

How Do We Lower Glycaemic Variability?

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Introduction

Large clinical trials have reported the link between hyperglycaemia and the onset of long-term complications in type 1 diabetes mellitus (T1DM) and type 2 diabetes mellitus (T2DM) [1]. Overall, the evidence to be highly suggestive of Glucose Variability (GV) as an important key indicator of vascular damage [2].

Low GI foods intake and glycaemic variability (GV)

Glycaemic variability can be reduced by intake of low the GI foods (Figure 1).

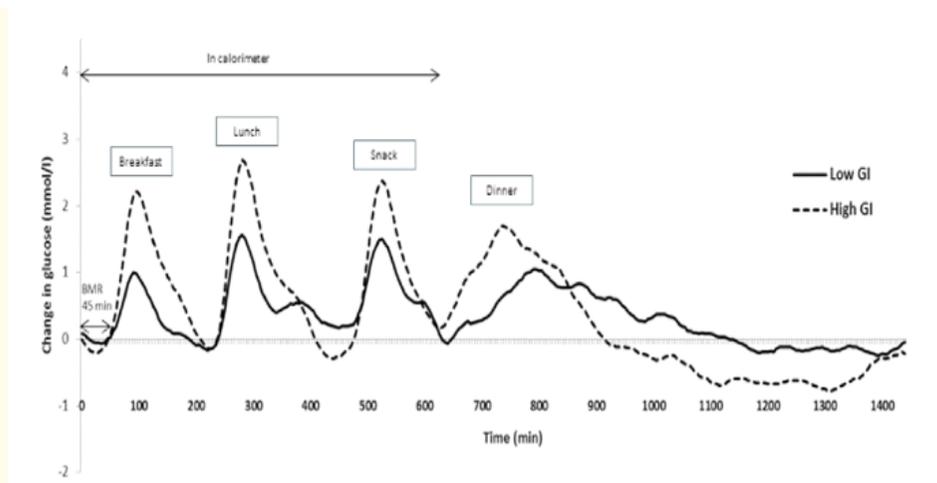


Figure 1: The consumption of low GI meals may be a strategic approach in improving overall glycaemia and increasing fat oxidation in Asians consuming a high carbohydrate diet [3].

GI scale

GI Food can be categorised in 3 groups, low glycaemic index, medium and high as per different range.

These ranges, along with some example foods, include:

- Low glycaemic index (< than 55): Include, Chana (Black Bengal gram), vegetables, pulses, soy products, beans, fruits, milk, whole pasta, Multigrain bread, oats, and lentils.
- Medium glycaemic index (55 - 70): Include fruit juice, brown rice and whole wheat bread.
- High glycaemic index (> than 70): Include white bread and white rice and white wheat flour and potatoes.

As per a 2008 Cochrane review, consumption of foods with low glycaemic index and avoidance of refined and processed foods in the pre pregnancy period can significantly modify the risk of developing GDM in pregnancy. According to a study done by Sedagat F, *et al.* consumption of western dietary pattern including processed foods like jams, mayonnaise, salty snacks and processed meat, eggs was associated with increased risk of GDM with an odds ratio of 1.97 compared to those who refrained from these items [4]. A diet rich in Vegetable or Mediterranean diet, can reduce risk of GDM, while red and processed meat, refined carbohydrate grain is associated with higher risk of GDM [5].

Effect of low GI breakfast and afternoon snack (Figure 2)

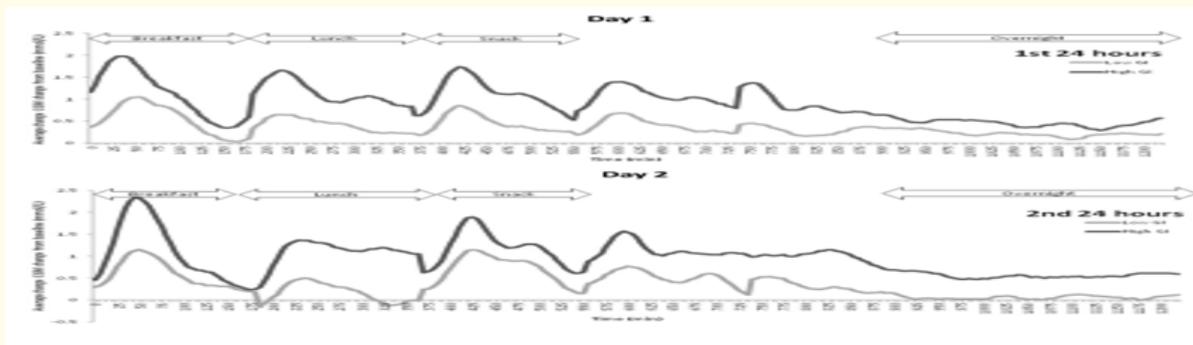


Figure 2: Consumption of a low GI breakfast and after-noon snack was capable of attenuating 24-h blood glucose profiles, minimize glycaemic excursions and reduce food intake in healthy Asian males.

This simple dietary intervention may be an acceptable approach in improving overall glycaemia and energy balance in Asians [6].

Medical nutrition therapy (MNT)

“Medical Nutrition Therapy (MNT) throughout the course of a structured weight loss plan, is strongly recommended”.

Studies have demonstrated that a variety of eating plans, varying in macronutrient composition, can be used effectively and safely in short term (1 - 2 years) to achieve weight loss in people with diabetes. This includes low-calorie meal plans that include meal replacements [7].



Figure 3

Evidence from randomized controlled trials, observational studies and meta-analyses reveal that MNT improves metabolic outcomes, including blood glucose and HbA1c in people with diabetes [8].

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