Bariatric Surgery Dietitian Section

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Before considering tier four management of obesity, it must first be recognised as a condition that *needs* to be treated. There has been much debate over recent years as to whether obesity is a chronic disease and, if so what is its nature; biological, psychological, social, or a mixture of all these states. What is uncontroversial is that obesity is the biggest health issue of our time according to the Foresight report by Butland et al. in 2007 and 40% of the population can be expected to be obese by 2025 and 50% by 2050 with a predicted cost of 10 billion pounds to the NHS and 49.9 billion pounds to the wider economy. Dietitians specialising in treating individuals before and after bariatric surgery must accept the necessity to recognise obesity as a disease, not merely a lifestyle choice, and having done so to manage it appropriately to assist patients in making appropriate changes in their diet and lifestyle to induce optimum health gain.

Obesity is now recognised as a disease by a wide range of organisations, including the American medical association and the world health organisation. However, this remains controversial with many people who argue that such a view is counterproductive. The two main opposing cases put forward are (a) that obesity is caused by people's own choices and (b) that classifying obesity as a disease will mean that people will fail to take personal responsibility for losing weight and improving their health.

The first of these arguments fundamentally relies on the concept that obese individuals are morally deficient and totally responsible for becoming obese. It is often said that obese people are lazy and just need to eat less and exercise more and that it is unfair that society should pay for their bad choices. However, lifestyle is already recognised as a major cause of many other conditions, including heart disease, liver disease, diabetes, and even many cancers. There does not seem to be a valid

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argument against classifying these conditions as serious, genuine illnesses or that we should not treat the sufferer despite their choices being substantially to blame.

The causes of obesity are complex, and we are beginning to recognise the critical interplay of environmental, genetic, and psychological factors which lead to some people becoming obese, while others remain a healthy weight. There are some known variables that contribute to individuals becoming obese. The correlation between obesity and psychiatric illness is well documented. These include binge eating disorder, depression (Annagur 2015) and personality disorders (Johnson et al. 2006; Chen et al. 2015; Carpinello et al. 2009; Sansome et al. 2008). There is growing evidence that gut hormones affect the brain, which may be a big driver of overeating and obesity (Jerlhag et al. 2006, Jerlhag et al. 2007; Dickson et al. 2012; Richards et al. 2015) (see Chap. 2). Genetic factors are likely to be a major cause of obesity, but given that the genetic mix in the population has not changed alongside the rise in obesity, it is likely that either epigenetic factors are more important or that genetic predisposition is not enough on its own to cause obesity. As well as these less obvious underlying causes, the overt obesogenic factors, societal and environmental changes that predispose the population to weight gain, must still be considered in the clinical context. In other words, if a patient displays a psychological, genetic, epigenetic, or neuro-endocrine cause, the advice to 'eat less and do more' is still valid, but only as a small element of overall management. We now have unprecedented access to high calorie-dense foods and labour-saving technology, which have evolved significantly, damagingly skewing the energy balance equation, which can now be seen as increasingly obsolete.

The argument that classifying obesity as a disease will stop people from taking responsibility for their own health is also fundamentally flawed. In the case of other conditions such as COPD, heart disease, and sleep apnoea, which have a significant lifestyle component, no concern exists that people will not try to improve their own health: instead, the goal is to work to empower and motivate individuals to manage their condition, alongside whatever pharmacology, technology, or surgery is available. Obesity is no different. Furthermore, the burden of obesity is also severe for many individuals and has a significant impact on their day-to-day lives. It seems likely that people would be more open to accessing treatment and trying to improve their health if obesity was classified as a disease rather than a lack of willpower, gluttony, or sloth.

As the causes of obesity are complex, it is unfair to classify obesity as a condition that the individual is alone responsible for. It is also unfair to say that we should not classify obesity as a disease or treat it if we are willing to classify and treat other diseases which we know to be affected by lifestyle choices. Having established this, we need to assess, diagnose, and treat obesity as the disease that it is as well as relying on government, schools, and industry to change society to prevent obesity in the future.

For clinicians aspiring to treat obesity, the next question is: what treatment options should be offered? As a dietitian, it may seem counter intuitive that we should give precedence to the option of bariatric surgery. Dietitians might normally

be associated with diet and lifestyle interventions as the mainstay of obesity treatment. A high-quality diet and lifestyle intervention can be very successful for some patients as demonstrated by the Look Ahead trial (West et al. 2006). Unfortunately, even with high-quality lifestyle interventions, many patients fail to achieve meaningful weight loss, weight regain is typical, and attrition rates tend to be high.

What is clear is that there need to be other therapies alongside diet and lifestyle intervention, designed to help those patients who are not successful with initial therapy or who need to lose more weight than is possible with this mode of treatment.

This includes pharmacotherapy; however, our options are very limited in the UK at present, only orlistat being available on the NHS. Despite being an effective therapy, orlistat is often poorly tolerated by patients who may struggle to make the necessary dietary changes to work with the drug. Other options are on the market, such as Saxenda or Mysimba, but they are not available for NHS patients who may not be able to fund a private prescription. Even with pharmacotherapy alongside a diet and lifestyle intervention, many patients will not be able to lose enough weight to have a significant impact on their disease. This is why the use of surgical intervention should be considered.

All of these options are useful and appropriate for treating obesity. It should not be assumed that if a patient is unsuccessful with one intervention that they would not be have a different result with another. As with many disease states at present, we cannot identify which patients would benefit from which intervention will be successful with which patient. This being the case, we should start with the least invasive, moving over time to the most invasive treatment. We should not put barriers to accessing a more invasive treatment such as surgery just because a patient has not been successful with the less invasive options.

At present bariatric surgery is the treatment option with the best evidence base for treating obesity. Individuals often lose 70% of their excess body weight. The physical changes after bariatric surgery make it easier for patients to adhere to the diet and lifestyle changes needed for long-term weight loss.

There are four main areas of dietetic practice associated with bariatric surgery: assessment of the patient before surgery, pre-surgical diet, post-surgical diet and long-term supplementation and biochemical and nutritional monitoring.

Assessment of the Individual Before Surgery. Patients should see a dietitian before surgery as part of the bariatric MDT. The dietitian should assess their nutritional status and aim to correct any deficiencies before surgery. Alongside other members of the MDT, the dietitian should also aim to assess the patients' ability to make appropriate lifestyle changes after surgery. If patients are not able to make such changes, they are unlikely to be successful. This can be assessed in many ways, but predictive factors may be they have made lifestyle changes in the past, even if these have not led to any significant weight loss. Are they able to identify what lifestyle changes they will need to make after surgery, remembering that patients are likely to find it easier to make these changes after they have had surgery.

Pre-Surgical Diet. Many obese individuals will have an enlarged liver, which is situated anterior to the stomach, presenting surgeons with a practical challenge as an enlarged liver can hamper access to the stomach by laparoscopic surgery. This

means that the liver must be shrunk by reducing its glycogen stores and therefore, the amount of water stored within. This is done by following either a strict low carbohydrate diet or a low-calorie liquid diet.

Post-Surgical Diet. After bariatric surgery, patients need to follow a food reintroduction plan to enable them to get back to normal textured foods. There is much debate about the best way to do this, but an example food reintroduction plan for a gastric bypass or sleeve gastrectomy would be as follows:

Day 1: Clear fluids
Week 1–2: Liquids only
Week 3–8: puree/soft mashed consistency
Week 8–10: normal textured foods

When the patient is re-established on normal textured foods, they need to follow a diet of three meals a day with one or two snacks eating off a 7-in. plate; if they have had a gastric bypass or sleeve gastrectomy, gastric band patients will typically have larger portions. They should aim to have approximately half of each meal be a protein food such as meat, fish, eggs, dairy, nuts, pulses, or vegetarian protein alternatives. As the patient is only able to eat small portions of food, it is important that they eat foods of high nutritional value. They will also need to follow an appropriate supplementation regimen as outlined in the bomss clinical guidelines (O'Kane et al. 2014).

Biochemical and nutritional monitoring should be done regularly following bariatric surgery. At the Luton and Dunstable hospital, patients are seen at 6 weeks, 3 months 6 months, 1 year, and then annually. A dietitian or other suitably trained professional should see the patient check concordance with an appropriate diet and the appropriate supplementation regimen. The nutritional guidelines (O'Kane et al. 2014) also state the appropriate biochemical monitoring post-surgery. It is important that a patient's biochemistry is monitored and any deficiencies are corrected.

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