



ENERGY IN VS ENERGY OUT

A 2006 survey by the Australian Bureau of Statistics revealed that 53 per cent of adults in the country believe themselves to be overweight or obese, compared to 44 per cent just a decade ago. In this time period the proportion of women with weight problems has risen to 45 per cent, and men to 62 per cent.

The Institute of Health Economics and Technology Assessment says that obesity and overweight levels may be even higher than people admit to, putting the figure somewhere nearer to 60 per cent, and estimates that this costs the Australian economy a massive \$11 billion in, among other things, health costs and productivity losses.

Despite all the new diet books filling the shelves offering a new solution to weight loss, the simple truth is that the fundamental cause of overweight and obesity is 'energy imbalance'. A gain in weight will not happen without periods of increased energy intake and/or decreased physical activity, no matter what genes you have been given. The many factors influencing this energy imbalance include behavioural, psychological, social and environmental. Small, virtually unnoticeable changes in lifestyle can result in significant weight gain. An extra 200 to 250 kilojoules a day in excess of requirements may result in a 2.4kg increase in weight by the end of the year. So how do you know when you are truly overweight? In adults, body mass index (BMI) is frequently used as a measure of overweight and obesity.

You can also calculate your BMI by dividing your weight in kilograms by your height (squared) in metres; eg, 62kg divided by 1.72m² (2.96) = 20.9kg/m². A BMI between 18.5kg/m² and 25kg/m² is considered to be within normal range, whereas between 25kg/m² and 30kg/m² is classified as overweight and 30kg/m² and over as obese. Further classifications, linked with morbidity (disease), can be seen in the following table:

These cut-offs are based on epidemiological evidence of the link between mortality and BMI in adults. Although BMI measurements are

a useful benchmark, they are not accurate when applied to athletes or sportspeople, as muscle mass and hence bodyweight – and therefore BMI – may be higher but without the associated health risks.

What can you do if you have done the calculations and found yourself to be in the overweight categories? Some simple maths will provide the answer. To lose half a kilogram of fat you require an energy deficit of around 14,500kj. Therefore, to lose between half and one kilogram per week requires an energy deficit of between 2,000kj and 4,000kj per day. This is most easily achieved by reducing your energy intake and increasing your energy expenditure by exercising regularly.

HOW TO CREATE THAT DAILY 2,000KJ DEFICIT

The table below shows how relatively small changes in your dietary habits can make a big difference to your energy intake. Throw some moderate to high intensity regular exercise into the mix and you will be well on your way to your weight loss target.

Action	kj saved or expended
Swap a sugary drink for a diet drink	586 (140kcal)
Have a pint of skimmed milk each day instead of full-fat milk	836 (200kcal)
Cut out those two chocolate biscuits at break time	710 (170kcal) Total saving = 2,130 (510kcal)
Use three tablespoons of balsamic vinegar (250kj/60kcal) on your salad instead of three tablespoons olive oil (1,600kj/381kcal)	1,300 (321kcal)
Don't have butter on your sandwich (10g)	300 (72kcal)
Don't have mayonnaise in your sandwich (two tspns = 22g)	660 (158kcal) Total saving = 2,300 (551kcal)
Do a 60-minute aerobic class	1,670-2,000 (400-500kcal) expended
Walk briskly for 60 minutes	1,000 (250kcal) expended
Have a piece of fruit instead of a chocolate bar	1,000 (250kcal) saved Total deficit = 2,000 (500kcal)

CLASSIFICATIONS OF OBESITY

Classification	BMI (kg/m ²)	Risk of co-morbidities (developing other diseases)
Underweight	<18.5	Low*
Healthy weight	18.5-24.9	Average
Overweight (or pre-obese)	25-29.9	Increased
Obesity class I	30-34.9	Moderate
Obesity class II	35-39.9	Severe
Obesity class III	≥40-	Very severe

*Other health risks may be associated with low body mass index.

Wendy Martinson

Wendy is an Accredited Sports Dietitian, Registered Dietitian with the Health Professions Council and qualified group exercise and BTS instructor. She is currently the Sports Nutrition Consultant for the British Olympic Association, British Gymnastics and the English National Ballet School. She also works as a consultant sports dietitian for the Lucozade Sports Science Academy. For more information on the LSSA please e-mail chrd_Issa@gsk.com