

Pathogens and transmission Define pathogen.	Pathogens and transmission Define transmissible disease.
Pathogens and transmission Name the direct route of transmission.	Pathogens and transmission Name four indirect routes of transmission.
Pathogens and transmission How do hairs in the nose and mucus protect the body?	Pathogens and transmission What do stomach acid and the skin do?
Pathogens and transmission Name the body defences in the syllabus.	Pathogens and transmission List the five measures that control the spread of disease.

A disease in which the pathogen can be passed from one host to another.

A disease-causing organism.

Contaminated surfaces, food, animals and air.

Direct contact, including through blood and other body fluids.

Stomach acid kills pathogens that are swallowed. Skin is a barrier that stops pathogens entering.

They trap pathogens in the air that is breathed in.

Clean water supply, hygienic food preparation, good personal hygiene, waste disposal and sewage treatment.

Skin, hairs in the nose, mucus, stomach acid and white blood cells.

Pathogens and transmission

Why is sewage treated?

Pathogens and transmission **Supplement**

How is cholera transmitted?

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What does the cholera toxin cause in the small intestine?

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Why does cholera cause diarrhoea and dehydration?

Immunity **Supplement**

What is an antigen?

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What is an antibody?

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Why is each antibody specific?

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Define active immunity.

In contaminated water. It is caused by a bacterium.

Sewage contains pathogens; treating it stops it contaminating drinking water.

Chloride ions in the gut make water move in from the blood by osmosis, so water and ions are lost.

Secretion of chloride ions into the small intestine.

A protein that binds to an antigen, leading to direct destruction of the pathogen or marking it for destruction by phagocytes.

A molecule on a pathogen. Each pathogen has its own antigens with specific shapes.

Defence against a pathogen by antibody production in the body.

Its shape is complementary to one antigen, so it only fits that antigen.

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How is active immunity gained?

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Outline vaccination.

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What do memory cells do?

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How does vaccination control the spread of disease?

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Define passive immunity.

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How do antibodies pass to a baby?

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Why is breast-feeding important for infants?

Immunity **Supplement**

Why is passive immunity only short-term?

Weakened pathogens or antigens are put in; lymphocytes make antibodies; memory cells give long-term immunity.

After an infection by a pathogen, or by vaccination.

Fewer people can be infected, so the pathogen is passed on less often.

They give long-term immunity by responding quickly if the same pathogen enters again.

Across the placenta and in breast milk.

Short-term defence against a pathogen by antibodies acquired from another individual.

Memory cells are not produced.

Milk contains antibodies, giving the baby passive immunity while its own immune system develops.