

# Management of obesity: lessons learned from a multidisciplinary team

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## Introduction

Effective management of obesity is extremely challenging. It is easy for both patient and health care provider to feel frustrated and helpless in making any impact on what seems like a battle that cannot be won. The good news is that achieving and maintaining a modest degree of weight loss are very attainable goals. For this to happen, we need to approach the problem with realistic expectations, practical and non-judgemental advice and support, and commitment to a long-term approach, just like any other chronic disease.

The weight management team in St Columcille's Hospital (SCH) consists of dietitians, physiotherapists, psychologists, administrative staff, physicians, a surgeon, and an obesity specialist nurse. Unfortunately, many primary and secondary health care teams do not have access to a full complement of obesity expertise; in particular, the valuable input provided by psychologists and physiotherapists is often unavailable. It is therefore critical that all physicians and nurses caring for overweight and obese patients are confident in discussing appropriate lifestyle changes with their patients so that these issues are raised at every health professional encounter.

This article outlines some important lessons learned from being a member of the SCH weight management team, the first lesson being to approach the patient with an unbiased perspective.

## Obesity: a disease in its own right!

Obesity is often seen as a behavioural disorder resulting from eating too much and exercising too little or not at all. These factors are most definitely associated with weight gain. However, many studies have indicated that body weight is under substantial genetic control, influencing factors such as resting metabolic rate, regulation of appetite and satiety, body fat distribution, weight gain in response to overfeeding and physiological responses to physical activity.<sup>1</sup> In other words, obesity is not simply the result of gluttony and laziness. Some people do appear to have a greater predisposition to obesity, and this is nourished by a high-fat, low-activity lifestyle. Obesity does result from an imbalance between energy intake and expenditure, but management of the condition requires much more than just advising patients to 'eat less and exercise more'. People with chronic diseases such as diabetes, hypertension or heart failure are offered long-term support and follow up after diagnosis and initial therapy. When we consider appropriate management of obesity, we must aim for no less than what is standard in other chronic medical conditions.

## Avoiding bias in medical practice

Obese individuals are highly stigmatised and face multiple forms of prejudice and discrimination

because of their weight. Disparagement of obese individuals has been described as 'the last socially acceptable form of prejudice'.<sup>2</sup> A number of studies have confirmed that health care professionals (physicians, nurses, dietitians, medical students) possess negative attitudes toward obese patients, including beliefs that they are lazy, non-compliant, undisciplined, and have low willpower.<sup>3</sup> Fortunately, attitudes appear to be changing, particularly with increasing recognition that physiological and genetic factors may limit the amount of weight an individual can lose and maintain.

## Whom to target?

With such a highly prevalent condition, and often minimal time and resources available, it is important to identify which patients to target.

An initial assessment involves measurement of height, weight and calculation of body mass index (BMI, kg/m<sup>2</sup>), but should also include an exploration of the patient's attitude to their weight and establishment of their readiness to try to lose weight. This could include questions about their reasons and motivation for losing weight, any previous weight-loss attempts, attitudes towards physical activity, and potential barriers to lifestyle change (including financial limitations and time availability). The two key factors that predict a patient's ability to adopt healthy behaviours are importance and confidence. Losing weight must be important and high up the patient's priority list and they must have confidence in their ability to make lifestyle changes – assessing how the

patient feels about these factors is an important part of the consultation process.

The ideal time to intervene is prior to any weight gain (in the case of a normal weight patient), or prior to excessive weight gain (in the case of an overweight patient); see Table 1. At this stage, a discussion of the risks associated with obesity, and appropriate lifestyle changes to be made, may have a significant impact.

### Patient expectations

Most overweight and obese people, and some health care professionals, are unrealistic about the amount of weight that can be lost and the ability to maintain a lower weight. Patients' weight loss goals usually involve losing a large amount of weight, rapidly, by following a short-term diet, in order to look and feel fitter. Our goals as health care professionals should be to aim for slow and gradual, modest weight losses, by making lasting and permanent changes to dietary choices and general activity levels, in order to achieve and maintain 5–10% weight loss and improve metabolic fitness. We need to discuss these expectations with our patients, and explain why these modest goals will be more effective in the long term.

### Beneficial effects of modest weight loss

Achieving an ideal body weight is extremely unlikely in the majority of obese patients, and past efforts at reaching this impossible goal have been disheartening for both patients and physicians.

A goal of 5–10% weight loss is much more achievable and sustainable, and has a significant impact on cardio-metabolic risks and overall mortality; see Table 2.

Six months is a reasonable timeframe over which to achieve a 10% reduction in body weight. Many

#### • Those who are motivated to lose weight

• Those with obesity-related comorbidities (e.g. type 2 diabetes, hypertension, previous diagnosis of cancer)

• Those with a family history of cardiovascular disease or type 2 diabetes

• Those who are metabolically unhealthy

**Table 1.** Who should be targeted?

|                               |   |
|-------------------------------|---|
| <b>Mortality</b>              | <ul style="list-style-type: none"> <li>• &gt;20% decrease in total mortality</li> <li>• &gt;30% decrease in diabetes-related deaths</li> <li>• &gt;40% decrease in obesity-related cancer deaths</li> </ul>   |
| <b>Diabetes</b>               | <ul style="list-style-type: none"> <li>• 30–50% fall in fasting glucose</li> <li>• 50% fall in risk of developing type 2 diabetes</li> <li>• 15% decrease in HbA<sub>1c</sub></li> </ul>  |
| <b>Cardiovascular disease</b> | <ul style="list-style-type: none"> <li>• Decreases in blood pressure, low-density lipoprotein and triglycerides, insulin resistance, blood viscosity and red cell aggregation</li> <li>• Increases in high-density lipoprotein levels and fibrinolysis</li> </ul> |
| <b>Osteoarthritis</b>         | <ul style="list-style-type: none"> <li>• Significant reduction in pain and functional improvement</li> </ul>  |
| <b>Respiratory disorders</b>  | <ul style="list-style-type: none"> <li>• Improves sleep apnoea and general measures of pulmonary function</li> </ul>  |

**Table 2.** Benefits achieved with 10kg weight loss

studies have shown that rapid weight reduction is almost always followed by regain of the lost weight. If patients understand and accept the expected timeframe for weight loss, they are less likely to be disheartened with slow progress.

After six months of weight loss, the rate at which weight is lost usually declines, and then plateaus. Because energy requirements decrease as weight is decreased, diet and physical activity goals will need to be revised to create an energy deficit at a lower weight, allowing the patient to continue to lose weight. Alternatively, it may be more beneficial to concentrate on maintaining weight loss for a period of time before trying to lose more weight.

### Weight loss maths

Humans have acquired efficient biological mechanisms to obtain

and defend their energy stores. Contrary to media and advertising messages, *it is not easy to lose weight*. The weight loss equation is easy to understand – eat fewer calories than you burn. However, in order to do this, habits acquired over many years need to be changed. Health care professionals can help by educating, supporting, motivating, and monitoring progress.

### Diet

The majority of people are unaware of the high calorie content of the food they eat, and how much exercise is required to burn the calories contained in one bar of chocolate; see Table 3. In order to lose 1lb of body fat, we must burn 3500 calories. This means eating 500 calories per day less than our daily energy expenditure (1600–1800kcal/day for women and 2000–2300 kcal/day for men; exact figures can be

## Practice point

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| Calories earned             | Amount (kcal) | Calories burned (per hour of activity) | Amount (kcal) |
|-----------------------------|---------------|--|---------------|
| Standard bar of chocolate   | 290–350       | Lying still                            | 77            |
| Scone                       | 230           | Walking at 2mph                        | 200           |
| Bought sandwich             | 250–800       | Swimming                               | 260           |
| Quarter pounder with cheese | 515           | Walking at 4mph                        | 400           |
| Pint of beer                | 180           | Gardening                              | 400           |
| Glass of wine               | 110           | Running at 6mph                        | 600           |

**Table 3.** Approximate numbers for intake of calories in food and expenditure of calories through activity. Giving some examples to patients will help explain why it is so easy to gain weight when intake is not monitored

calculated using a patient's age, gender, weight, and an estimate of daily activity).<sup>4,5</sup> Keeping a diary is a useful starting point for making changes. This should include all meals and snacks, as well as the time they were eaten and the patient's mood at that time. Reinforce the importance of regular meals (particularly breakfast), and a high fibre, fruit and vegetable intake. Encourage patients to read food labels, and familiarise themselves with the calorie counts, and fat content, of common foods.<sup>6,7</sup>

### *Physical activity and exercise*

Physical activity is key to *maintaining* weight loss. Current recommendations from the American College of Sports Medicine and the American Heart Association are a minimum of 30 minutes of moderate intensity physical activity on at least five days per week for general health. For weight loss, or maintenance of reduced weight, physical activity should be increased to 60–90 minutes on at least five days per week. Research has shown that 10-minute bouts of moderately intense activity accumulated throughout the day can be just as effective as 30 minutes straight<sup>8</sup> (this may be easier to fit into a busy schedule). Portable electronic devices such as pedometers

have been shown to improve motivation, enhance behaviour change and increase overall physical activity. We encourage all our patients to use pedometers so they have an objective measure of their daily activity (steps/day) and can track a gradual increase in frequency, intensity and duration of activity.

However, the majority of patients will have many reasons for being unable to make time for regular exercise (examples include busy job, bad weather, or not enough energy at the end of the day). Others may adhere to the recommendations for a small amount of time and then revert to their usual sedentary lifestyle. At the very least, patients should be encouraged to reduce their inactivity rather than 'do more exercise'. Simple guidelines include less sitting and more standing, watching less television, walking to or from work, parking further from the supermarket or office, and never using elevators or escalators. A person's day can be divided into time spent at home, time spent in work and time going from home to work. Any extra time is leisure time. Many people try to fit physical activity into their leisure time but, unfortunately, today's busy lifestyle leaves very little leisure time. If this is the only part of the day where physical activity

happens, it will often be neglected. If physical activity is incorporated into the other three times of the day (home, work or commute), it is much more likely to be continued life-long.

### **Special groups**

#### *Children*

Management of overweight and obesity in children is an even more complex and challenging situation. Because of genetic and shared environment influences, overweight children will often have overweight parents. Both the child and parents may be unaware that their weight is too high. Sensitive and non-judgemental discussion of the issue is essential if parents are to accept any advice. Using growth centile charts, and showing parents that their child's weight is ahead of their height, is one way of discussing the fact that their child is overweight or obese. A detailed discussion of appropriate management strategies in children is beyond the scope of this article. Table 4 includes links to online literature with practical advice.

#### *Elderly patients*

Obesity in children and younger adults has attracted a great deal of recent attention, but there is a lingering 'ageism' in how the public and health professionals think about obesity in elderly people. The few studies that have focused on elderly individuals tend to conclude that keeping your weight stable after the age of 50 is more beneficial for the moderately overweight than attempting to lose weight. Clinical obesity, on the other hand, is harmful at any age. A recent audit of the elderly cohort (>60 years) attending our weight management unit found that significant weight loss was achievable, particularly in those patients with higher BMIs. Physical activity is extremely beneficial in

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|---|
| <ul style="list-style-type: none"> <li>• <b>National Obesity Forum Care Pathway and Toolkit</b></li> <li>• <a href="http://www.nationalobesityforum.org.uk">www.nationalobesityforum.org.uk</a></li> <li>• Algorithms, guidelines and advice on weight management issues in adults and children, for health care professionals and the general public</li> </ul>  |
| <ul style="list-style-type: none"> <li>• <b>Department of Health/NHS Obesity Care Pathway</b></li> <li>• <a href="http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4134408">www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4134408</a></li> <li>• Pathways for weight management in adults and children, including detailed advice about raising the issue of weight and downloadable leaflets for patients</li> </ul>   |
| <ul style="list-style-type: none"> <li>• <b>Exercise is medicine™</b></li> <li>• <a href="http://www.exerciseismedicine.org/">www.exerciseismedicine.org/</a></li> <li>• An initiative focused on encouraging primary care physicians to include exercise in treatment plans for patients. Includes exercise prescription and programme information</li> </ul>  |
| <ul style="list-style-type: none"> <li>• <b>National Heart Lung and Blood Institute (NHLBI). Identification, Evaluation and Treatment of Overweight and Obesity in Adults</b></li> <li>• <a href="http://www.nhlbi.nih.gov/guidelines/obesity/practgde.htm">www.nhlbi.nih.gov/guidelines/obesity/practgde.htm</a></li> <li>• Extremely comprehensive booklet from the NHLBI (order printed copies or download free) – patient information includes sample food and exercise diaries, weight and goal records, walking programmes, advice on overcoming obstacles to change, how to make healthy choices when shopping, cooking or choosing from restaurant menus</li> </ul> |

**Table 4.** Further information

elderly patients and should be actively encouraged. Apart from its effects on obesity, increased physical activity has been found to increase muscle strength and endurance, improve balance, and reduce the number of falls in elderly subjects, as well as producing a variety of psychological benefits, such as less depression.<sup>9</sup>

#### Severely obese patients

When an individual's BMI exceeds 50kg/m<sup>2</sup>, it is very difficult to achieve and maintain significant degrees of weight loss with conservative management alone. Surgical intervention is increasingly considered the only effective therapy for extreme obesity. It is currently recommended for patients with a BMI of >40kg/m<sup>2</sup>, or those with a BMI of >35kg/m<sup>2</sup> in the presence of significant comorbidities. However, lifestyle advice is still an essential part of management. The best results are achieved in patients who

follow healthy eating behaviours and engage in regular physical activity before and after the surgery. Weight loss begins to plateau at one year to 18 months postoperatively, and significant weight regain can occur if positive lifestyle changes have not been maintained.

#### Successful losers

The US National Weight Control Registry (NWCR) was established in 1994 and is the largest prospective investigation of long-term successful weight loss maintenance. Because many individuals find it so difficult to maintain weight loss long term, the NWCR was developed to identify and characterise those individuals who have succeeded. The following behaviours are highly prevalent in this group:

- Regular meals – in particular they eat breakfast every day.
- Regular physical activity – they exercise, on average, about one hour per day.

- Self-monitoring – they weigh themselves at least once a week and some also record food intake daily in a diary.
- Limiting of sedentary activities – they watch less than 10 hours of TV per week.
- They eat a low-calorie, low-fat diet – approximately 1400kcal/day, with 20–25% of energy intake from fat.

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#### References

1. Agurs-Collins T, Bouchard C. Gene-nutrition and gene-physical activity interactions in the etiology of obesity. Introduction. *Obesity (Silver Spring)* 2008;16(Suppl 3):S2–4.
2. Stunkard AJ, Sobal J. Psychosocial consequences of obesity. In *Eating Disorders and Obesity: A Comprehensive Handbook*. Fairburn CG, Brownell KD (eds). New York, NY: Guilford Press, 1995; 417–21.
3. Puhl R, Brownell KD. Bias, discrimination, and obesity. *Obes Res* 2001; 9:788–805.
4. BMI Calculator: Harris Benedict Equation. (Accessed at [www.bmi-calculator.net/bmr-calculator/harris-benedict-equation/](http://www.bmi-calculator.net/bmr-calculator/harris-benedict-equation/).)
5. Calorie calculator. (Accessed at [www.mayoclinic.com/health/calorie-calculator/NU00598](http://www.mayoclinic.com/health/calorie-calculator/NU00598).)
6. Irish Nutrition and Dietetic Institute – Food label fact sheet. (Accessed at [www.indi.ie/docs/481\\_food\\_label\\_factsheet.pdf](http://www.indi.ie/docs/481_food_label_factsheet.pdf).)
7. Food Labels. (Accessed at [www.safefood.eu/en/Consumer/Preparing-food/Cleaning2/Food-labels/](http://www.safefood.eu/en/Consumer/Preparing-food/Cleaning2/Food-labels/).)
8. O'Donovan G, Blazevich AJ, Boreham C, *et al.* The ABC of Physical Activity for Health: a consensus statement from the British Association of Sport and Exercise Sciences. *J Sports Sci* 2010;28:573–91.
9. Elia M. Obesity in the elderly. *Obes Res* 2001;9(Suppl 4):244S–8S.