

Weight management: an evidence-based approach

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The management of obesity includes an individualized assessment of the need for weight loss and the determination of appropriate weight goals. Treatment includes dietary, exercise, and behavioural interventions, with emphasis on a particular treatment modality being dependent on individual circumstances. In general, dietary recommendations include a moderate caloric restriction and modifications in meal pattern and selection of foods. Once a health care professional has identified the need for weight loss by assessing body mass index, waist circumference, and risk factors, he/she can translate nutrition and health information into dietary choices for the overweight individual. This paper discusses a strategy for the evaluation and treatment of overweight patients using a practical treatment algorithm.

Treatment of obesity and overweight

Obesity is a disease in its own right, and overweight and obese patients should be assessed and treated using evidence-based methodology. After acquiring the

necessary skills, health care professionals can guide patients on how to achieve their goal and maintain it long term. Some practical steps are outlined in Table 1 and discussed in detail later. Treatment of the overweight and obese patient is a 2-step process: 1) Assessment and 2) Management.

Assessment and classification of overweight and obesity

Two practical tools for assessing a patient's need for weight loss are body mass index and waist circumference.

Body mass index (BMI) can be calculated as follows:

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height squared (m}^2\text{)}}$$

Normograms and charts are also available to help calculate the BMI. Body mass index provides a more reliable measure of total body fat than simple body weight.¹ It accounts for differences in body composition by defining the level of adiposity according to the relationship of weight to height, thus eliminating dependence on frame size.²

The recommended classification for BMI, adopted by the Expert Panel on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults (National Heart, Lung and Blood Institute, USA) is shown in Table 2.

Waist circumference is a practical way of evaluating abdominal fat before and during weight loss. Fat located in the abdomen is associated with greater morbidity than fat in the gluteal-femoral region.³ In fact, a high waist circumference is associated with an increased risk for type II diabetes, hypertension, and CVD in patients with a BMI between 25 – 34.9 kgm⁻².^{4,5} Waist circumference is a better indicator of relative risk than BMI⁶. It is measured by placing a measuring tape around the abdomen at the level of the ileac crest. The measurement is made at the end of expiration. Men are at increased risk if their waist circumference exceeds 102cm. For women, the figure is 88cm. Changes in waist circumference are useful predictors of changes in CVD risk factors.⁷

The next step is assessing co-existing risk factors. Detecting cardiovascular disease or end-organ damage presents the greatest urgency. Risk factors include cigarette smoking, hypertension, high LDL, low HDL, impaired fasting glucose, family history of premature CHD and age (>45 for men, >55 for women). Patients are considered to be at high absolute risk for obesity-related disorders if they have 3 or

Table 1: Practical steps in treating overweight and obesity

1. Height and weight are measured and BMI estimated
2. Waist circumference is measured
3. Co-morbidities are assessed
4. Decision on treatment is taken
5. Level of motivation is evaluated
6. Appropriate amount of calories is prescribed
7. Achievable exercise goals are recommended
8. Dietary information is given
9. Food and activity diary is reviewed
10. Patients progress is charted

more of the risk factors just mentioned. In these cases, more attention must be paid to cholesterol lowering therapy and blood pressure management.^{8,9} Patients with a BMI ≥ 30 or high risk waist measurements and 2 risk factors should be encouraged to lose weight.

Management of overweight and obesity

Attention must be given to dietary changes, exercise therapy and behavioural modification. The first goal is a reduction in body weight of 5-10% which already results in decreased morbidity.¹⁰ Many patients have unrealistic targets and will need to be advised about their feasibility.^{11,12} Once the first goal is reached, many experts advise maintaining this weight for a few months before setting a new target. A 10% reduction in weight should usually be achieved within 6 months.

Dietary changes

A calorie deficit of between 500-1000 calories/day is advised and this should give a weight loss of 0.5-1kg/week. After the patient has maintained his/her new weight for a few months, diet and physical activity goals are revised, creating a new energy deficit which will lead to further weight loss.¹³ In practice, a low calorie diet (LCD) containing 1200kcal/day can be prescribed for most women, and a 1500kcal/day is recommended for men. A higher intake can be prescribed for the more obese patient and then slowly adjusted.

Very low calorie diets are not recommended for routine weight loss therapy as they need special monitoring.¹⁴ Steady weight loss over a longer period favours the reduction of fat stores, limits

the loss of vital protein tissues, and avoids the sharp decline in resting metabolic rate that accompanies rapid weight reduction. Also, clinical trials have shown LCDs are just as effective as VLCDs in producing weight loss after 1 year.¹⁵ Dieting is more likely to be successful when a patient's preferences are taken into consideration. A tailor made diet should, however, satisfy all the recommended dietary allowances.

Patients are made familiar with:

- caloric value of various foods
- food composition
- reading food labels
- purchasing healthier foods
- low-fat cooking
- avoiding high calorie foods
- reducing portions
- ensuring adequate water intake
- limiting alcohol

These should become life-long habits and will help weight maintenance. Patients are given copies of low-fat/low-calorie menus and a food exchange system is explained to them. This allows them to make their own choices from a variety of foods having similar calorie counts and nutritional values. This flexibility usually leads to better adherence. A sample reduced calorie menu for a typical 1200kcal diet is given in Table 3.

Exercise therapy

Increasing physical activity is an essential component of weight loss therapy.¹⁶ However, it does not result in a much greater weight loss than diet alone over a period of 6 months.¹⁷ In fact, it is most useful in the prevention of weight regain.^{18,19} After being assessed by a doctor, patients should be encouraged to select

activities they enjoy and which fit in with their lifestyle. A daily walk, for example, is something most people can manage. Initially, they can start by walking for 10 minutes, three times a week and gradually build up to 30-45 minutes on most days of the week.^{18,19} Other changes, like taking the stairs, and parking far from a destination, should be encouraged. A patient can keep track of his progress and increase motivation by keeping an activity diary.

Behavioural modification

Behavioural motivation relies on identifying barriers to adherence with dietary and exercise changes. Behaviour is analysed to identify events which are associated with inappropriate eating behaviour.²⁰ Having identified the problem, the practitioner can take steps to modify the situation. For example, if an individual finds that he or she overeats when angry; steps are taken to help the patient deal with anger in a more constructive way. This part of treatment is just as crucial as dietary and exercise changes.

The principle components of treatment are:

- self-monitoring
- problem-solving
- stimulus control
- slowing of eating and cognitive restructuring²⁰

Self-monitoring is best done by keeping a food and exercise diary, which not only records time and place of food intake, but also accompanying thoughts and feelings. This helps identify the physical and emotional settings in which eating occurs. It provides feedback on progress and puts responsibility for change on the patient. The diary is assessed every week and can give valuable clues as to the reason why lapses occur and how they can be

Table 2: Classifications for BMI

	BMI
Underweight	<18.5 kg/m ²
Normal weight	18.5-24.9 kg/m ²
Overweight	25-29.9 kg/m ²
Obesity (Class 1)	30-34.9 kg/m ²
Obesity (Class 2)	35-39.9 kg/m ²
Extreme Obesity (Class 3)	≥ 40 kg/m ²

prevented. This is dependent on the honesty of the patient concerned. It is a useful record of food consumed and compliance with exercise and gives the practitioner a window into the patient's life.

Problem-solving is a process whereby the problem is identified, solutions are found, and new behaviours are implemented.

Stimulus control involves modification of the social and environmental cues which encourage undesired eating. Strategies such as avoiding combining eating with reading or watching T.V. are helpful.

Cognitive restructuring teaches patients to identify, challenge, and change negative feelings. Many people are very self-critical after a minor lapse and this can lead to abandonment of the diet. Motivation is of paramount importance at this time.

Follow-up visits are opportunities for monitoring progress and giving more information. The practitioner should have a non-judgemental approach and keep a positive outlook even when goals have not been met. By reassessing the circumstances of unmet goals, new effective strategies can be tried. If, however, a target has been

reached, the patient can enter the phase of weight maintenance and long-term monitoring.

Weight maintenance

Maintaining the new weight is now a major challenge. In the past, clinicians focused entirely on weight loss and did not give much importance to weight maintenance. It was assumed that reaching target weight meant the end of weight therapy. However, as many as 80% of patients would gain the weight back. Now, however, it is acknowledged that dietary

Table 3: Sample Reduced Calorie Menu – 1200kcal

Breakfast	Calories	Fat (g)	% Fat	Exchange for:
• Whole wheat bread, 1 medium slice	70	1.2	15	(1 bread/starch)
• Jam, regular, 2 tsp	30	0	0	(half fruit)
• Cereal, shredded wheat, half cup	104	1.0	4	(1 bread/starch)
• Milk, 1%, 1 cup	102	3.0	23	(1 milk)
• Orange juice, three quarters cup	78	0	0	(1 and a half fruit)
• Coffee, regular, 1 cup	5	0	0	(free)
Breakfast Total	389	5.2	10	
Lunch	Calories	Fat (g)	% Fat	Exchange for:
• Chicken sandwich:				
Whole wheat bread, 2 medium slices	139	2.4	15	(2 bread/starch)
Chicken, unseasoned, 2 oz	60	1.5	23	(2 lean protein)
Lettuce, several leaves	1	0	0	
Tomato, 3 medium slices	10	0	0	(1 vegetable)
Mayonnaise, low calorie, 1tsp	15	1.7	96	(one third fat)
• Apple, 1 medium	80	0	0	(1 fruit)
• Water, 1 cup	0	0	0	(free)
Lunch Total	305	5.6	16	
Dinner	Calories	Fat (g)	% Fat	Exchange for:
• Salmon, 2 ounces edible	103	5	44	(2 lean protein)
• Vegetable oil, 1 and a half tsp	60	7	100	(1 and a half fat)
• Baked potato, three quarters medium	100	0	0	(1 bread/starch)
• Margarine, 1 tsp	34	4	100	(1 fat)
• Green beans, seasoned, half cup	25	0	0	(1 vegetable) (half fat)
• Carrots, seasoned	35	0	0	(1 vegetable)
• White dinner roll, 1 small	70	2	28	(1 bread/starch)
• Water, 2 cups	0	0	0	(free)
Dinner Total	427	18	35	
Snack	Calories	Fat (g)	% Fat	Exchange for:
• Popcorn, 2 and a half cups	69	0	0	(1 bread/starch)
• Margarine, three quarters tsp	30	3	100	(three quarters fat)
Total	1220	34	22	

Adapted from: The practical guide: Identification, evaluation and treatment of overweight and obesity in adults. US department of Health and Human Services, Public Health Service, NIH, NHLBI, Publication No: 00-4084

therapy, physical activity and behavioural modification must continue indefinitely. Long-term monitoring and encouragement are crucial for success in keeping the weight off.

Conclusion

Excess body weight is the sixth most important risk factor contributing to the overall burden of disease worldwide. This means that it is of paramount importance to treat these patients. The role of the clinician or nutritionist is to open the door to a healthier lifestyle that encompasses not only changes in dietary and exercise regimens but also the added benefits of improved parameters such as serum cholesterol and blood glucose. Weight control should be considered as an ongoing journey and not a final destination.

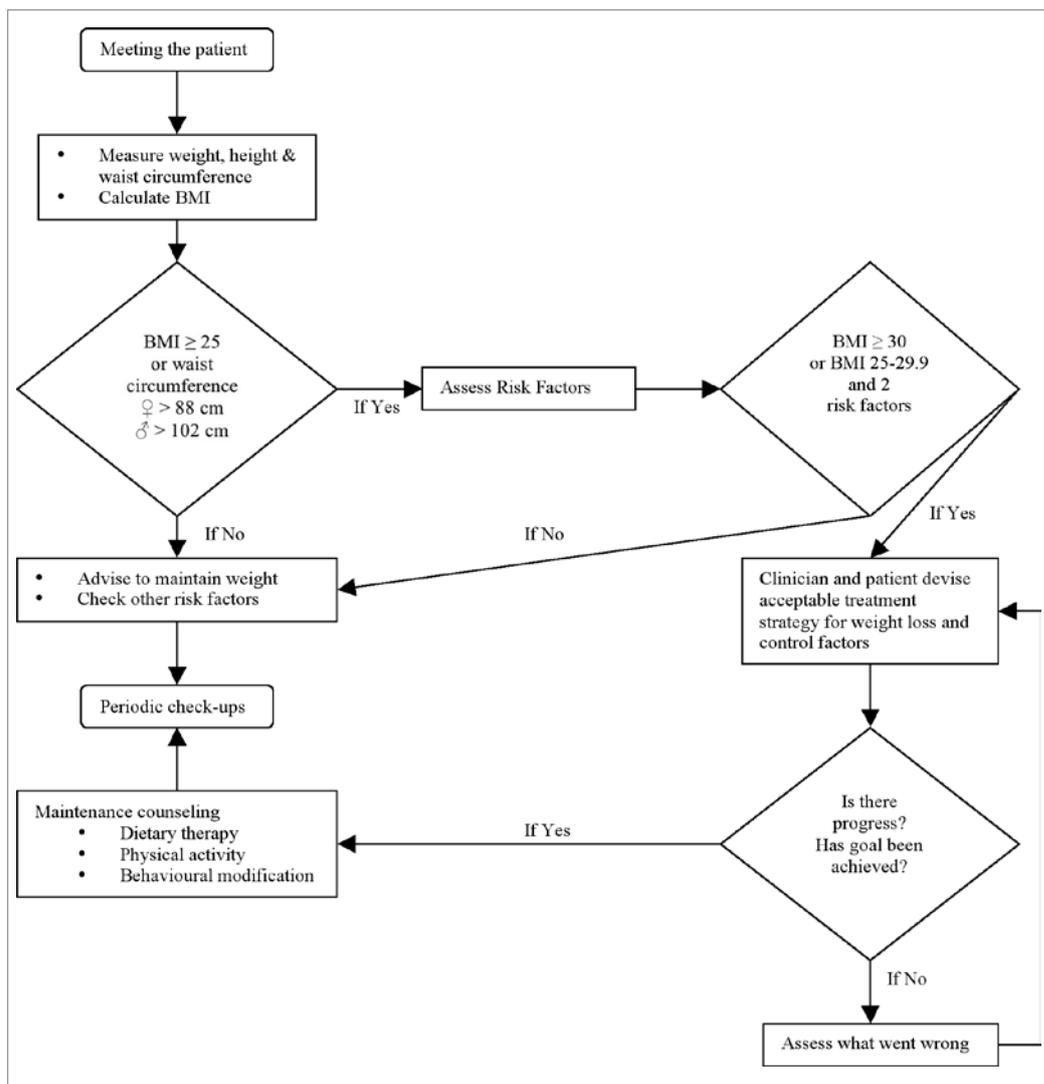


Figure 1: Treatment Algorithm

Adapted from: The practical guide: Identification, evaluation and treatment of overweight and obesity in adults. US department of Health and Human Services, Public Health Service, NIH, NHLBI, Publication No. 00-4084

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