

Obesity – a Growing Problem Worldwide

“We have a huge epidemic and disaster on our hands. Obesity is doubling every five years in many parts of the world so we face an epidemic that is coming like a tidal wave.”

*Professor Philip James
Chairman, International Obesity Task Force.*

What Is Obesity?

Obesity is a medical condition in which there is an excess of body fat. This is due to an energy imbalance in that more calories are consumed (food) than spent (physical activity). This surplus energy is stored as fat.

Worldwide, over 180 million people are estimated to be clinically obese¹. In the UK it was estimated that, in 1997, 17% of adult men and almost 20% of adult women were obese². These figures had more than doubled since 1980³.

How Do You Measure Obesity?

The most commonly used measurement is the body mass index (BMI). This is calculated by dividing the person's weight (in kilograms) by their height (in metres) squared, i.e.

$$\text{BMI} = \frac{\text{Weight (kg)}}{[\text{Height (m)}]^2}$$

Example: Height: 1.71 m (5 feet 7 inches)
Weight: 100 kg (220 pounds)

$$\text{BMI} = \frac{100}{(1.71)^2} = 34.2 \text{ kg/m}^2$$

The World Health Organisation (WHO) classifies obesity into grades of BMI according

to the degree of risk to health. A BMI greater than 40 poses the most serious health risk⁴.

WHO Classification of Overweight and Obesity	
Description	BMI Range
Normal	18.5 - 24.9
Overweight	25.0 - 29.9
Obesity class I (moderate)	30.0 - 34.9
Obesity class II (severe)	35.0 - 39.9
Obesity class III (very severe)	≥ 40.0

The medical risks from obesity are particularly pronounced if excess fat is distributed around the middle of the body and around the internal organs. This can be measured by waist circumference or waist-to-hip ratio (WHR). Patients with a high WHR (greater than 1.0 in men and 0.85 in women) have more fat distributed abdominally and are at a greater health risk⁵.



¹ World Health Organisation (WHO) estimate 1999.

² Prescott-Clark, P. and Primates, P., editors, *Health Survey for England 1997*, London HMSO.

³ Department of Health, *The Health of the Nation: One year on ... a report on the progress of health of the nation*, DoH, 1993.

⁴ WHO, Geneva 1995. WHO technical report series, 854 Physical Status; *The use and interpretation of anthropometry*. Report of a WHO Expert Committee.

⁵ Blundell, J.E. *et al*, Carbohydrates and human appetite. *Am. J. Clin. Nutrition* 1994; **59**: 728s - 34s.

Why Do People Become Obese?

Complex mechanisms act within the body to maintain body weight within a narrow range appropriate for the individual. However, this internal regulation can be influenced by many different factors:

The nutrient composition of meals is important in determining the amount of energy that is consumed and ultimately stored by the body. For example, dietary fat contains more calories per gram than protein or carbohydrate, but is thought to have the lowest capacity to satisfy hunger. Therefore, a diet that is high in fat can promote both excessive energy intake and over-consumption of food.

Daily eating patterns can also influence the amount of food eaten. Missing breakfast, snacking and eating to compensate for stress all tend to promote over-eating and therefore obesity.

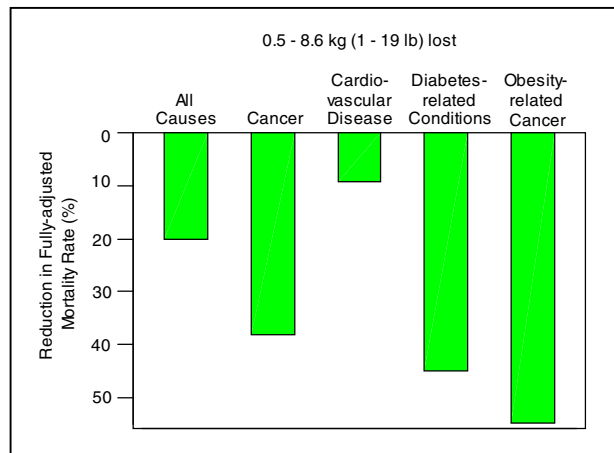
Physical activity patterns have a significant influence of the regulation of body weight. Exercise not only forces the body to burn up more energy but, if taken regularly, is thought to also increase the resting metabolic rate⁶.

The contribution of *genetic factors* to the development of obesity is an area which is currently undergoing research. There are now more than 20 genes which are thought to be linked to the development of obesity.

The Risks of Obesity

Obesity is a serious health risk factor. There is substantial evidence that obesity not only increases health risk but also reduces life expectancy, mainly through associated illnesses. Potentially fatal conditions associated with obesity include type 2

diabetes, coronary heart disease, cancers and gall bladder disease. A sustained weight loss of 5 - 10 % of initial body weight reduces the health risks associated with obesity⁷.



Based on data referred to in:
Williamson, D.F. *et al*, *Am. J. Epidemiol.* 1995; **141**: 1128-41

Treatments

Treatments for obesity should address both sides of the energy equation (energy intake and energy expenditure). Self-help weight loss programmes, such as Weight Watchers, offer guidance on diet, physical activity and lifestyle. A number of prescription weight management products, which are used in conjunction with an integrated weight management programme, are available. This consists of nutritional advice, physical activity, lifestyle modification and drug treatment. Treatments aim to achieve a sustained moderate weight loss (5 - 10 % of initial body weight) and maintain this over the long term. This degree of weight loss reduces the health risks associated with obesity as well as improving a patient's general well-being and self-esteem.

Occasionally, surgery is considered necessary to achieve weight loss.

⁶ Tremblay, A. *et al*, Effect of a three-day interruption of exercise training on resting metabolic rate and glucose-induced thermogenesis in trained individuals. *Int. J. Obesity* 1988; **12**:163 - 8.

⁷ *Clinical Management of Overweight and Obese Patients*, a report of The Royal College of Physicians of London, December 1998.