

Definitions and Concepts for WJEC (Wales) Biology GCSE

Topic 2.8: Disease, Defence and Treatment

*Definitions in **bold** are for higher tier only*

Definitions marked by '' are for separate sciences only*

Acquired immunodeficiency syndrome (AIDS) - The later stage of HIV infection in which prolonged attack by the HIV virus results in a weakened immune system that is susceptible to other infections.

Antibiotic - A type of medication that helps cure bacterial disease by killing infective bacteria inside the body e.g. penicillin.

Antibiotic resistance - The ability of a bacteria to become resistant to the treatment that is being used to kill it, i.e. antibiotics. This provides evidence for evolution.

Antibody - A protein produced by the immune system which attacks specific antigens.

Antigen - **A protein found on the surface of the pathogen that induces an immune response.**

Antitoxins - A type of antibody produced by white blood cells to neutralise toxins.

Bacteria - A type of pathogen which is single-celled and prokaryotic (note: not all bacteria are pathogenic).

Cancer - A result of changes in cells that lead to uncontrolled growth and division †

Causative agent - A chemical or organism which causes disease.

Chemotherapy - A type of cancer treatment which uses drugs to disrupt stages of the cell cycle and prevent uncontrolled mitosis. **Monoclonal antibodies may be used to support chemotherapy.**

Chlamydia - A sexually transmitted bacterial infection which can affect the reproductive system if left untreated.

Clinical testing - Testing which is done on groups of patients with the disease.

Communicable disease - A disease that is caused by a pathogen which can be spread between individuals. It is not inherited or caused by environmental factors.

Disease - An illness that affects animal or plant health.

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Eukaryotic cell - A type of cell found in plants and animals that has a nucleus and other membrane-bound organelles.

Fungi - A type of pathogen which is eukaryotic and can be single-celled or multicellular, e.g. yeast and mushrooms.

Human immunodeficiency virus (HIV) - A communicable disease caused by a virus that is transmitted through bodily fluids. HIV may be spread via unprotected sex and the sharing of needles.

Immune system - The body's defence mechanism against foreign bodies.

Lymphocyte - A type of white blood cell made by the body to protect against disease and infection. Lymphocytes produce antibodies and antitoxins.

Malaria - A disease caused by a protist spread by mosquitoes. It causes recurring fever which can be fatal.

Methicillin-resistant Staphylococcus aureus (MRSA) - A communicable disease caused because of resistant bacteria due to the overuse of antibiotics.

Memory cell - A type of white blood cell that rapidly divides and produces antibodies if the body comes into contact with the pathogen a second time.

Monoclonal antibodies - Identical antibodies produced from activated lymphocytes. They are specific to one binding site on one protein antigen.

Non-communicable disease - A disease that cannot be transmitted as it is caused by environmental factors or is inherited. It is not pathogenic.

Non-specific defence system - The defence system that protects against a variety of pathogens.

Pathogen - A bacteria, virus or any other microorganism that can cause disease.

Phagocyte - A type of white blood cell which engulfs and digests foreign bodies.

Preclinical testing - Testing on human cells grown in the laboratory, then on animals and finally a group of healthy volunteers. †

Protist - A type of pathogen which is eukaryotic and single-celled. It is from the kingdom Protista.

Skin - A non-specific defence which acts as a barrier for entry of harmful microorganisms into the body.

Specific defence systems - A type of defence system of the body which attacks specific pathogens.

Tissue typing - When the antigens of the donor's organ/tissue are matched to the antigens of the recipient's organ/tissue in order to get the best suited donor for a transplant. This



