

Immune System

- Immunity:
 - Function: Fight infection through the production of cells that inactivate foreign substances or cells.

Antigen Presentation

1. A phagocyte "eats" a bacteria.

2. Parts of the bacteria (antigen) goes to the surface of the phagocyte

3. The phagocyte presents the antigen to a helper T cell

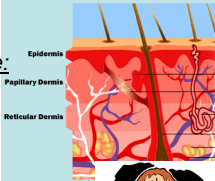

4. The helper T cell is activated.

Labels: dendritic cell, activated helper T cell, helper T cell

Immune System Notes: Nonspecific

A. Nonspecific Defense:

- First line of nonspecific defense:**
 - Hard-to-penetrate skin!
 - Keep things out
 - Mucous membranes (sticky)
 - Trap things
- Second line of nonspecific defense:**
 - Inflammation: Heat (Fever)
 - Response to damage or infection
 - 2nd line because it has snuck past the first line
- Interferon:** Virus infected cells make this to interfere with viral growth

Immune System Notes: Specific

B. Specific Defense: (if pathogen gets past non-specific already) = Immune Response

- Immune response triggered by **Antigens** (virus, bacteria, other bad guys)
- Humoral Immunity:**
 - B-Cells** recognize antigen and multiply making Plasma cells and memory B-cells

Humoral Immunity

B-cells

- Bone marrow
- B-cells
- antibodies
- memory cells

T-cells

- Thymus Gland
- Helper T-cells
- Killer T-cells
- Suppressor T-cells

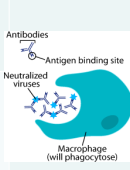
White Blood Cells:

Specific defense since they only attach certain things

1: Phagocytes: Phago: TO EAT		2: T Cells		
Macrophages:	Neutrophils:	Helper-T's:	Killer-T's:	Suppressor T's:
Eat/engulf pathogens, release chemicals (interleukin-1) to summon helper-T's	Release bleach! Kills bad things	Release chemicals (interleukin-2) to killers & Suppressors.	Destroy infected cells by puncturing	Divide slowly; shut off Killers & B-Cells.

White Blood Cells:

Specific defense since they only attach certain things

3: B Cells		Types
Made in Bone marrow Produce antibodies.		a. Plasma Cells: Make antibodies which are proteins that bind antigens
Macrophages "eat" antibody-tagged invaders, plus antibodies link viruses together in a large mass.		b. Memory Cells Stick around so next time they can respond faster <ul style="list-style-type: none"> Why vaccines work