

## The obesity epidemic<sup>1</sup>

Although obesity itself is not new, the prevalence of obesity in society certainly is, and it is increasing at such a rate that many refer to the 'obesity epidemic'. Out of a global population of approximately six billion people, the World Health Organization (WHO) estimates that 1.2 billion are overweight (defined as having a Body Mass Index, BMI, of 25-30)<sup>2</sup> and at least 300 million of these are obese (defined as having a BMI over 30) [Butland et al., 2007:24]. Nor is obesity just a problem in developed countries, as much of the developing world has also witnessed a three-fold increase in obesity rates over the last 20 years [Hossain et al., 2007: 213].

Obesity can be seen as a naturally occurring risk, in the sense that it results from human physiology: if energy intake exceeds energy output, this will lead to the storage of excess energy as fat. However, the obesity epidemic is more a result of *human* activities (lifestyle, patterns of food consumption and production) than of natural forces.

The human and economic costs of the obesity epidemic are growing. There is an overwhelming amount of evidence supporting the fact that obesity is linked to increased morbidity. The risks of developing hypertension, cancer (colon, breast, oesophagus, endometrial and kidney), type two diabetes, coronary heart disease, stroke, gallbladder disease and osteoarthritis are all increased in obese individuals [Kim and Popkin, 2006: 63-4]. The risk of becoming diabetic, for example, is 9.7 times higher at a BMI of 30 or above [Eng, 2004: 26]. In the United States (US), the country currently with the greatest obesity problem, the Surgeon General estimates that 300,000 deaths per year are associated with obesity or overweight and that total direct and indirect costs amounted to USD117 billion in 2000 – 10% of total US healthcare costs [III, 2004: 4-6]. In the United Kingdom (UK), which currently has the third-highest obesity rate in the world, costs to the National Health Service of overweight and obesity are around £5 billion per year today and are projected to double by 2050 (the wider costs to business and society are estimated to reach £49.9 billion) [Butland et al., 2007: 4].

In addition to increased susceptibility to many diseases, obese individuals also tend to have higher absenteeism rates from work and to retire at a younger age [Kim and Popkin, 2006: 63]. This imposes further costs on society, owing to lost productivity and higher worker compensation costs.

Increased health care and workers compensation costs have serious implications for the insurance industry, too, since many of the costs of obesity are passed along to insurers in the form of claims. Insurers in both the US and the UK have seen a recent increase in the number of claims related to obesity and diabetes and, in an effort to reduce their exposure, some have added exclusion clauses to their health insurance policies pertaining to obesity-related conditions and treatments [Dewey and LeBoeuf LLP, 2008]. However, the greatest risks for insurers could be related to liability issues – insuring businesses against liability awards may turn out to be expensive if a precedent<sup>3</sup> is set for successful obesity-related litigation.

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<sup>2</sup> BMI is a statistical measurement used to estimate healthy body weight, based on height (weight in kilos / height in metres<sup>2</sup>). A normal BMI is defined as between 18.5 and 25.

<sup>3</sup> In a high profile case in 2002, a group of obese teenagers in New York tried to sue McDonald's for their condition, alleging negligence in the sale of foods that are high in cholesterol, fat, salt and sugar. The suit was dismissed owing to the plaintiffs' inability to "isolate the particular effect of McDonalds' food on their obesity and other injuries" [III, 2004: 9].

The obesity epidemic has been, and continues to be, influenced by several generic factors that can contribute to risk emergence, notably: scientific unknowns, , system complexity and, perhaps most of all, technological advances and changing social dynamics. At this point in time, most of these factors have served as amplifiers of the problem.

Some **scientific unknowns** about the causes of obesity – with regards to the biological mechanisms by which people gain excess weight and adipose tissue – still exist. Knowledge about the relationship between weight status and health is also incomplete [Caballero, 2007: 2]. For example, although it is known that obesity leads to an increased mortality risk, it is unclear whether weight loss is associated with a decrease in mortality risk [Eng, 2004: 29]. With only imperfect knowledge of all facets of the problem, it is difficult to properly assess the risk, let alone to decide which ways would be best to mitigate it. While gains in scientific knowledge have great *capacity* to attenuate the obesity epidemic – for example via the discovery of new drugs and treatments for the disease or via the education of consumers on how to avoid becoming obese – they do not currently appear to be attenuating the problem. This may be partly due to ineffective **communication** of knowledge to consumers, an unwillingness to know on the part of consumers, or to uncertain and incomplete scientific evidence, which is largely a result of the complexity of the systems involved.

This complexity results from the fact that “obesity is the consequence of interplay between a wide variety of variables and determinants related to individual biology, eating behaviours and physical activity, set within a social, cultural and environmental landscape” [Butland et al., 2007: 79]. For example, the obesity system map developed by the UK government’s Foresight Programme Project on ‘Tackling Obesities’, includes seven key subsystems all interacting with each other in complex ways: physiology; individual activity; physical activity environment; food consumption; food production; individual psychology; and social psychology [Butland et al., 2007: 85].

However, by far the greatest amplifying factors of the obesity epidemic have been **technological advances** and concurrent changes in **social dynamics** (globalisation, demographics and cultural norms). Technological innovations (for example motor vehicles and industrial machinery) and modern forms of entertainment (such as television and computer games) have tended to reduce the average required caloric intake and have led to decreased amounts of physical activity in leisure time.

Globalisation in conjunction with advancements in food technology have led to an abundance of easily accessible calories in many parts of the world, including in developing countries, and to a wider variety of available processed foods (some of which are very energy-dense) [Caballero, 2007: 4].

Demographics, trends towards urbanisation in particular, are also conducive to the growing obesity epidemic, as more and more people work in ‘modern’ jobs with passive physical input and live in cities where the urban design is such that car use is promoted whilst opportunities for walking are restricted. The modern lifestyle, including longer working hours and more women in the workforce also leads to a greater demand for pre-prepared meals and take-away foods [James Martin Institute, 2008]. The institution of family, including the tradition of eating common meals, has also undergone significant change.

These social and cultural changes have not happened uniformly across all countries or sectors of society. At least in developed countries, there is an inverse relationship between socio-economic status and obesity, with the highest rates of obesity and type two diabetes being observed among the most disadvantaged groups, notably the poor and minorities [Drenowski and Darmon, 2005: 270S]. The two main reasons for this are, firstly, education and lack of cultural resources (i.e., lack of knowledge about nutrition and how to lead a healthy lifestyle) and, secondly, the higher cost of a healthy diet (retail prices of fruit and vegetables have increased at a much greater rate than those of fats, oils and sweets) [Drenowski and Darmon, 2005: 269S].

In developing countries (and sometimes also within immigrant communities in developed countries), the relationship between poverty, development and obesity is slightly more complicated. Cultural factors and different health beliefs can have an influence on obesity trends. For example, in some cultures (e.g., parts of sub-Saharan Africa), being overweight is considered a sign of wealth and therefore being obese is a status symbol. In such cultures, there may be a positive relationship between socio-economic status and obesity [Fezeu et al., 2006]. This may also be the case under situations of extreme poverty and very low levels of development (e.g., countries where per capita GNP is less than \$800 per year). Here, obesity is an impossibility for all but the richest, with malnutrition and underweight being the principal concerns for the majority. In developing countries with higher per capita GNPs (around \$3000 per capita), however, there is a similar trend to that seen in developed countries – being poor is associated with an increased risk of obesity [Hossain, 2007: 213].

In addition to these general trends, there are also **varying susceptibilities** to obesity-related risks: some individuals will be much more susceptible to becoming obese than others. In terms of susceptibility owing to genetic variation, it is useful to distinguish between early-onset severe obesity and late-onset ‘common’ obesity. The former often has a strong genetic component (often involving mutations in genes that regulate appetite and metabolism) and is quite rare [Lyon and Hirschhorn, 2005: 216S]. Common obesity, on the other hand, is a complex trait where inheritance does not take place in a predictable pattern and behavioural, environmental, cultural and socio-economic influences usually play just as important a role as genetics [Lyon and Hirschhorn, 2005: 215S]. Nevertheless, certain populations, because of their genetic backgrounds, have been found to be more susceptible to obesity-related risks. In Asian populations, for example, the risk of developing type two diabetes or cardiovascular disease greatly increases at levels of BMI that are within the acceptable range in European populations [Seidell, 2000:S5; Hossain et al., 2007: 214-15].

Dealing with the complex nature of the obesity problem is a challenge for governing institutions. The current trends in obesity are being driven by many different trends in society (c.f. the obesity system map, above) and it would take a well-coordinated approach from numerous government departments at once, and at various levels (local, state, national), in order to really be effective. For example, education campaigns on healthy eating; reviews of public transportation policies; access to open areas for recreation and sport; regulations on food labelling and advertising; availability of health care and health insurance policies, etc. are only some of the diverse issues that would need addressing. Furthermore, the responsibility of dealing with the problem of obesity does not lie solely with the state. Cooperation and coordination with other key stakeholders such as the medical profession, insurers and food manufacturers is vital, too.

All of these actors must recognise obesity-related risks as a priority for action if significant risk attenuation is to be achieved. There is likely to be a considerable difference between developed and developing countries in the level of priority given to obesity-related risks, with the latter having fewer resources to outlay and potentially more urgent, development-related issues to address. In developed countries, even though the obesity problem attracts a good deal of media attention and popular culture seems obsessed with appearances and body image, at the level of the individual it may be the case that people do not recognise obesity as an important risk. Studies show that perceptions of ‘normal’ are changing – becoming larger – and few people recognise the risks associated with their weight [Murphy, 2009].

The adaptation of services and institutions to this increase in body-size could be seen as another risk amplifier, in that it may contribute to the ‘normalisation’ of obesity. For example, clothing companies catering more for larger sizes and hospitals purchasing special equipment such as bariatric beds and reinforced operating tables to be able to cater for obese patients [Day, 2005]. However, at the same time, the way other industries are adapting to the obesity epidemic could have an attenuating effect by creating incentives for slimming – some US airlines already have policies forcing obese passengers to pay for two seats [Credeur, 2009] and some insurance companies promote weight loss in their health insurance policies by including gym memberships at heavily subsidised rates, awarding

frequent flyer miles for meeting weight-loss targets, or providing wellness programmes and nutritional counselling [Ill, 2004: 17; Lloyds, 2008; Dewey and LeBoeuf LLP, 2008]. The food industry is also adapting, with the aim of both minimising liability risks (by reducing portion sizes, amounts of fat and sugar in products and not marketing certain products to children) and taking advantage of the new market for diet products (by producing more low-calorie foods).

In the public sector, there is evidence that governments have started to act to try to attenuate the obesity epidemic via the introduction of regulations governing the labelling of food products or banning certain 'bad' foods from sale in schools; instigation of public awareness campaigns; or the creation of special projects dedicated to developing governance strategies to address the obesity problem (e.g., the UK government's Foresight project on obesity). Such action is not necessarily straightforward due to the concentrated interests involved. Substantial political commitment is required to make decisions that may be disadvantageous for the powerful food industry (for example, the food industry may lobby against labelling requirements or other restrictions that could hurt its business). It is also important that actions to curb the obesity epidemic avoid the stigmatisation of overweight people. Battling the obesity epidemic will inevitably involve making calculated trade-offs among opposing interests.

In conclusion, it is clear that there are substantial risks associated with obesity; health risks for the individual that, on a larger scale, create significant economic and social risks for society. The emerging dimension of these risks stems from the alarming rate at which obesity is increasing in many countries, and not just in the developed world. Of the factors contributing to amplification of the obesity epidemic, social dynamics show strong momentum, are complex and may be hard to reverse or subvert. Both the public and private sectors have already started to adapt to deal with rising obesity and, in the case of the former, to try to curb it. Nevertheless, ending the obesity epidemic will require a long-term commitment. Governance strategies must span generations in order to change engrained habits and build new structures to support healthy diets and increased physical activity [Butland et al., 2007: 16].

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