Chapter 8: Blood and Body Defenses

First Line of Innate Defenses
The body has two types of defense against disease. The first defenses are the innate defenses. There are two kinds of innate defenses. The first line of defense serves as a barrier to prevent microorganisms from entering the body. Examples of these barriers are skin, hair, wax in the ears and mucus.

The Second Line of Innate Defenses
The second line of innate defense comes into action when microorganisms enter the body. Part of the second line of defense is comprised of molecules such as lysozyme, protease and acids which kill or weaken the microorganisms which have entered the body.

Inflammation
Another part of the second line of defense is the inflammation process. Inflammation occurs when body cells are damaged. Inflammation has four cardinal signs: redness, heat, swelling and pain. The events associated with inflammation actually speed up the healing process.

Adaptive Defenses
The second type of defenses are the adaptive defenses, also referred to as the immune system. The adaptive defenses consist of B-cells and T-cells. Basically, B-cells recognize and collect microorganisms. There are two kinds of T-cells: Helper T-cells and Cytotoxic T cells. Helper T-cells help the B-cell by confirming that the microorganism is harmful. Cytotoxic T-cells kill cells that are infected with viruses.

The Lymphatic System
The lymphatic system also plays a role in fighting disease. When a person is sick, the microorganisms travel to the lymph nodes. The lymph nodes contain phagocytes, special cells which eat the microorganisms.