Carbohydrate counting – the West Suffolk way

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The National Service Framework for diabetes (Department of Health, 2001) identified the need for structured, audited, carbohydrate education for people with type 1 and 2 diabetes, particularly those on a basal–bolus insulin regimen. On this basis, in 2006, a carbohydrate-counting programme was developed by the diabetes team at West Suffolk Hospital using existing resources as no extra funding was available.

The programme involves two, 2-hour group sessions (average of 10 people) facilitated by a DSN and a dietitian. The sessions are aimed at those who already use a basal–bolus regimen (or contemplating changing to it) and those applying for insulin pump therapy. An information booklet is also given to accompany the sessions and assist in successful carbohydrate counting.

Aims and objectives

- To provide information on different types of carbohydrates.
- To discuss the link between carbohydrate-rich foods and blood glucose levels.
- To discuss the link between insulin action and carbohydrates.
- To promote reading food labels.
- To improve quality of life.
- To promote healthy eating and weight management.
- To achieve target HbA_{1c} levels.

Session content

Session 1

- Which foods affect blood glucose levels and how?
- Other important food groups.
- The different types of carbohydrates.
- Associated information: hypoglycaemic events, exercise, alcohol, injection sites, blood testing and illness.
- Revision on insulin actions (basal–bolus or twice-daily mixed insulin).

Session 2 (only compulsory for people wanting an insulin pump)

- Individual carbohydrate ratios.
- Correction doses.
- Eating out.

Evaluation

Attendee satisfaction data were collected at the end of each session. For the 250 attendees since the programme was started, the average Likert score was 4.6 (5 being most satisfied). Clinical data were also collected, including HbA_{1c} level and weight at baseline, 6 and 12 months.

The mean baseline HbA_{1c} level was 8.74% (72.4 mmol/mol). This was reduced to 8.35% (67.5 mmol/mol) at 6 months (–0.39% [–4.3 mmol/mol]) and 8.30% (67 mmol/mol) at 12 months (–0.44% [–4.8 mmol/mol]). Furthermore, improvement in achieving targets was seen, with a doubling of attendees achieving a HbA_{1c} level of <6.5% (<48 mmol/mol) and a 10% reduction in attendees having poor control (HbA_{1c} level >8.5% [>69 mmol/mol]).

Although this programme allowed attendees to be more flexible with their diet, the results do not indicate weight gain any greater than could be expected in the general population – 0.30 kg and 0.56 kg weight gain at 6 and 12 months, respectively.

Where next?

Session 2 has been changed to become an individual appointment (face-to-face or by telephone) to discuss the person's completed carbohydrate food diary. This allows for individual questions and calculation of carbohydrate ratios and correction doses.

The evaluations have been changed to collect quality-of-life data using the Problem Areas in Diabetes (PAID) score, which should be completed before session 1 and repeated at 3–6 months after the course. Practice nurses and GPs have been invited to join the sessions and can refer their patients.

With current funding, we cannot offer this programme in community locations; however, this maybe a viable option with the prospect of GP commissioning. We may also consider developing a session for those on alternative insulin regimens. ■

Department of Health (2001) *National Service Framework for Diabetes: Standards.* DH, London.