What Are HIV and AIDS?

- **Human immunodeficiency virus (HIV)** is the virus that primarily affects cells of the immune system and that causes AIDS.
- **Acquired immune deficiency syndrome (AIDS)** is the disease that is caused by the HIV virus, which weakens the immune system.
What Are HIV and AIDS?

• People with AIDS cannot fight off illnesses that a healthy immune system could normally defeat.
• It usually takes 5 to 10 years before a person infected with HIV develops AIDS.
HIV Around the World

- AIDS is a **pandemic**, a disease that spreads quickly through human populations all over the world.
- More than 20 million people have died from AIDS since HIV was first discovered around 20 years ago.
HIV Around the World

- Most scientists think HIV originally came from Africa.
- AIDS is the leading cause of death in sub-Saharan Africa.
- HIV is still spreading throughout the world, especially in Asia and Eastern Europe.
Worldwide HIV/AIDS

Estimated Number of People Living with HIV/AIDS

- **North America**: 940,000
- **Caribbean**: 420,000
- **Latin America**: 1.4 million
- **Western Europe**: 560,000
- **North Africa and Middle East**: 440,000
- **Sub-Saharan Africa**: 28.1 million
- **Eastern Europe and Central Asia**: 1 million
- **East Asia and Pacific**: 1 million
- **South and Southeast Asia**: 6.1 million
- **Australia and New Zealand**: 15,000

Source: Joint United Nations Program on HIV/AIDS
HIV Around the World

- 850,000 to 900,000 people are currently living with HIV infection in the United States.
- Over 300,000 people are currently living with AIDS in the United States.
- Each year, 40,000 more people are infected with HIV in the United States.
Teens and HIV

- Teens are one of the fastest-growing groups to become infected with HIV.
- Over 10,000 teens have been diagnosed with HIV in the United States. More than 4,000 of these have developed AIDS.
- HIV is rising in teens because many teens do not take the risks of HIV and AIDS seriously, and engage in high-risk behaviors.
HIV Infects the Body

- **Helper T cells (CD4+ cells)** are the white blood cells that activate the immune response and that are the primary target cells of HIV infection.
- HIV uses helper T cells to make copies of itself, killing the helper T cells in the process.
HIV Infests the Body

- As helper T cell counts drop, the body loses its ability to fight off other infections and certain cancers.
- An **opportunistic infection (OI)** is an illness due to an organism that causes disease in people with weakened immune systems.
Phases and Symptoms of HIV Infection

• **Phase I** of HIV infection is the asymptomatic stage, which means the infection is present but there are few or no symptoms. This phase can last 10 years or more.

• **Phase II** is marked by the beginning or worsening of symptoms as the immune system fails.
Phases and Symptoms of HIV Infection

- **Phase III** marks the beginning of AIDS. The helper T cell count is 200 or less and AIDS-defining conditions develop, such as opportunistic infections.
The Onset of AIDS

The Onset of AIDS as Indicated by T Cell Count

Phase I and II
- There are few or no symptoms in Phase I.
- Symptoms begin or worsen in Phase II.

Phase III
- AIDS begins.

HIV infection

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Source: Annals of Internal Medicine.
Ways That HIV Is Spread

• There are 3 main ways that HIV is spread.
  1. during sexual activity, which includes vaginal, oral, and anal sex, with an infected person
  2. through sharing needles or other intravenous injection equipment with an infected person
  3. from an infected mother to her infant before or during the birth process or by breast-feeding.
Ways That HIV Is Spread

• HIV is NOT spread by the following:
  
  • casual contact, including shaking hands, holding hands, kissing, hugging, or playing sports with an infected person
  
  • sharing bathroom facilities, drinking glasses, or eating utensils
Teens at Risk for HIV

• Almost a third of the 40 million people living with HIV/AIDS are teens or young adults.
• AIDS is the eighth leading cause of death in the United States for people between 15 and 24.
Teens at Risk for HIV

- How do you know if you are at risk of HIV? If you take part in any behavior that could put you at risk, then you are at risk.
- The only sure way to know if you are infected with HIV is an HIV test. If you think you are at risk, GET TESTED.
Preventing HIV and AIDS

- The first step in preventing AIDS is to be educated about HIV and AIDS.
- The only way to eliminate the risks of HIV and AIDS is to avoid risky behaviors.
  - Practice abstinence
  - Avoid multiple partners
  - Don’t share needles or other injection equipment
  - Avoid alcohol and illegal drugs
Preventing HIV and AIDS

- **Universal precautions** are a set of procedures used to avoid contact with bodily fluids and reduce the risk of spreading HIV and other diseases.
### Universal Precautions

**Procedures of universal precautions**

- Wear latex or vinyl gloves when touching the patient or handling potentially infected fluids.
- Wear protective clothing such as laboratory coats, goggles, face masks, and hats during activities that may cause exposure to the patient’s body fluids.
- Handle and dispose of all bodily fluids or tissues in a safe manner.
- Handle safely and dispose of properly all supplies and equipment that have been contaminated with body fluids.
- Use single-use supplies or equipment when practical.
- Clean and sterilize equipment that will be used on more than one patient.
Testing for HIV

- An **HIV-antibody test** is a test that detects antibodies to determine if a person has been infected with HIV. If the test is positive, a second test is done.
- A person is **HIV positive** if they test positive for HIV in two different tests.
Testing for HIV

- A negative test result can be misleading because antibodies may not be found for 6 months after an infection. You should get retested after 6 months.
- T cell counts and viral loads are tests for monitoring HIV in people known to be infected.
Treating HIV and AIDS

• No cure exists for HIV and AIDS. Treatment can help an infected person survive longer.
• **Drug combination therapy** is an AIDS treatment program in which patients take more than one drug.
• Drugs for treating HIV can have severe side effects, can lose their effectiveness over time, are expensive, and require diligence and commitment.
Living with HIV Infection

• Most HIV-infected people in the early phases can do almost everything they did before they got infected.
• People infected with HIV must avoid participating in activities that could expose others to HIV.
Living with HIV Infection

• Maintaining good health through treatment, diet, exercise, and rest help delay the progression of HIV to AIDS.
• Many HIV-infected people become activists for HIV/AIDS prevention or help other infected people.