved and was largely sustained across the 3-hour time period, although the effects of practice could not be ruled out.

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