

FIGHTING DISEASE

Pathogen – A disease causing microorganism

Symptoms:

- tissue destruction
- body's response to the invasion

Toxin – many bacteria produce toxins that travel throughout the body

Examples:

- *Clostridium tetani* locks muscles
- *Corynebacterium diphtheriae* prevents cell organelles from manufacturing proteins

IMMUNE SYSTEM RESPONSE

1. First line of defense: External

- Skin is a barrier
- Sweat contains salt and amino acids that poison bacteria
- Cells secrete mucous which captures and digests bacteria
- Cilia sweep particles up and out of the airways
- Stomach acid kills bacteria in food and water

IMMUNE SYSTEM RESPONSE

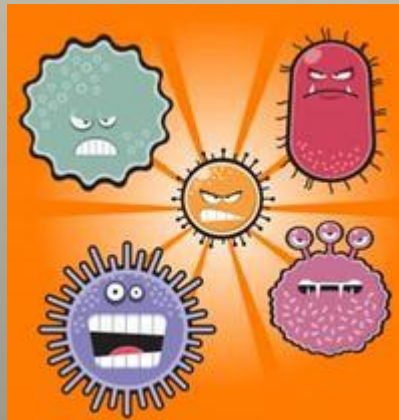
2. Second line of defense: Lymphatic System

- Lymph is a transparent fluid containing lymphocytes
- Lymph nodes and the spleen filter out microorganisms
- Bone marrow produces special WBCs

IMMUNE SYSTEM RESPONSE

3. Third line of defense: Antibodies

- Response to antigens (foreign invaders)
- Attach to antigen and inactivate it
- Flag cell for macrophage consumption



Types of Immunity

Active Immunity

- Lasting protection against an invading antigen through the manufacture of antibodies
- Body manufactures antibodies to combat a specific disease

Passive Immunity

- Temporary protection against a particular disease by the direct introduction of antibodies
- Ex. A mother passes antibodies to baby – only lasts a few months

RESISTING BACTERIA INFECTION

- Sterilization
- Disinfectants
- Antiseptics
- Extermination
- Antibacterial medication