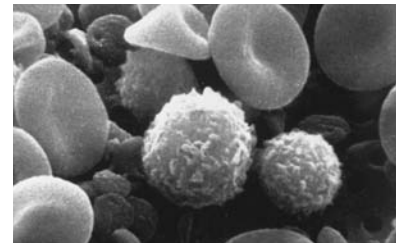


Body Wars

Did you know that most organisms have a special system devoted to protecting them from other tiny, but harmful organisms? This is called the immune system. Every day, animals and plants are threatened by harmful bacteria, viruses, molds, fungi, protozoa, and other microorganisms that can cause disease. These microorganisms are known as **pathogens**.

Pathogens can enter an organism every day through its various openings. The organism works to keep out harmful pathogens. Animals' and plants' skin stops many of them. The saliva in humans' and other animals' mouths, and the digestive juices in the stomach kill some. Even tears wash pathogens away.



Courtesy of Bruce Wetzel/
Harry Schaefer/National
Cancer Institute

Some white blood cells look hairy under a microscope.

Some pathogens still succeed in breaking through outer defenses and threatening an organism's health. They can infect cells and spread disease. That is when an organism's immune system enters the battle. In animals with blood, white blood cells recognize the invader and quickly make more white blood cells. This large group of white blood cells attacks the pathogens and kills them along with the cells they have infected.

Meanwhile, other white blood cells produce **antibodies**, chemicals designed to kill certain kinds of pathogens. The antibodies cause the pathogens to clump together. As clumps, they are easier to recognize and destroy.

