

CELL-MEDIATED IMMUNITY

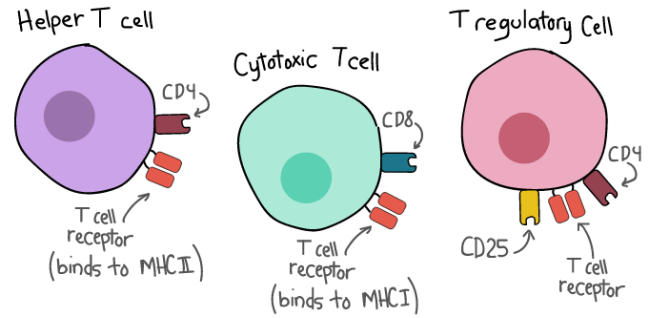
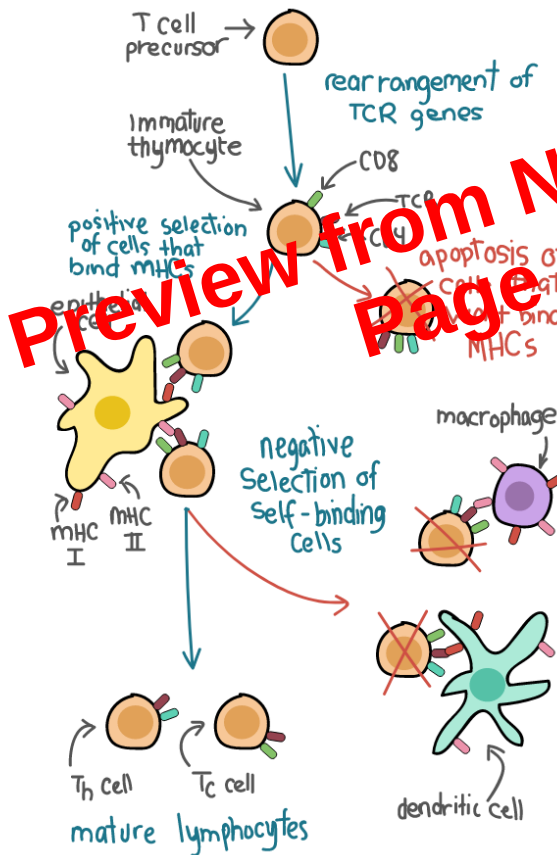
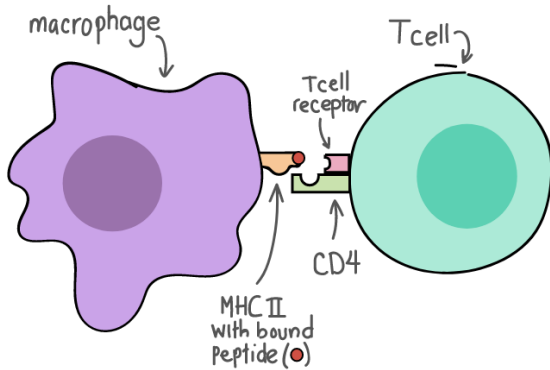
- T-cells

T-cells need to be introduced to antigens via MHC that is attached to an APC
Examples of APCs:

- Macrophages
- B-cells
- Dendritic cells or accessory cells

MHC I – CD8+ cytotoxic T-cells

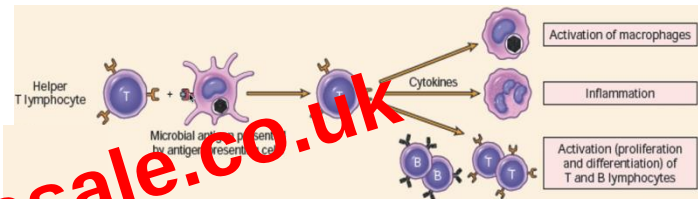
MHC II – CD4+ T-helper cells



TYPES OF T-CELLS

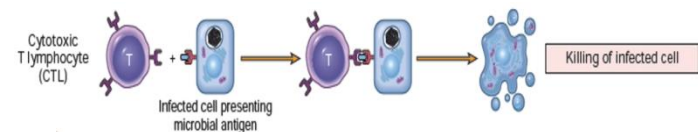
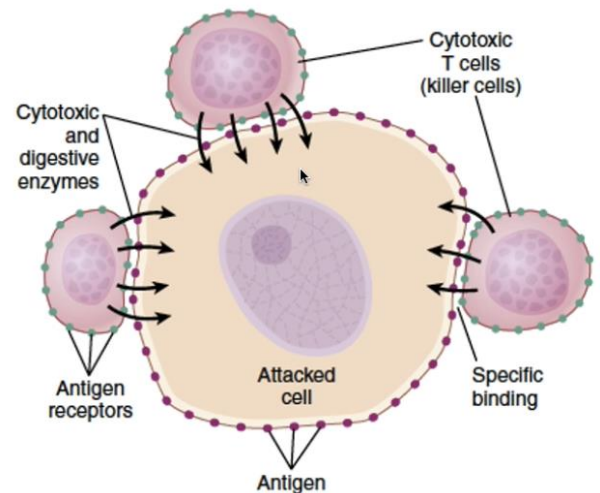
T-helper cells – 75%, lymphokines for proliferation of other T-cells and B-cells, inactivated by HIV; **stimulator**, for more efficient activity of T-cells & B-cells

	T _H 1	T _H 2	T _H 17
Lymphokines that induce subset	IFN- γ , IL-12	IL-4	TGF- β , IL-1, IL-6, IL-23
Major lymphokines/factors produced	IFN- γ , IL-2, TNF- α , GM-CSF	IL-4, IL-5, IL-6, IL-10, IL-13	IL-17, IL-22
Major immune	Macrophage activation, Stimulate IgG antibody production	Stimulate IgE production, Activation of mast cells and eosinophils	Recruitment of neutrophils and monocytes



Cytotoxic T-cells – directly kills microorganisms or even the body's own cells
Surface protein is CD8+

- **Perforins** – protein secreted by cytotoxic T-cells that punch holes in the membrane of the attacked cells
- It attacks cancer cells, transplanted cells
- Defense against mutated cells of your own body



Regulatory T-cell – suppressor cell

- Suppresses the functions of cytotoxic T-cells and T-helper cells to prevent excessive immune reaction and to prevent immune tolerance (attacks to the body's own tissues)
- Surface protein is CD4+