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Adaptive immune system is the kind of defense that is activated particularly by the invasion of microbes. It means that the immune system 'adapts' to the presence of microbes.

Characteristics of Adaptive Immune System

- **Specificity:** Result of having antigen receptor that recognizes specifically one antigenic determinant. This feature ensures that particular antigens cause specific responses.
- **Diversity:** As a result of gene rearrangement during development, this system is able to recognize millions of antigens or parts of antigens.
- **Memory:** Encounter of antigen after the first one leads to secondary immune response, which is usually quicker and more powerful. This is the result of memory lymphocytes that is produced by activation of naive lymphocyte during the first encounter
- **Other features:** Clonal expansion capacity allows this system to react to infection accordingly. Along the

Antigen recognition

In B cells

In T cells

Components of Adaptive Immune System

Cellular Immunity

Humoral Immunity