OCR (B) Biology GCSE

Topic B2.5: How can lifestyle, genes and the environment affect health?

Flashcards

What is a risk factor?

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A variable associated with a greater chance of developing a disease or infection

Outline the factors that can affect the risk of developing a non-communicable disease

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- **Lifestyle** factors e.g. diet, exercise, alcohol, smoking
- **Environmental** factors e.g. exposure to pollution
- **Genetics** e.g. alleles that increase the risk of cancer

"Correlation does not mean causation."
Explain this statement.

"Correlation does not mean causation." Explain this statement.

Correlation between a risk factor and a disease does not mean that the risk factor causes the disease. Other factors may be involved and some may be linked.

Describe how exercise affects the risk of some non-communicable diseases

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- Regular exercise decreases fat stores, reducing obesity (a risk factor of **CVD** and **type 2 diabetes**)
- It decreases heart rate, recovery time and blood pressure, lowering the risk of **CVD**

Describe how diet affects the risk of some non-communicable diseases

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- Diet high in saturated fat raises blood cholesterol levels, increasing the deposition of fatty deposits in the arteries ∴ greater risk of **CVD**
- Obesity and the consumption of large amounts of simple-sugars increases the risk of **type 2 diabetes**
- Malnourishment increases the risk of **deficiency diseases**

Give an example of a deficiency disease

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- Scurvy (vitamin C deficiency)
- Anaemia (iron deficiency)

Describe how alcohol affects the risk of some non-communicable diseases

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- Alcohol broken down into toxic products in the liver which build-up and cause **cirrhosis** (scarring of liver tissue)
- Alcohol raises blood pressure therefore increasing the risk of **CVD**
- Toxic products in alcohol can cause mutations to DNA, increasing the risk of **cancer** (mouth, throat, liver etc.)

Describe how smoking affects the risk of some non-communicable diseases

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- Nicotine raises heart rate, increasing the risk of **CVD**
- Carbon monoxide lowers the ability of red blood cells to carry oxygen, heart rate increases, increasing the risk of **CVD**
- Carcinogens in tar can cause mutations to DNA, increasing the risk of **cancer** (mouth, throat, lung etc.)
- Smoking increases the risk of lung diseases e.g. **chronic bronchitis**

How do environmental factors affect the risk of some non-communicable diseases?

How do environmental factors affect the risk of some non-communicable diseases?

- Long-term exposure to pollution damages the airways, increasing the risk of **lung diseases** and **lung cancer**
- Exposure to UV radiation damages DNA, increasing the risk of DNA mutations and **skin cancer**

How do genetics affect the risk of some non-communicable diseases?

How do genetics affect the risk of some non-communicable diseases?

The risks of some diseases such as **type 2 diabetes**, **lung cancer** and **CVD** are increased if a family member has had these conditions.

Faulty genes can be inherited which increase the risk of conditions such as **breast cancer**.

How do diseases interact with each other?

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- Some diseases may cause other infections to develop e.g. HIV weakens the immune system, making an individual more susceptible to other infections such as TB.
- Some diseases reduce the risk of contracting other infections e.g. Trichinosis reduces the development of Crohn's disease.