Weight management in obese people with diabetes

Dale Carter

Matthew Capehorn

Dale Carter is Lead Obesity Specialist Nurse; Matthew Capehorn is Clinical Manager, Rotherham Institute for Obesity, Clifton Medical Centre, The Health Village, Rotherham.

Obesity is a modifiable risk factor for many comorbidities, including type 2 diabetes and impaired glucose tolerance, as well as hypertension, raised lipids, and myocardial infarction (World Health Organization, 2000). The development of type 2 diabetes is intimately linked with obesity, and we now have biochemical models of how and why excess visceral fat leads to increased insulin resistance and progression of the condition (Eckel et al, 2005). Obesity in women leads to a 12.7-times increased relative risk of developing diabetes, and in men a 5.2-times increased relative risk (National Audit Office, 2001). Fifty-eight per cent of type 2 diabetes is estimated to be due to underlying obesity (Jung, 1997).

Diabetes substantially increases the risk of coronary heart disease (CHD), and men with non-insulin dependent type 2 diabetes have a two- to four-fold greater risk of CHD, and women have a three- to five-fold greater risk of CHD (Garcia et al, 1974). As the prevalence of obesity increases we may need to expect that the associated problems, such as diabetes, will increase also. If current trends continue then projections suggest that by 2050, 9 out of every 10 adults will be overweight or obese, and 50% of adults will be classified as obese by BMI (Foresight, 2007).

Multidisciplinary team approach to weight management

The Rotherham Institute for Obesity (RIO) is a unique and specialist centre for the management of weight problems (for adults and children). It uses a multidisciplinary team (MDT) approach by providing specialist services, such as dedicated obesity specialist nurses (OSNs), healthcare assistants, dietetics input for complex dietary needs, "Rotherham Cook & Eat" skills education, health trainers, "Talking Therapies" (including psychological input), an exercise therapist who works from an on-site gym, and a GP with a specialist interest (GPSI) in obesity for any medication issues. There are also facilities to allow group work for exercise, talking therapies and nutritional advice. RIO also provides the triage and assessment for all adults being considered for bariatric surgery or the attendance at residential weight management camps funded by NHS Rotherham.

Initial consultation

In any weight-management clinic, all patients should be initially assessed and a full history and examination performed, including:

- Blood pressure.
- Body weight.
- Height.
- BMI.
- Waist circumference (this measure should be taken at the mid-point between the lowest rib and the anterior superior iliac spine, or hip bone, and on expiration).
- Fat composition using bioimpedence scales (where available).

If no recent blood tests have been performed then these are taken to exclude previously undiagnosed metabolic conditions, such as diabetes and pre-diabetes states, underactive thyroid, or other associated risk factors. Standard blood tests in nearly all people at RIO include fasting blood glucose and/or HbA_{1c}, thyroid function tests, liver function tests and lipid profile.

The OSN then has a key role in delivering much of the vital fundamental information that is required for successful weight loss and prevention of weight regain, including:

- Basic nutrition and balanced healthy eating, e.g. using the "Eatwell Plate" model.
- The difference between "healthy" eating and eating for weight loss.
- An assessment of energy requirements (using the Harris-Benedict or Schofield equations).
- The hypocaloric diet, aiming for a 500 kcal deficit each day to achieve a steady 1 lb/week weight loss.
- The effect of the "day off the diet", which can cancel out a week's worth of dieting.
- Portion controls (choose regular sized meals/snacks and never "go large").
- Substituting snacks for less calorific alternatives, e.g. an apple instead of a chocolate bar.
- Substitute sugary drinks for "diet" drinks or water.

- Treat each alcoholic drink as a chocolate bar.
- Awareness of high calorie, low-fat foods.
- Basic behaviour therapy techniques to avoid eating when not really hungry.
- The effect of regular physical activity on energy requirements.
- Referral, when appropriate, to other members of the MDT for more intensive input.

Common myths and mistakes

At RIO, we do not particularly advise calorie counting unless this suits the individual, but instead look for ways in which the obese person can lose 500 kcal from the daily diet. This may be achieved through a simple reduction in portion control, or a change of snacks to alternatives, or substitution of particular foods in meals. In some people this can be easy; those people who always "go large" at quick-service restaurants can have the "regular", and often find that 20 minutes after eating they are no longer hungry. Often, obese people find that a simple change from sugary drinks to "diet" drinks, or water, is all that is required to save those required calories. Many people do not realise that alcohol has calories! Each alcoholic drink should be considered the same as a chocolate bar.

Another common mistake that can be made is to get confused between "healthy" eating, and eating for weight loss. Unfortunately, many obese people do not realise that they can put on weight by eating too much of any healthy foods. Furthermore, these people can often get caught out at the supermarket by choosing to buy "low fat" options, when in fact these may have more calories than an alternative. Obese people sometimes purchase the "premium" ranges of food at the supermarket thinking this may convey a healthier diet, when in fact these products often have a higher fat, sugar and/or salt content.

At RIO, obese people who are to be considered for pharmacotherapy are assessed by the GPSI. It is important that at some time, especially in the obese person with diabetes, a suitable healthcare professional, such as the OSN or DSN, assesses the individual's coexisting medical conditions and current medications to review any that may be associated with weight gain. Recommendations may be made to change the person to newer, more body weight-friendly alternatives.

Conclusion

It is important that we appreciate that obesity is a chronic relapsing condition. As rates of obesity continue to rise, so will the risk of morbidity and mortality from type 2 diabetes, CHD and many other comorbidities. Obese people unable to achieve significant weight loss by themselves should be offered a range of help within a specialist MDT service. ■

Eckel RH, Grundy SM, Zimmet PZ (2005) The metabolic syndrome. *Lancet* **365**: 1415–28

Foresight (2007) *Tackling Obesities: Future Choices Project*. Government Office for Science, London

Garcia MJ, McNamara PM, Gordon T, Kannel WB (1974) Morbidity and mortality in diabetics in the Framingham population. Sixteen year follow-up study. *Diabetes* **23**: 105–11

Jung R (1997) Obesity as a disease. *Br Med Bull* **53**: 307–21

National Audit Office (2001) *Tackling Obesity in England*. NAO, London

World Health Organization (2000) Obesity: Preventing and Managing the Global Epidemic. Report of a WHO Consultation. *World Health Organ Tech Rep Ser* **894**: i–xii, 1–253