Nutrition and Diabetes

According to Diabetes UK there are currently over 2.6 million people with Diabetes in the UK and there are up to half a million people with diabetes who have the condition and don't know it.

Including both adults and children, it is estimated that:

- 15 per cent of people with Diabetes have Type 1 Diabetes.
- 85 per cent of people with Diabetes have Type 2 Diabetes.

Not including children, for adults in the UK, it is estimated that:

- 10 per cent of people with Diabetes have Type 1 Diabetes.
- 90 per cent of people with Diabetes have Type 2 Diabetes.

Position statement based on recommendations for nutritional management for people with Diabetes Mellitus from the European Association for the Study of Diabetes and Diabetes UK.[1]

Dietary advice and diet therapy are an integral part of total Diabetes care. Effective weight reduction for the overweight person with Diabetes is an important part of the process and improves biomarkers of vascular disease risk.

Carbohydrate

High carbohydrate diets are now the usual approach in dietary management though the type of carbohydrate influences metabolic response. A diet high in fibre-depleted carbohydrate can elevate serum triglycerides, particularly when accompanied by high fructose or sucrose intake and when islet cell function is poor. However, if the high carbohydrate intake includes soluble fibre then this effect is attenuated or abolished.[2]

Sucrose

Recent evidence suggests that up to 10% of dietary energy may be taken as sucrose without adverse effect.[1] It has been long assumed that sucrose consumption by itself, or as part of a meal, aggravates hypertriglyceridaemia, but many studies have recently shown that sucrose does not result in a greater rise in plasma glucose than isocaloric amounts of other carbohydrates.[2] Sucrose therefore should be considered as part of the carbohydrate intake when planning meals provided that the energy content is taken into account and that it does not replace foods high in fibre.[2]

Fructose

Dietary fructose in comparison with other carbohydrates, specifically sucrose, elicits a lower glucose and insulin response in healthy individuals and in individuals with Diabetes Mellitus.[2] At levels usually consumed in the diet of people with Diabetes fructose does not have an adverse effect on blood lipids.

Nutritive Sweeteners

All nutritive sweeteners contain calories and therefore must be accounted for in meal planning. Sugar alcohols like sorbitol and xylitol have a lower glycaemic response than sucrose and have a slightly lower caloric value than sucrose as they are not completely digested and absorbed.[2] For people with diabetes there is probably little to gain from using nutritive sweeteners compared to sucrose.[2]

Slim·Fast® and Diabetes

Healthy eating and weight control are fundamental to managing Diabetes and Slim·Fast® meal replacements can be used as part of a diabetic meal plan. In the USA the Diabetes Prevention Programme uses meal replacements as the weight management regimen of choice.

The initial results from studies using prepared meals and liquid meal replacements show that weight loss and glycaemic control are comparable with conventional dietary treatment. In a study of 29 obese subjects with Type 2 Diabetes controlled by diet or oral medications which evaluated liquid meal replacements compared with an isocaloric energy-restricted diet, it was found that maximum weight loss was achieved after 3 months on both programs and glycaemic control improved in both groups. Overall, there were no significant differences in weight or glycaemic control between the groups at 1 year. Therefore prepared meals and liquid meal replacements offer alternatives to traditional dietary plans for patients with Diabetes[3].

In a 12-week randomised controlled trial in obese subjects with Type 2 Diabetes. One group was advised according to the American Diabetes Association's diet exchange plan and the other two groups given either a standard liquid meal replacement or an isocaloric liquid shake with sucrose and fructose replaced with maltodextrins. All subjects were advised to reduce energy intake by 500kcal per day. At 3 months the meal replacement groups lost 6.10±4.4kg compared to 4.2±4.7kg [p=0.009] in the exchange diet group. It was concluded that meal replacements were a safe and effective strategy for use in obese patients with Type 2 Diabetes[4]. The publication of 12-month findings from this study show a continued difference in weight loss between the meal replacement group [–4.35±5.28kg] and the standard diet group [–2.36±4.92kg][5].

References:

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