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Glycemic Index
Symbol Program

Committee Secretary
House of Representatives Standing Committee on Aboriginal and Torres Strait Islander Affairs
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CANBERRA ACT 2600
AUSTRALIA

Inquiry into community stores in remote Aboriginal and Torres Strait Islander communities

Submission from the Glycemic Index Foundation

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Introduction

The Glycemic Index (GI) Foundation

The GI Foundation was formed by the University of Sydney, Diabetes Australia and the Juvenile Diabetes Research Foundation of Australia, in 2002. The University of Sydney is one of the leading centres for glycemic index research in the world. Diabetes Australia and the Juvenile Diabetes Research Foundation are Australia's leading charities looking after the interests of people with existing diabetes, and working together to prevent diabetes. The GI Foundation's primary aim is to facilitate the selection of healthier lower GI food choices by all Australians to reduce the risk of overweight/obesity, and related chronic diseases like type 2 diabetes, cardiovascular disease and certain cancers.

Glycemic Index Symbol Program

The GI Foundation administers the GI Symbol Program. At the heart of the GI Symbol Program is the Glycemic Index Tested certification trademark, known colloquially as the "GI Symbol". The GI Symbol is licensed to food companies for use on the labels of carbohydrate-containing foods that meet category specific nutrient criteria including kilojoules, total and saturated fat, sodium (salt), and where appropriate, they must be a source of fibre and calcium.

The Glycemic Index or GI

Carbohydrates are one of the best sources of energy for the body, and are the only fuel source for the brain, red blood cells and the growing foetus. The GI is a system of ranking carbohydrates in foods according to how they affect blood glucose levels. It is a way of differentiating between the type of carbohydrate foods that we eat.

Carbohydrates with a low GI (55 or less) don't make blood glucose levels rise very high for very long. They provide sustained energy. Carbohydrates with a high GI (70 or more) are the ones that cause blood glucose levels to go higher for longer. High blood glucose may cause damage to vital tissues and organs.

GI and Chronic Disease

Chronic disease like type 2 diabetes, cardiovascular disease, and certain cancers are increasing dramatically around the globe, in both developing and developed nations, including Australia. Being overweight or obese is a major risk factor for many of these chronic diseases. Habitual diets with a high average GI have be shown to directly increase the risk of developing a number of these chronic diseases, independent of body weight [1], and conversely, healthy diets with a low GI have been proven to improve their management [2].

A recent Cochrane review determined that healthy low GI diets were superior to regular low fat, higher carbohydrate weight reduction diets, leading to an average reduction of 1.3 kg/m^2 in BMI over a 3-6 month period, the majority of which was due to a decrease in total fat mass (1.1 kg reduction) [3].

With respect to type 2 diabetes, a positive association between GI and disease risk was documented in 5 large cohort studies [4-8], in cardiovascular disease, two studies have reported a positive association [9;10], and the risk of cancer has been reported to increase in 8 large cohort studies [11-18]. A recent meta-analysis of this data determined that high GI diets increased the risk of type 2 diabetes by 40% (GI Rate Ratio (RR)=1.40, 95% CI: 1. 23, 1.59), coronary heart disease by 25% (GI RR=1.25, 95% CI: 1.00, 1.56), gall bladder disease by 26% (GI RR=1.26, 95% CI: 1.13, 1.40), breast cancer by 8% (GI RR=1.08, 95% CI: 1.02, 1.16), and all chronic diseases combined by 14% (GI RR=1.14, 95% CI: 1.09, 1.19) [1].

The average GI of the Australian diet is approximately 57 [19]. There is considerable evidence that a diet with an average GI of approximately 45 will achieve a significant reduction in the risk of chronic disease [1;2]. Therefore, one of the aims of the GI Symbol program is to reduce the average GI of the Australian diet by 10-15 units to reach this target.

Aboriginal Health

It is well documented that rates of both acute and chronic disease are greater in indigenous Australians, compared to the non-indigenous population. For example, diabetes rates are 2-3 times greater than those found in non-indigenous Australians [20].

To-date, no studies have assessed the GI of the diets of Aboriginal people living in remote communities. However, the GI Foundation recently undertook a review of the major carbohydrate foods sold through Outback stores (Table 1). This has indicated that the major source of carbohydrates for these communities are high GI confectionery, bread, soft drink and flour. Few low GI products are available, and according to Outback stores, those that are do not sell well.

Table 1: Top 10 carbohydrate foods sold through Outback stores

Rank	Food/beverage
1	Confectionery
2	Jackaroo White Sliced Bread
3	Coke 1.25 Pet
4	Coca-Cola Cola 375 Ml Can
5	Coca-Cola 600ml
6	Heinz Spaghetti Cheese 420g
7	Heinz Spaghetti In Tomato Sauce 220g
8	Bakery
9	Territory Hi Fibre Thick White
10	Sprite

Source: Outback stores, 2008.

The GI Foundation (GIF) undertook a further analysis of bread sales through the major suppliers. Bread is one of the few products that has a range of low GI variants available, and is one of the major sources of carbohydrate for these communities. Perhaps unsurprisingly, the breads with the highest turnover tended to be those with the lowest price.

GIF had discussions with the largest producer of low GI bread in Australia, to determine if it was feasible to make a low GI bread available to remote communities at a reduced price. However, the cost of production of low GI white bread is significantly higher than regular white (higher GI) bread. Therefore it was decided that a major project to develop a low cost, low GI white bread would need to be undertaken. As this would require significant funds, it was decided that a government grant would be the most likely way of funding the research.

Outback Stores

The GI Foundation has been liaising with Outback stores since mid 2008. Our initial discussions were prompted by an enquiry by a general practitioner from the Northern Territory, about products available to reduce the GI of her patient's diets. We wanted to discuss the situation with an organisation that had direct knowledge of the foods and beverages consumed by Aboriginal people. Outback stores consequently expressed their interest in improving the nutritional status of their customers. They provided GIF with the list of carbohydrate foods presented in Table 1. Since that initial contact, GIF has had discussions with Coca Cola Amatil regarding the GI of their beverage and prepared fruit business. Coca Cola Amatil discussed a program that they were running with the Outback Stores to reduce the amount of sugar-sweetened beverages consumed by the indigenous population. GIF believes this initiative has merits, but more can be done to lower the GI of the indigenous populations' diet, and consequently improve their health.

GIF would not have been able to obtain the information needed to gain insight into the diet of these rural and remote communities, without the assistance of the Outback stores. We have found them to be extremely helpful and willing at all times. Their contributions may ultimately assist us with our goal of reducing the average GI of the diet of all segments of the Australian population.

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