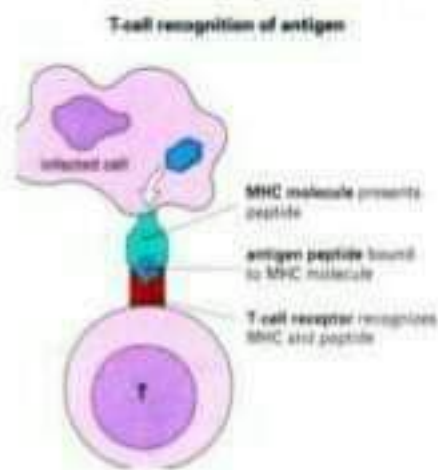
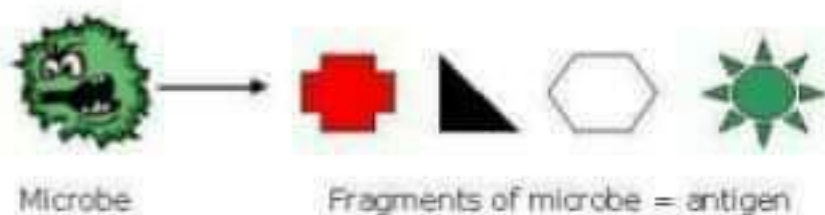


Adaptive Immunity

- Immunity that an organism develops during lifetime
- Develops after exposure to antigens
- Involves the activity of lymphocytes
- Includes 3rd line of defense

Adaptive Immunity (Specific immunity)

- **Specificity**
- **Memory**
- **Ability to distinguish b/w self vs non-self**
- **T and B cell**



Types of Adaptive Immunity

1. Antibody-Mediated Immunity (AMI) or Humoral Immunity

- B lymphocytes

2. Cell-Mediated Immunity (CMI) or Cellular Immunity

- T lymphocytes

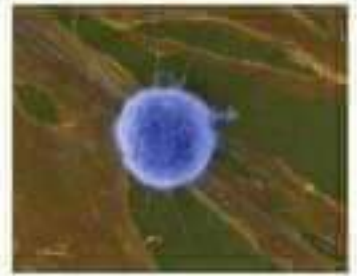
Note: B and T cellsblood, lymph, lymphoid tissues such as spleen, lymph nodes etc.

Cell-Mediated Immune Response

- **T cells**
- Immune response to **infected cells**
(viruses, bacteria and parasites (Pathogens) within cells)
- Defense against cancer and transplant cells



T-Lymphocytes

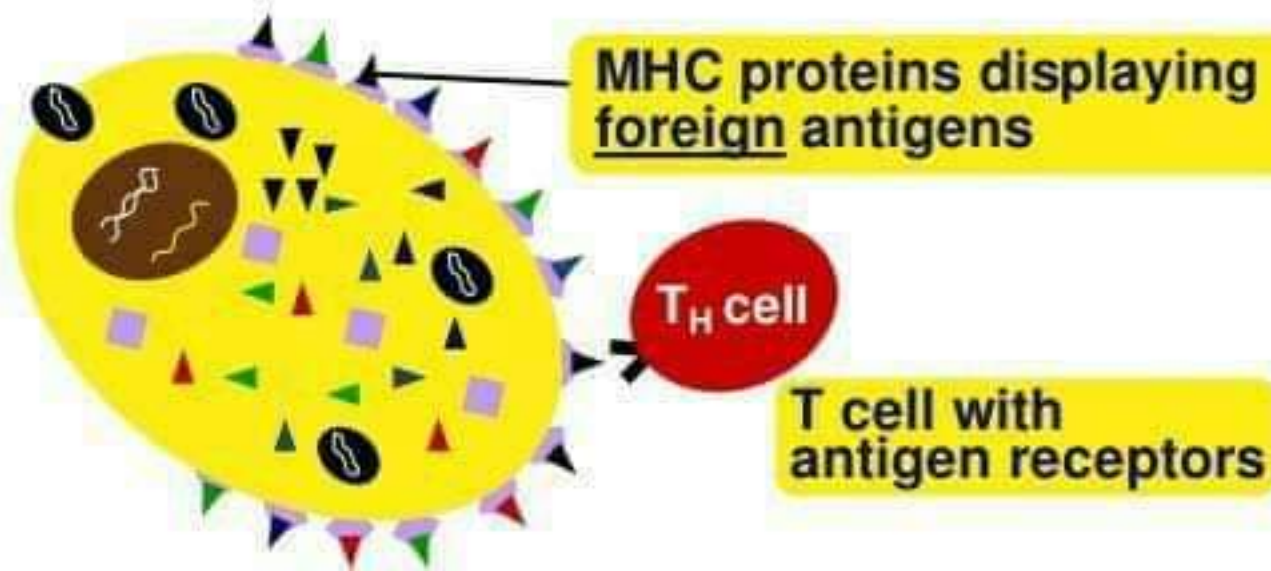


- **Helper T cells** – secrete CYTOKINES
→ help B cells Tc cells to divide
- **Cytotoxic T cells** (killer T cells)
→ Kill infected body cells
- **Memory T cells**
→ remain in body

How do T cells know a cell is infected?

- Infected cells digest some pathogens and MHC proteins carry pieces to cell surface
 - Antigen Presenting Cell (APC)
 - Alerts Helper T cells

infected cell



Helper T Cells (T_H)

- bind to other white blood cells that have previously encountered an antigen
 - stimulate proliferation of other T cells
 - Stimulate B cells that have already become bound to antigen
- Without T_H , there is no immune response

Cytotoxic T Cell (T_c)

- Destroys infected body cells
 - binds to target cell
 - secretes perforin protein
 - punctures cell membrane of infected cell
 - apoptosis

Cytotoxic T cells

- Destroys infected body cells
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