

Health and disease

Give the WHO definition of health.

Health and disease

What three types of well-being does the WHO definition of health include?

Health and disease

What is a communicable disease?

Health and disease

What is a non-communicable disease?

Health and disease

How does HIV make a person more likely to get other diseases?

Health and disease

Give one other way a disease can make another disease more likely.

Health and disease

What does a correlation on a scatter diagram show, and what does it not prove?

Pathogens and infections

What is a pathogen?

Physical, mental and social.

A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

A disease that cannot be passed from one person to another and is not caused by a pathogen. Example: cardiovascular disease.

A disease caused by a pathogen that can be passed from one organism to another.

Damaged skin or airway lining lets pathogens in; or long-term physical illness can lead to poor mental health.

It destroys white blood cells, so the immune system is weakened and cannot fight other pathogens, such as the TB bacterium.

A disease-causing organism.

It shows that two variables change together. It does not prove that one causes the other.

Pathogens and infections

Name the four types of pathogen.

Pathogens and infections

Cholera: pathogen type and effect?

Pathogens and infections

Tuberculosis: pathogen type and effect?

Pathogens and infections

Chalara ash dieback: pathogen type and effect?

Pathogens and infections

Malaria: pathogen type and effect?

Pathogens and infections

HIV: pathogen type and effect?

Pathogens and infections

How is cholera spread and how can this be reduced?

Pathogens and infections

How is tuberculosis spread and how can this be reduced?

Bacterium; causes diarrhoea.

Viruses, bacteria, fungi and protists.

Fungus; causes leaf loss and bark lesions in ash trees.

Bacterium; causes lung damage.

Virus; destroys white blood cells, leading to the onset of AIDS.

Protist; causes damage to the blood and liver.

Airborne, in droplets from coughs and sneezes. Reduce by isolating infected people and covering the mouth when coughing.

In contaminated water. Reduce by clean drinking water and sewage treatment.

Pathogens and infections

How is Chalara ash dieback spread and how can this be reduced?

Pathogens and infections

What is a vector? Name the vector for malaria.

Pathogens and infections

How is chlamydia spread and how can this be reduced?

Pathogens and infections

How is HIV spread and how can this be reduced?

Human defences and immunity

How do mucus and cilia protect the airways?

Human defences and immunity

How does the skin protect against pathogens?

Human defences and immunity

What are lysozymes?

Human defences and immunity

What does hydrochloric acid in the stomach do?

An organism that carries a pathogen from one host to another. The mosquito is the malaria vector.

Airborne spores. Reduce by destroying infected trees and restricting movement or import of ash plants.

Sexual contact, sharing needles, infected blood, mother to baby. Use condoms, do not share needles, screen blood.

Unprotected sexual contact. Use condoms, screen and test, and treat with antibiotics.

It is a physical barrier that pathogens cannot easily pass through.

Mucus traps pathogens; cilia move the mucus away from the lungs.

It kills pathogens that are swallowed. A chemical defence.

Enzymes that break down bacterial cell walls. A chemical defence.

Human defences and immunity

What is an antigen?

Human defences and immunity

What are antibodies?

Human defences and immunity

What are memory lymphocytes?

Human defences and immunity

Describe the secondary immune response.

Human defences and immunity

How does immunisation protect against a disease?

Human defences and immunity

Why does an inactive pathogen in a vaccine not make you ill?

Antibiotics, culturing microorganisms and new medicines

Why can antibiotics only treat bacterial infections?

Antibiotics, culturing microorganisms and new medicines

Name the stages in developing a new medicine in order.

Proteins made by white blood cells that bind to specific antigens and help to destroy the pathogen.

A molecule, usually on the surface of a pathogen, that triggers an immune response.

Memory lymphocytes recognise the antigen. The response is faster and produces more antibodies.

White blood cells made after exposure to an antigen that stay in the body and respond quickly if the antigen returns.

It is dead or weakened, so it cannot cause the disease, but its antigens still trigger an immune response.

An inactive pathogen triggers antibody and memory lymphocyte production, so a later infection gets a fast secondary response.

Discovery, development, preclinical testing, clinical testing.

They inhibit cell processes in the bacterium but not in the host. Viruses live inside host cells.

Antibiotics, culturing microorganisms and new medicines

What happens in preclinical and clinical testing?

Non-communicable diseases

What causes many non-communicable diseases?

Non-communicable diseases

What is the BMI equation?

Non-communicable diseases

What does a high waist : hip ratio show?

Non-communicable diseases

How do you calculate waist : hip ratio?

Non-communicable diseases

What are obesity and malnutrition?

Non-communicable diseases

How does drinking too much alcohol affect health?

Non-communicable diseases

How does smoking affect cardiovascular health?

The interaction of a number of factors, such as lifestyle, environmental and inherited factors.

Preclinical: tested on cells, tissues and live animals. Clinical: tested on people, first for safety and then for effectiveness.

More fat stored around the waist, linked to a higher risk of cardiovascular disease.

$$\text{BMI} = \text{mass (kg)} \div \text{height (m)}^2$$

Obesity is having too much body fat.
Malnutrition is a diet without the right balance of nutrients.

Waist circumference $\div$ hip circumference, both in the same unit. The ratio has no units.

It damages artery linings, leading to fatty build-up and narrowing, and raises heart rate and blood pressure.

It damages the liver, causing liver disease such as cirrhosis.

Non-communicable diseases

What are the three levels at which lifestyle effects are considered?

Non-communicable diseases

Name three types of treatment for cardiovascular disease.

Non-communicable diseases

Give a disadvantage of each treatment for cardiovascular disease.

Life-long medication, surgical procedures
and lifestyle changes.

Local, national and global.

Medication: taken for life with side effects.
Surgery: risks and recovery. Lifestyle
changes: slow and need effort.