

Curriculum Links for: ABPI Human Immune System

Key Stage 4 (Age 14-16)

Science

National Curriculum	Life Processes and Living Things Humans as organisms <i>Health</i>	2.22	the defence mechanisms of the body, including the role of the skin, blood and mucous membranes of the respiratory tract
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GCSE Specifications

WJEC	Biology 3	B3 5a 5b 5c 5d 5f 5g 5h	<ul style="list-style-type: none"> • Know that some microorganisms, called pathogens, cause diseases and intact skin forms a barrier against them. The body also defends itself by: blood clots to seal wounds; white cells in the blood infest microbes, produce antibodies and antitoxins • Understand that immunisation can be used to protect humans from infectious disease although it raises dilemmas for individuals and for society... • Know that an antigen is a protein, foreign to an individual that triggers a response by some white blood cells which secrete antibodies specific to the antigen that is present. Antibodies destroy the cells bearing the antigen • Assess data showing how, after an antigen has been encountered, memory cells remain in the body and antibodies are produced very quickly if the same antigen is encountered a second time. This memory provides immunity following a natural infection and after vaccination. The response is highly specific to the antigen involved
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			<ul style="list-style-type: none"> • Understand the effect of penicillin on bacteria growing on agar plates. Antibiotics, including penicillin, are medicines produced by living organisms which help to cure bacterial disease by killing the infecting bacteria • Know that antibiotics may kill some bacteria such as MRSA can result from the over use of antibiotics. Discuss the issues surrounding increasing bacterial resistance to antibiotics
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Applied Science

GCSE Specifications			
WJEC	Applied Science (Double)	Unit 2 (a) 24	Science and Society <i>The human body and health</i>
		25	<ul style="list-style-type: none"> • Understand about the use of immunisation to protect humans and other animals from infection by specific micro-organisms • Know that antibiotics may kill some bacteria, but not viruses and understand that resistant bacteria such as MRSA can result from the over-use of antibiotics

This web resource contains information on:

- **Pathogens and disease** – bacteria, fungi, viruses and protozoa
- **Barriers to infection** including the skin
- **Acquired immunity** including white blood cells, lymphocytes and primary response to infection
- **Immunisation** – vaccination and tetanus vaccination
- **Medicines and the immune system** – vaccination and immune memory
- **Vaccinations in the UK** – what and when; MMR triple vaccine
- **Antibiotics** – Fleming and penicillin; antibiotic resistance

- **Problems caused by the immune system** – asthma and allergic reactions; organ transplants and rejection
- **HIV/AIDS** – the virus; prevention