

## Definitions and Concepts for CAIE Biology IGCSE

### Topic 10: Diseases and Immunity

---

*Definitions in **bold** are for supplement only*

**Active immunity** - Resistance in an organism that has developed through the production of specific antibodies in response to a pathogen. This may occur due to infection by a pathogen or by vaccination. It provides long-lasting immunity as memory cells are produced.

**Antibodies** - Proteins produced by white blood cells (**lymphocytes**) in response to a specific antigen, triggering an immune response. **Antibodies have binding sites complementary to a particular antigen.**

**Antigen** - A unique chemical present on the surface of a cell that induces an immune response.

**Autoimmune disease** - A disease in which the immune system targets and destroys its own healthy body cells.

**Chemical barrier** - A non-specific defence that destroys invading pathogens, e.g. mucus, stomach acid.

**Host** - The organism from which a pathogen or parasite obtains nutrients and/or shelter.

**Mechanical barrier** - A non-specific defence that physically blocks the entry of a pathogen, e.g. skin, nose hairs.

**Memory cell** - A type of white blood cell that remains in the blood and provides immunological memory to a specific antigen on a pathogen.

**Passive immunity** - Resistance in an organism acquired via the transfer of antibodies e.g. mother to infant by breastfeeding. It provides short-term immunity as no memory cells are produced.

**Pathogen** - A disease-causing organism, e.g. virus, fungus, bacterium, protist.

**Phagocytosis** - The process by which white blood cells (**phagocytes**) engulf and destroy pathogens.

**Transmissible disease** - A disease that is caused by a pathogen which can be spread between hosts (either directly or indirectly).



**Type 1 diabetes** - A type of diabetes in which the pancreas fails to produce enough insulin. It is considered to be an autoimmune disease.

**Vaccination** - The deliberate exposure of an individual to a harmless pathogen in order to provide active immunity.

**Water treatment** - Any process that improves water quality and ensures that it is not contaminated by disease-causing bacteria (from untreated sewage for example).

**White blood cells** - Cells of the immune system that protect the body from invading pathogens.

