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The association between glycemic index, glycemic load, grain intake and nutrient adequacy in gestational diabetes mellitus

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The association between glycemic index, glycemic load, grain intake and nutrient adequacy in gestational diabetes mellitus

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Changes in the quality and quantity of carbohydrate foods may compromise nutrient intake in women with gestational diabetes mellitus (GDM). We hypothesised that a lower glycemic index (GI) or low glycemic load (GL) diet may improve overall nutrient intake. Specifically we aimed to investigate the food and nutritional intake of women with GDM and compare with Australian recommendations and evaluate the relationship between GI, GL, intake of cereal grains, and nutrient intake. Eighty-two women with GDM completed a three-day food record following their initial group nutrition education session post GDM diagnosis. Nutrient intakes were compared to the Australian Nutrient Reference Values (NRV). Pearson's correlation coefficients between GI, GL, grains, cereal products and nutrient intake were calculated. Nutrient intake across energy adjusted tertiles of GI, GL, carbohydrate intake, and intake of grains and cereal products were also compared. The majority of women (79 to 100%) did not meet the NRV for saturated fat, fibre, folate and iron. Lower GI and GL, but not carbohydrate intake, was significantly associated with higher intake of various micronutrients, including folate ($p < 0.01$), riboflavin ($p < 0.05$) and potassium ($p < 0.001$). Higher grain intake was associated with lower intake of saturated fat ($r = -0.363$; $p < 0.01$), but also lower micronutrient intake. Australian women with GDM are at risk of nutrient deficiency, especially those with higher dietary GI/GL or grain and cereal product intake. A low GI eating pattern may be nutritionally advantageous.

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