FIGHTING DISEASE

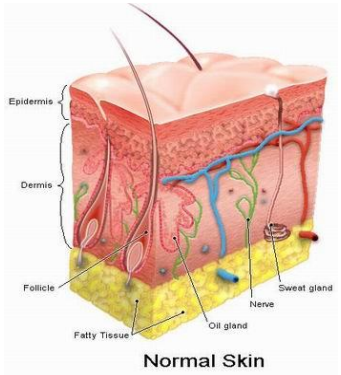
SBI 3C:

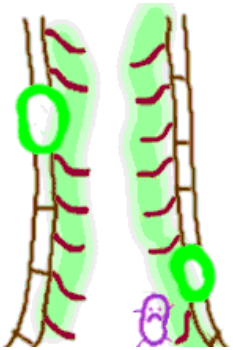
DISEASE:

- Pathogen:
  - A disease causing microorganism
- Pathogenic bacteria produce toxins once they enter your body
- Toxins are harmful to human hosts, especially since they can travel easily through your circulatory system

IMMUNE SYSTEM RESPONSE

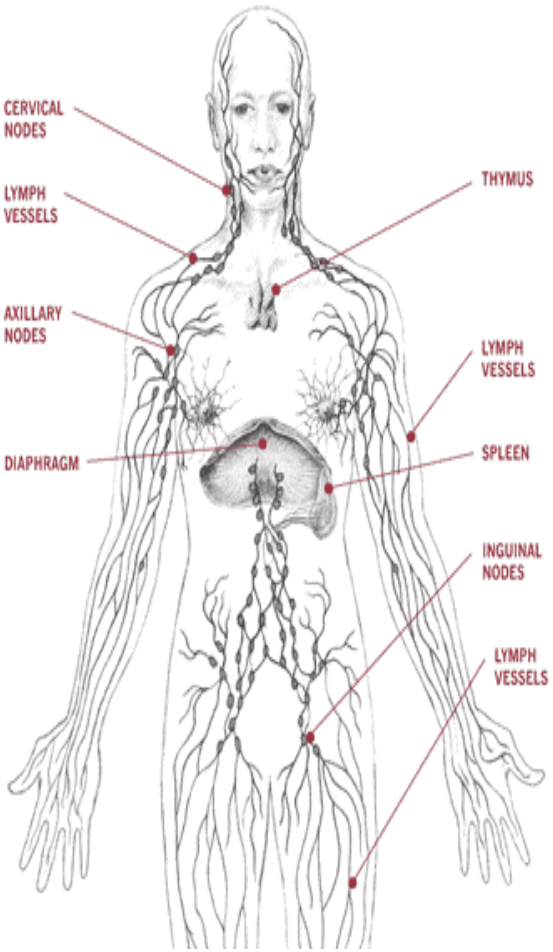
- 1. EXTERNAL BARRIERS:
  - Skin: almost impenetrable (unless cut); sweat is poisonous to most bacteria
  - Nose/throat: secrete mucus that traps and destroys inhaled bacteria; cilia sweep bacteria upward to be swallowed or coughed up
  - Eyes: tears contain enzymes that are harmful to bacteria
  - Stomach: acidic environment kills most bacteria





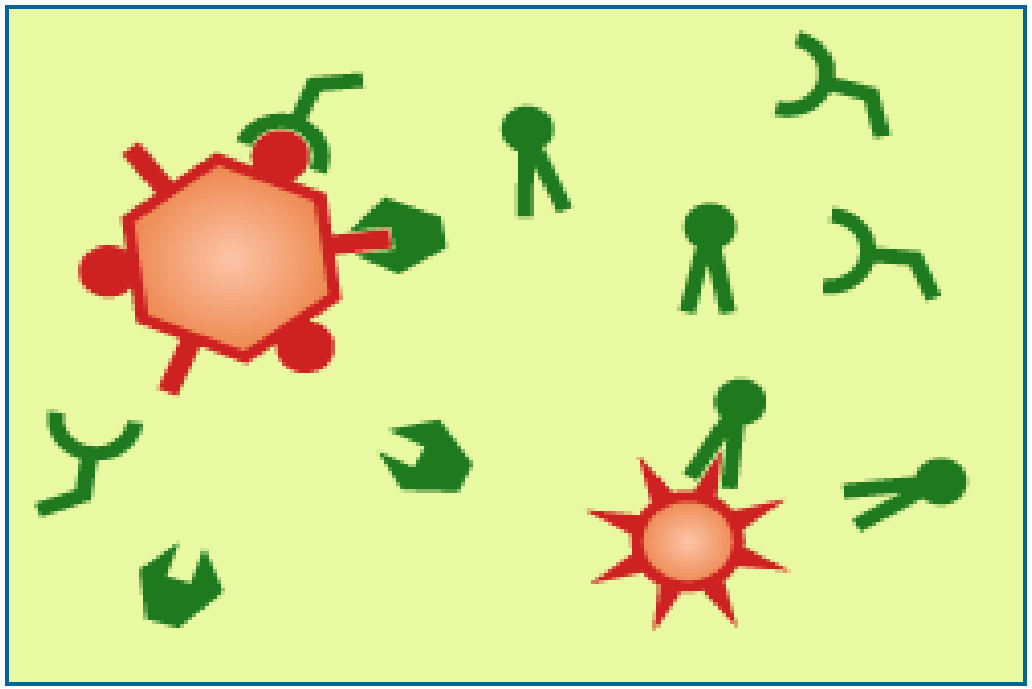
THE IMMUNE SYSTEM RESPONSE:

- Lymphatic organs connected by the lymphatic system
- Lymphatic vessels circulate lymph, a fluid that contains lymphocytes (white blood cells)
- Bacteria are collected by the lymph and filtered out through lymph organs
- Bone marrow produces macrophages, special white blood cells that engulf and destroy bacteria
- Pus is dead white blood cells and dead bacteria



ANTIBODY FORMATION:

- Antibodies are protein molecules that inactivate invaders by binding to them
- Humans contain more than 10 million different antibody types



TYPES OF IMMUNITY:

- Active Immunity:
  - Lasting protection against an invader through the manufacture of antibodies (ie. previous infection, some vaccinations)
- Passive Immunity:
  - Temporary protection against a particular disease by the direct introduction of antibodies (ie. mom to baby, vaccinations)
- Vaccine:
  - Dead or weakened bacteria; body reacts to create to antibodies

Homework Questions

Answer 1 – 5 on page 123 of textbook.