

Chapter 24

Use with Section 2

ENRICHMENT

● Your Immune System

Human Immunodeficiency Virus (HIV)

By now, you've heard a lot about Acquired Immune Deficiency Syndrome, or AIDS. People who are infected with the virus that causes AIDS, the human immunodeficiency virus (HIV), are called HIV positive.

The HIV virus attaches itself to a cell and then it injects its RNA. HIV attacks specific cells in the immune system called T4 lymphocytes or helper T cells. The virus enters the T cells and takes over, turning the T cells into virus factories that produce many copies of the virus. As new virus particles are released into the bloodstream, the original T cell dies. The T cells that fight infection are gradually killed off.

Normally, healthy people have around 1000 T cells per cubic millimeter of blood. People infected with HIV usually show no outward sign of illness until their T cell counts fall to between 400 and 200 cells per cubic millimeter.

At this point, their bodies lose the ability to fight infections. At this stage, the disease is called AIDS.

The first signs of a weakened immune system are chronically swollen lymph nodes and infections of the skin and mouth. People with AIDS have unexplained fevers, night sweats, diarrhea, and weight loss. Pathogens that are normally present in their bodies now become a problem. Because their immune systems aren't working well, disease-causing organisms take advantage of an opportunity to become established. These infections are called opportunistic infections. Patients with AIDS may have opportunistic infections such as *Pneumocystis carinii* pneumonia (PCP), cryptococcal meningitis, which is caused by a fungus, and toxoplasmosis, a parasitic infection of the brain. These, along with a cancer called Kaposi's sarcoma (KS), are the major killers of people with AIDS.

Read more about AIDS and answer the following questions.

1. What treatments for AIDS are currently available? _____

2. Discuss some potential AIDS vaccines. _____

3. How are new AIDS drugs tested? _____
