

Management of obesity and overweight

M E J Lean

Abstract

Modern weight management incorporates optimization of health and risk factors, short-term weight loss, and long-term weight maintenance and prevention of regain. Patients in need of professional weight management can be identified by a large waist (>102 cm for men, >88 cm for women). A structured programme addressing diet and physical activity, and behavioural management, as used in the UK Counterweight Programme, is cost-effective in generating 5–10% weight loss for 30–40% of patients. The available anti-obesity drugs (orlistat, sibutramine (in some countries) and liraglutide (for obese patients with diabetes)) can double the weight loss and clinical benefits for at least 2–4 years. Bariatric surgery is effective and improves multiple health risks for extreme obesity (BMI >40) and when severe medical complications (e.g. diabetes, sleep apnoea) have arisen. Very low-energy diets (400–800 kcal) produce 10–20 kg weight loss that can be maintained using stepped food reintroduction and anti-obesity drugs. For most overweight and obese patient, a modest weight loss of 5–10 kg, achievable by many methods, brings multiple benefits. A target loss of 15 kg is necessary to reverse the diagnosis of type 2 diabetes, and restore a non-diabetic life expectancy.

Keywords bariatric surgery; counterweight; liraglutide; orlistat; sibutramine

The emergence of obesity as a distinct disease with complex genetic and environmental aetiology, underpinning a huge raft of chronic pathologies, presents new issues for health services and personal conflicts for doctors, relating to the aims and potential demands of treatment.

The justification for treating obesity is founded on the overall burden of ill-health and on its enormous cost to health services in particular (including drugs for conditions resulting from weight gain). There is increasing evidence for both short- and long-term benefits of weight loss. Evidence is consistent for clinical benefits from secondary diseases but is limited, partly as a consequence of the small number of studies that have induced and maintained weight loss long enough to provide such data, and partly because of uncritical dismissal of interventions that did not 'cure' obesity by achieving normal body weight. Recently, it has been

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What's new?

- Governmental and professional bodies, such as the National Institute for Health and Clinical Excellence (in England), on the basis of evidence-based reviews now recommend long-term medical management of obesity, using drugs when indicated, and also the provision of surgery for selected patients
- Modest weight loss of 5–10% improves all risk factors and reduces the incidence of type 2 diabetes by 58% in people with impaired glucose tolerance; >15 kg loss is necessary to restore normal glucose tolerance in patients diagnosed with type 2 diabetes

recognized that modest intentional weight loss (5–10 kg) leads to major long-term health gains, such as prevention of type 2 diabetes and the emphasis has shifted towards weight maintenance. Greater weight loss (e.g. >15 kg) is necessary to reverse some complications of obesity (e.g. type 2 diabetes (T2DM)).

Aims and criteria of success in weight management

Most individuals gain weight gradually during adult life, reaching a plateau by about 60 years of age. The rate of weight gain varies; the average is 15–20 kg between the ages of 20 and 60 years. In those who become obese, a gain of 1–2 kg/year is average and 5–10 kg/year is common. The rate of weight gain is most rapid in early adulthood, and declines with age. Only a minority of individuals maintains a body mass index (BMI) of less than 25 kg/m² throughout adult life. The normal range of BMI, with the lowest risks of many problems, is 18.5–25 kg/m². Although this might be ideal, it is an unattainable goal for most obese patients. BMI is a complicated function; waist circumference (Table 1) is more practical and provides a better guide than BMI to total body fat and to health risks. Waist circumference is widely described as indicating 'abdominal obesity'. This term is confused, and has no definition. Waist circumference does indicate the intra-abdominal fat mass among people with similar total body fat content. In most studies, variations in total body fat have more influence on waist circumference than do variations in intra-abdominal fat.

Recent surveys are showing some decline in the obesity epidemic, but new increases in weight in older people, up to age 70, with a dramatic rise in waist circumference in older people, especially women over 50.

Figure 1 shows possible criteria for success in weight management, taking as an example an intervention when the individual reaches a BMI of 25 kg/m². Any reduction in the trajectory of adult weight gain may be considered a success. Remembering the powerful interaction between other risk factors and obesity, the first level of success should be a change in lifestyle to reduce other risk factors, even if weight gain is not modified.

The success of any weight management programme must be evaluated over a relatively long period of time. Obesity-prone individuals often experience large fluctuations in body weight for social, personal and other reasons. Weight loss is usually short

Use of BMI and waist circumference in weight management and health promotion

	Healthy normal range	Health risks increasing Make personal changes to control weight	High risk Seek professional help and management
BMI (kg/m ²)	18.5–25	25–30	>30
Men-waist	<94	94–102	>102
Women-waist	<80	80–88	>88

Table 1

term and cannot be considered the sole criterion of success. It is inappropriate to initiate any treatment outside the context of a programme aimed at results in 12 months or more.

On average, overweight and obese patients can lose weight for 3–4 months, but beyond this period it is unreasonable to seek further loss. Instead, it is more logical to concentrate on developing skills and confidence for maintaining the lower weight or restricting weight gain in the future. Prevention of weight gain should always be the primary aim of management, because it represents a cure of obesity (defined as the disease process of excess fat accumulation with multiple organ-specific pathological consequences). Initial weight loss can be induced by a wide range of interventions, including simple dietetic advice and follow-up (Table 2). Most patients know how to lose weight. In contrast, evidence for the efficacy of treatment in maintaining a lower weight is limited. Surgical intervention (e.g. gastric bypass) is effective in about 90% of patients, and the small number of anti-obesity drug trials that have been prolonged beyond one year have been effective in most patients, with around 75% maintaining >5% loss. Among behavioural, dietary and lifestyle interventions, a review of the literature suggests that prolonged and regular professional contact is most important and that physical activity has a role, but the value of other approaches is variable. Different approaches may suit different individuals. Several options are available, perhaps presented to the patient as a menu, and the skills of the therapist are of paramount importance.

A comprehensive national guideline for the integration of prevention and active weight management was produced in 1996 by the Scottish Intercollegiate Guidelines Network (SIGN, Figure 2), based on published evidence. Its conclusions were largely retained in a full review in 2010 and in the 2006 NICE guideline. The grading system for scientific evidence (similar to that used for systematic reviews and the Cochrane Library) can be misleadingly incomplete in obesity research, as it relies heavily on placebo-controlled trials. This approach can be impossible or misleading when the trial treatment is long-term lifestyle modification and when individuals often instigate their own, personal approach to 'treatment' (patients tend to vary their prescribed treatment when the aim is one as familiar as weight loss). For these reasons, even the best research may fail to appear in systematic reviews. For service development, the randomized controlled trial (RCT) is generally inappropriate (other than for specific treatment components) and some form of Continuous-Improvement Methodology is preferred.

For most clinical outcomes of weight management, a target of 5–10% loss has been adopted in clinical guidelines. It can be achieved by many methods in community settings and many medical complications of obesity are greatly improved. Recent RCT evidence has confirmed observational data that a target weight loss of >15 kg at 2 years is necessary (and sufficient) to reverse the diagnosis of type 2 diabetes (within 2 years of diagnosis). This is achievable only using bariatric surgery, or by very low energy diets (VLED; 400–800 kcal/d) with anti-obesity drugs for maintenance.

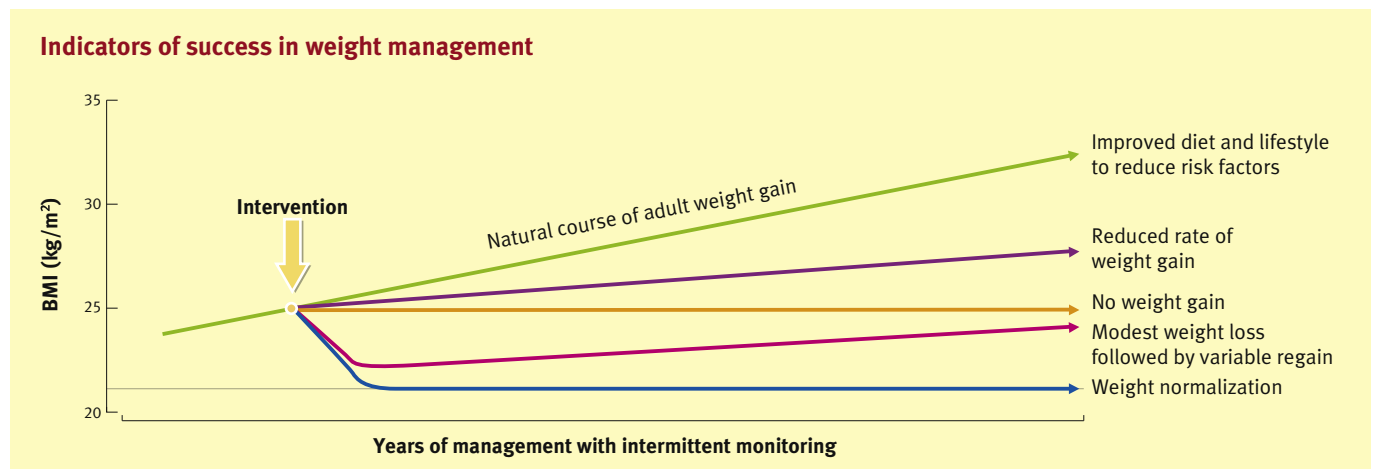


Figure 1

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