Adult obesity 1: tackling the causes of the obesity epidemic and assessing patients

Obesity is growing in prevalence, and nurses need to understand its causes, consequences and co-morbidities, and how to discuss it with patients

INTRODUCTION

If current trends continue, 60% of men, 50% of women and 25% of children in Britain will be obese by 2050 (Foresight, 2007). Foresight’s report highlights the weakness of current anti-obesity measures and the scant evidence for any truly effective treatment or prevention policies. It acknowledges that excess weight is increasingly seen to be the norm in society and, due to lack of awareness of sustainable or even available healthy, cheap lifestyle choices, individuals can no longer be held solely responsible for obesity. The UK appears to have a particular predisposition to obesity and identifies its effects on the body. Metabolic syndrome is shown to be pro-atherogenic and a precursor to cardiovascular disease and diabetes. This part also outlines how to assess patients, and discusses the best way to broach the awkward subject of weight with those not even aware they are at risk.

LEARNING OBJECTIVES

- Be aware of the reasons for the current obesogenic environment.
- Have a clear understanding of the risks of being overweight or obese and be able to explain them to patients in terms they can understand.

CAUSES OF OBESITY

So why is our environment so obesogenic? The existence of a genetic predisposition towards obesity caused much media excitement in 2007 when teams at Oxford and the Peninsula Medical School in Devon established the existence of the FTO gene, which appears to affect weight regulation. Certain conditions such as Prader-Willi and Bardet-Biedl syndrome are also causes of marked obesity (Chee and Olczak, 2008; Kennedy, 2008), but they are rare. Much more commonly, people living in a modern social environment seem particularly susceptible to obesity (Qi and Cho, 2008). In Kennedy (2008), two leading researchers debated the causes of obesity: genes or environment? One argued that obese people will be found in every society and this is more the result of the over-availability of tasty, nutritionally dense food and lack of physical exercise. The opposing researcher disagreed, arguing that the most important influence on individuals’ degree of adiposity is their inherited set of genetic variants (Kennedy, 2008).

The widespread lifestyle habits of developed societies, together with a genetic predisposition that favours thrifty people who can survive in times of famine, is one of many accepted reasons for the continuing trend towards a heavier society. Yet times are changing and we are seeing the end of the era of cheap food. Lock (2009) predicts that food price inflation will further compound the obesity problem as people buy relatively cheaper, poorer quality foodstuffs to save money. Energy expenditure is also changing, with television and other media frequently blamed for rising levels of obesity.

VISCERAL FAT

The health threat from obesity is now known to stem largely from fat around the organs, or excess visceral fat (Fig 1). This in turn leads to abdominal obesity, hypertension, glucose intolerance and insulin resistance, resulting in increased cardiovascular risk.

Until recently, adipose tissue was thought to be inert, having little effect on the body, but new research shows it is a secretory endocrine organ producing chemicals that are toxic to the body. Free fatty acids are...
carried by the hepatic portal circulation, which in turn raises hepatic glucose output and thereby hepatic insulin resistance. The rise in free fatty acid formation causes hypertriglyceridaemia, more insulin resistance and reduced glucose use by muscles. Excess visceral fat promotes insulin resistance, dyslipidaemia and the release of adipokines. The net result of these changes is an increase in insulin resistance and inflammation, which is pro-atherogenic (Karet, 2008; Eckel et al, 2005).

**IMPACT ON OTHER LONG TERM CONDITIONS**

Obesity is implicated in a number of diseases. It is directly associated with the morbidity and mortality from diabetes, cardiovascular disease, cancers, sleep apnoea syndrome and chronic obstructive pulmonary disease (COPD). Largely this is attributable to the insulin resistance and other metabolic abnormalities caused by excess visceral fat and dyslipidaemia, as explained above (Qi and Cho, 2008).

Metabolic syndrome, a clustering of abnormal physical findings, was classified by the International Diabetes Federation (2006) as the core presence of central obesity with any other two of: hypertension; raised triglycerides; raised fasting blood sugar levels; and low high-density lipoprotein (HDL) cholesterol levels.

People with metabolic syndrome have a five-fold greater risk of developing type 2 diabetes, if not already present (Stern et al, 2004).

**CO-MORBIDITIES**

Many experts feel the metabolic syndrome does not adequately explain and identify cardiovascular risk factors. We must consider the perception that other factors such as polycystic ovarian syndrome and non-alcoholic fatty liver disease are also implicated (Haslam, 2008; Preiss and Sattar, 2007).

Obesity also increases the risk of cancer – approximately 70,000 new cancers a year are diagnosed in Europe which are attributable to excess body weight, with obesity-related cancer a greater problem for men than women (Dobson, 2009). A recent survey of around 4,000 people found only 3% were aware that body weight was a risk factor for cancer (Cancer Research UK, 2009).

Departures from the normal physiological and metabolic state carefully maintained by the body’s homeostatic mechanisms, fuelled by weight gain, result in changes to the way glucose and fatty acids are used by the body (Zammit, 2009).

Type 2 diabetes and insulin resistance develop as the beta cells in the pancreas become less sensitive to the effects of insulin and the resulting rise in endogenous insulin levels results in even more weight gain. Latest figures from Diabetes UK (2009) show there are now more than 2.6 million people with diabetes in the UK and more than 5.2 million registered as obese.

The benefits of living a healthy and active lifestyle should be promoted to everyone, but it is imperative for overweight and obese people to acknowledge and act on this as early as possible.

Obesity is often classified according to body mass index (BMI) but in many people it is more helpful to measure waist circumference as this gives a greater indicator of risk, especially in those of Asian origin. Table 1 explains the BMI classification of weight (Poirier et al, 2006).

**Table 1. Classification of overweight and obesity by body mass index, waist circumference and associated disease risk**

<table>
<thead>
<tr>
<th>Disease risk* relative to normal weight and waist circumference</th>
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<tbody>
<tr>
<td><strong>BMI, kg/m²</strong></td>
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<tr>
<td>Underweight</td>
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<tr>
<td>Normal</td>
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<tr>
<td>Overweight</td>
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<tr>
<td><strong>Obesity, class</strong></td>
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<td>I</td>
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<tr>
<td>II</td>
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<td>III (extreme obesity)</td>
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*Disease risk for type 2 diabetes, hypertension and cardiovascular disease

Source: National Institutes of Health (1998)
MEASURING OBESITY
As with any long term condition, obesity management requires a practical, focused approach. Even modest weight loss can produce health benefits and reduce risk.

Nurses in primary care settings are likely to have the most contact with people who are obese or overweight, often as a result of them attending for some other (seemingly unrelated) condition. Convincing apparently otherwise asymptomatic patients of the importance of risk factor interventions, for example reducing waist circumference, is often fraught with difficulty (Turner, 2007).

However, there are significant variations in the management of those with obesity, co-morbidities from the condition or metabolic syndrome (Barnett et al, 2009).

Patients may present to nurses in primary care as a self-referral, as a GP referral or, increasingly, as a referral from acute care with instructions that they must lose weight before they can undergo operations/procedures. Assessment is the key; all patients should have a comprehensive assessment at the outset of their treatment plan with agreed goals and outcomes based on this (Box 1).

BROACHING THE SUBJECT
Perception of obesity is a major issue. If patients feel fit and healthy, they do not seek help and advice from healthcare professionals. It is often only when they start to have symptoms that they feel the need to consult professionals for help.

Embarrassment will stop many from accessing care, as well as fear that practitioners will blame them for putting on weight. Indeed, the lay definitions of “risk” and “obesity” are often far removed from healthcare professionals’ own criteria, which presents a barrier to communication (Johnson-Taylor et al, 2008).

Healthcare professionals can also slip into a blame culture that is not conducive to patient assessment should cover the co-morbidities from the condition or metabolic syndrome (Barnett et al, 2009).

REFERENCES