

Discussion – Obesity

Question: Is being fat bad for you?

If we accept that being overweight is associated with many diseases such as heart disease and diabetes, can we say that obesity is the cause of these diseases?

Aim

To think about the dangers of interpreting scientific data. An association between two factors does not necessarily mean cause and effect. You must always look at the evidence linking the two and take into account as many other factors as you can think of. The points below are to aid discussion of the issue and get the students to think about how to test each one. There are no definitive answers to this question yet!

Discussion points

- Could it be that it is what obese people actually eat that is causing their health problems? High-fat foods usually also contain lots of preservatives, colourings and other chemicals which are acknowledged to be bad for us. How could you test whether this was true?
- Does the lack of exercise and poor physical fitness contribute more to ill health than obesity itself? How could you test this?
- What about alcohol? This contains lots of calories so could contribute to making people fat, but it could be the alcohol itself that is making people unwell.
- What about factors such as smoking? Is smoking more common in overweight people? If so, this may be a reason why ill health is linked to obesity.
- Stress! People often comfort-eat when they are stressed, which could cause obesity. You could test stress levels in overweight and non-overweight people and see if overweight people were more stressed. If this was the case, stress may be the link to ill health, not obesity.
- Genetic differences account for 50 to 80 % of the variation in fatness within a population, so could these genetic differences be linked to illness?
- Does it matter how old you are if you are overweight? For example, does it have more affect on your health if you are overweight before the age of 30 than if you have previously been slim but become overweight over the age of 60?
- Are all the above factors independent? For example, if you are stressed you may be more likely to smoke and drink, and you may also do less exercise as you feel you don't have time. You may be more prone to stress due to genetic factors.

Reference: Scientific American, June 2005, p48-55

The discussion was devised by Rebecca Hamer of the **Wellcome Trust Centre for Human Genetics**, at the University of Oxford.