



Medicine for Managers

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The Obesity Battle

Obesity and overweight is a complex global public health concern, associated with reduced life expectancy and a significant component of many chronic diseases, most notably heart disease, lung diseases, diabetes, liver disease and cancer. It can also have an impact on mental health. Universal advice concerns exercise, an appropriate diet and exercise, but now there are other options.

The statistics for obesity are hugely concerning. In the year 2022-23 in England, 64% of the +18 population were believed to be overweight or obese and the trend has been upwards since 2015-16 when the figure was reported as 61.2%.

Nearly seven out of ten men were overweight compared with nearly six out of ten women. However, the rate of obesity was about equal in men and women at just over 26% in 2022-23, up from about 15% in 1993 and 22.6% in 2015-16.

Overweight and obesity increases with age, reaching its peak in the 55-64 year group but decreases in the group over age 65.

In **children aged 4-5**, staggeringly 1% are already obese and 12% are overweight. By **age 10-11**, over 23% are obese and 14% are overweight. This is clearly appalling and stores up huge problems for later years.

Reading such data perhaps does not have the impact it should. **Two-thirds** of men and **three-fifths** of women are overweight and over a **quarter** of the population is obese.

Obesity reduces life expectancy by between three and ten years depending on the amount by which the person is overweight.

The fast food industry bears a heavy responsibility for contributing to obesity in the UK.

Over two billion meals from fast food outlets are consumed every year. It is perhaps because of this that children's overweight and obesity problems are more marked in deprived parts of England.

Amongst 4-5 year olds, in 2021-22, obesity affected 6% of children in least deprived areas compared with 13½% in the most deprived areas.

By the age of 11, 13½% of children in least deprived areas were obese compared to 31½% in the most deprived areas.

Variation in degree of deprivation therefore resulted in a two-fold variation in obesity.

By way of reminder, body weight is most commonly classified by use of the **Body Mass**

Index (BMI) classification. For most adults the BMI is as follows:

- 18.5 – 25 – healthy weight
- 25-30 – overweight
- 30-40 – obese
- 40+ - severely or morbidly obese

To calculate the BMI, it is usual to measure the **weight in kilograms** and the **height in centimetres**.

The **BMI** figure is then reported in kg/m^2 (**the weight [kg] divided by the square of the height [m²].**)

The BMI is simple and useful but it does have shortcomings. The figures used are arbitrary and there is blurring round the edges of each category.

Obesity is the presence of excessive fat tissue acquired as a result of chronic over-nutrition.

However, other physical characteristics can confound the BMI such as being **overmuscularised** (as for example in people who train continuously in the gym) or conversely those who suffer from **sarcopenia** (lack of body muscle such as occurs in, for example, the elderly).

The significance of obesity is in the range and severity of adverse outcomes for which excessive or abnormal accumulations of fat are responsible.

The fundamental cause of overweight and obesity is the imbalance between the calories consumed and the calories burned through exercise

Exacerbating causes, apart from fast foods, include high energy drinks, decreased physical activity due to increasingly sedentary work, greater use of transport and increased urbanisation.

There are some health conditions that may occasionally also contribute to obesity such as hypothyroidism (the presence of an under-active thyroid gland) which results in a slowing of the body's metabolic rate with reduced utilisation of stored carbohydrate and weight gain. Hypothyroidism is effectively controlled with thyroxine replacement.

The location of the fat is also important. Fat around the abdomen (**viscerally located**) provides a greater risk than fat located on the buttocks and thighs.

Obesity is associated with a number of diseases and disorders including:

- Diabetes mellitus (type II)
- Heart disease

- Stroke
- Osteoarthritis
- Raised blood pressure
- Raised cholesterol and atherosclerosis
- Gallstones
- Some types of cancer
- Sleep apnoea
- Infertility

In addition low self-esteem associated with appearance and possible incapacity may result in depression.

None of this is in any way surprising. If the body is confronted with an overload of carbohydrate, there is additional demand on the pancreas to



produce insulin, increased workload on the heart, increased level of blood cholesterol and the weight-bearing joints have to carry more weight.

Clearly, if the current trajectory of overweight and obesity continues, the ability of the Health Service to manage or combat it will be outstripped.

A lot of the options for controlling weight are in the hands of the individual. Nobody would dispute that losing weight can be extremely difficult. But then, being chronically sick can be pretty difficult too!

Most people know in their heart of hearts what to do to lose weight. However to do so is demanding, often disheartening when a week's purgatory seems to achieve very little, and when people around you can eat all the things you crave without apparently increasing their weight.

However, a plan for losing weight does work.

1. **Start by measuring your height and weight and calculating your BMI.**
2. **Have a plan** for losing weight. Don't go mad and starve yourself. Look for a sensible diet and, if it works for you, stick with it. If it doesn't try something else
3. Many benefit from joining a weight loss group such as *Weightwatchers* or *Slimming World*. The NHS also provides exercise weight loss programmes. Alternatively, share your plans with someone you trust, for support on bad days.

4. **Exercise.** Anything is good. The data shows that about two thirds of adults are physically active and women are less physically active than men (65% compared to 70%). Physical activity, perhaps unsurprisingly, declines with age, dropping from up to three-quarters of adults between 19 and 24 to less than 30% of people in their eighties. Sixty % of adults in most deprived areas are active whereas 75% of adults in the least deprived areas are. Physical activity is highest in white British adults and lowest in black and Asian ethnic groups.

Individuals should get at least 150 minutes of moderate aerobic exercise (brisk walking, swimming, bicycling or even mowing the lawn) or at least 75 minutes of vigorous aerobic exercise (running, swimming laps, heavy manual work, such as digging the garden, and aerobic dancing). Other activities include weight lifting, speed rowing or rock climbing. My German Shepherd is a pretty good source of exercise too!! It is worth trying to sit down less during the day.

If it is difficult to find time for sustained exercise, the equivalent can be obtained by more frequent shorter bursts of exercise.

5. **East five portions of fruit and vegetables a day.** Women are better at achieving this than men ($\frac{1}{3}$ of women compared to $\frac{1}{4}$ of men). 80 gm of fresh, frozen or canned vegetables or fruit count as one of the five.
6. Try not to overeat. Smaller portions of appropriate foods form an essential component of weight loss.
7. **Don't**
 - a. Hurl yourself headlong into a starvation diet. It doesn't work and

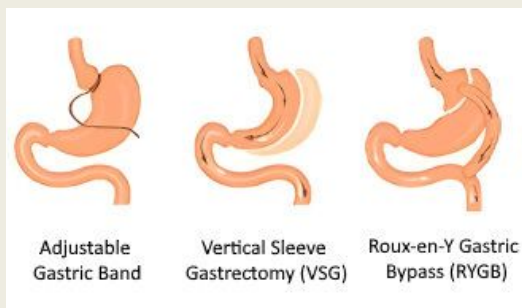
- you feel miserable and hungry all the time.
- Buy healthy alternatives
 - Don't buy high sugar or fat foods.
 - Don't drink sugary drinks. They contain an awful lot of sugar.
 - Don't overeat. If you feel full, don't finish everything on the plate.

In today's environment losing weight feels a huge challenge because we are surrounded by nice restaurants, cheap high calorie foods, seductive advertising and even television programmes



For many the challenge is overwhelming and weight loss sounds better in the concept than in the execution. Certainly the challenge is considerable and it is necessary to burn 7,500 calories more than are consumed in order to lose one kilogram of weight.

For patients with morbid obesity, with a BMI in excess of 40, **bariatric surgery** can offer a solution. In essence the surgery reduces the total capacity of the stomach so that it feels fuller and less food is consumed.



The most common forms of bariatric surgery are fitting a gastric band, carrying out a sleeve gastrectomy (where the stomach capacity is reduced) or creating a bypass (illustrated). The surgery is available privately and may also be obtained as an NHS patient. Units providing the surgery will require patients to show that they have tried to lose weight through a healthy diet, adopting regular exercise procedures and using medication. They will also be required to agree to lifestyle changes, agree to modify diet and to undergo regular checks-up after the surgery.

The surgery is not without hazard but the results are often excellent. Normally 2-3 days in hospital is required and recovery time is usually four to six weeks. However success with surgery is not invariable and it is an expensive procedure.

Medication

Apart from dietary and exercise help, GPs can assist with dietary control by the prescription of appetite suppressant **orlistat** but its use should be monitored to ensure compliance and success and there is guidance recommending targets to be achieved if the drugs are employed, involving a 5% reduction in weight over a three month period.

There is now a class of type 2 diabetes drugs that is not only effective in improving blood sugar control but which also have an indication to achieve weight loss. These drugs are called **GLP-1 agonists (glucagon-like peptide 1)**.

GLP-1 itself is a **hormone** manufactured in the small intestine. It acts in several different ways:

- Stimulating the pancreas to release **insulin**, which controls blood sugar metabolism and lowers blood sugar.
- It blocks the action of **glucagon** which is a **hormone** which raises blood sugar. GLP-1 prevents the blood sugar rising.

- It slows stomach emptying so that less glucose from food enters the blood.
- GLP-1 affects those areas of the brain associated with feeling full reducing appetite.

GLP-1 agonists mimic the hormone and act like the naturally occurring substance. Effectiveness is related to the dose administered and it successfully achieves weight loss.

GLP-1 agonists are usually administered by subcutaneous injection. A number are available and are generally administered weekly, including:

- Semaglutide (Wegovy)
- Tirzepatide (Mounjaro)

Interestingly, there is some evidence that use of the drug may lower the risk of heart disease, stroke and kidney disease and reduce blood pressure and cholesterol. It is not yet clear whether this is the result of the drug or of the weight loss, or both.

Side effects do occur but are generally gastrointestinal and include nausea, vomiting and diarrhoea. It is also suggested that, when withdrawn, patients may suffer rebound effects with weight gain.

The use of such drugs must be with medical supervision.

Overweight and obesity are becoming a steadily increasing cause of chronic illness and death which, if not effectively managed, may be responsible for development of a desperately serious health emergency.

To some, generally those who have no weight problem, the solution is simple. *“To lose weight consume fewer calories than you burn”*

Many people have commented on obesity and provide interesting observations.

“Losing weight is hard, maintaining weight is hard, staying overweight is hard. Choose your hard”

Anonymous quote

“Because of the increasing rates of obesity, unhealthy eating habits and physical inactivity, we may see the first generation that will be less healthy and have a shorter life expectancy than their parents”

Richard Carimona

“There is an obesity epidemic. Now one out of every three Americans weighs as much as the other two”.

Richard Jeni

“Childhood obesity isn’t a simple discrete issue. There is no one cause we can pinpoint. There is no one programme we can fund to make it go away. Rather it is an issue that touches every aspect of how we live and how we work”.



Michelle Obama

I leave you with the weight related unitary mnemonic, fifty-two, ten

5. Enjoy five or more vegetables and fruits every day
2. Limit screen time to no more than two hours a day
1. Play actively for at least one hour a day
0. Drink zero sugary drinks

Unchecked, the obesity epidemic could be the single medical problem that brings the NHS to its knees.

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