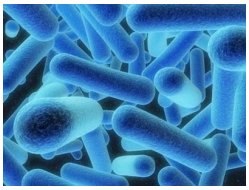
Biology Top-Up
Disease & Immunity

Causes of disease



Diseases are not just caused by one thing. Pathogens are organisms that cause disease - an infectious disease is one which can be passed from person to person. Examples of pathogens that cause infectious diseases are tuberculosis (bacterium) and HIV (virus).

Mutations in a person's genetic code can be passed on to their offspring. Cystic fibrosis is an example of a genetic disorder (sometimes called hereditary diseases).

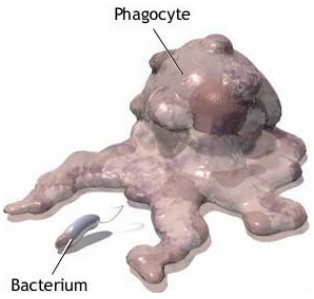
The third thing that can cause disease is lifestyle. The choices made by a person can influence the kind of disorders that they are susceptible to.

Risk factors

These are things that increase the chances of a particular disease developing. It is important to note that the risk factors don't always lead to the disease. Unavoidable risk factors are things like the genes that are inherited. Avoidable risk factors are those where lifestyle choices can make a difference.

Risk factor	Examples of diseases
Smoking	Lung disease, cancers of the respiratory system, CVD
Alcohol	Mouth, stomach, liver & breast cancer, CVD
High blood pressure	CVD, diabetes
Obesity	Various cancers, CVD, diabetes
Unbalanced diet	Various cancers, CVD, diabetes
Sun bed overuse	Skin cancer

Immunity



1. *Phagocytes*

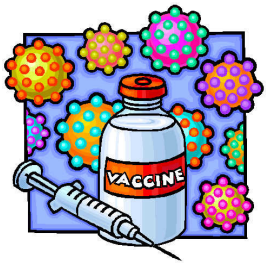
   These are a type of white blood cell that detect the antigens on the surface of cells and viruses. They engulf and digest 'foreign' bodies, but leave 'self' (your own) alone.

2. *B-lymphocytes*

   Another type of WBC, but these produce antibodies that bind to and destroy pathogens.

3. *T-lymphocytes*

   A third type of WBC. These are the memory of the immune system - phagocytes present pathogens to the T-cells, and they activate the correct B-cells.



4. *Vaccination*

Vaccines contain dead or attenuated (weakened) pathogens. This causes the same immune response as a full blown infection, so if the same pathogen is encountered again it can be fought off quickly.