

# AQA GCSE Biology (Higher) For the Summer 2022 Exams

## Flashcard Notes - 2.2.6 The effect of lifestyle on some non-communicable diseases

Copy the questions and answers below onto flashcards and use them to test yourself.

### What are risk factors?

Risk factors for a particular disease are things which are associated with having a higher chance of getting that disease. In other words, there is a higher rate of the disease among people who have the risk factor than among people who don't have the risk factor.

### What types of things can be risk factors?

Different diseases have different risk factors, however risk factors often include one or more of the following:

- Aspects of a person's lifestyle, such as diet, exercise, smoking and alcohol consumption.
- Substances in a person's body or environment, such as pollutants in the air or drinking water, or ionising radiation.
- A person having particular DNA sequences, for example a particular allele of a gene.
- A person's age.

### What is correlation?

Correlation is when two variables change together. It could be that when one increases the other one increases - this is called a positive correlation. Or it could be that when one increases the other one decreases - this is called a negative correlation.

### How can correlation be shown?

A correlation between two variables can be shown by plotting the two variables on a scatter diagram. If a straight line of best fit can be drawn with all of the data points lying close to it, then there is a correlation. If the line slopes upwards as it goes to the right, it is a positive correlation. If the line slopes downwards as it goes to the right, it is a negative correlation.

A correlation can also be shown using statistical methods.

### What is causation?

Causation is when one thing causes another thing to happen.

### Why does correlation not imply causation?

If there is a correlation between variables A and B, it may be tempting to assume that A must affect B - in other words, that changes in A cause changes in B. However, the existence of a

correlation between A and B does not prove this. This is because there are other possible explanations for the correlation. These are:

- B could affect A.
- A and B could both be affected by some other variable, C, that we have not looked at.
- The correlation between A and B could simply be a coincidence.

### **How are correlation and causation related to risk factors for diseases?**

A factor is considered to be a risk factor for a particular disease if there is a correlation between having that factor and getting the disease. For example, if it is shown that rates of getting the disease are higher among people who eat a certain food than among people who don't, then eating that food is a risk factor for the disease.

However, correlation does not imply causation. Therefore, knowing that something is a risk factor doesn't necessarily mean that it causes the disease. Some risk factors have been shown to cause the disease, others have not - we simply know that they are correlated with the disease.

### **Name three risk factors for cardiovascular disease.**

Poor diet, smoking, and lack of exercise are all risk factors for cardiovascular disease.

### **Name one risk factor for type 2 diabetes.**

Obesity is a risk factor for type 2 diabetes.

### **Name one risk factor for lung diseases such as lung cancer.**

Smoking is a risk factor for lung diseases such as lung cancer.

### **Name one risk factor for liver disease and brain disease.**

High alcohol consumption is a risk factor for liver disease and brain disease.

### **Name one risk factor for cancer.**

Exposure to carcinogens, such as ionising radiation, is a risk factor for cancer.

### **Name two risk factors for diseases in newborn babies.**

Smoking while pregnant and drinking alcohol while pregnant are both risk factors for diseases in the newborn baby.

### **Why can it be difficult for scientists to find out what causes non-communicable diseases?**

It can be difficult for scientists to find out what causes non-communicable diseases because they are often caused by the interaction between a number of different factors.