



# HIV Edited Glossary

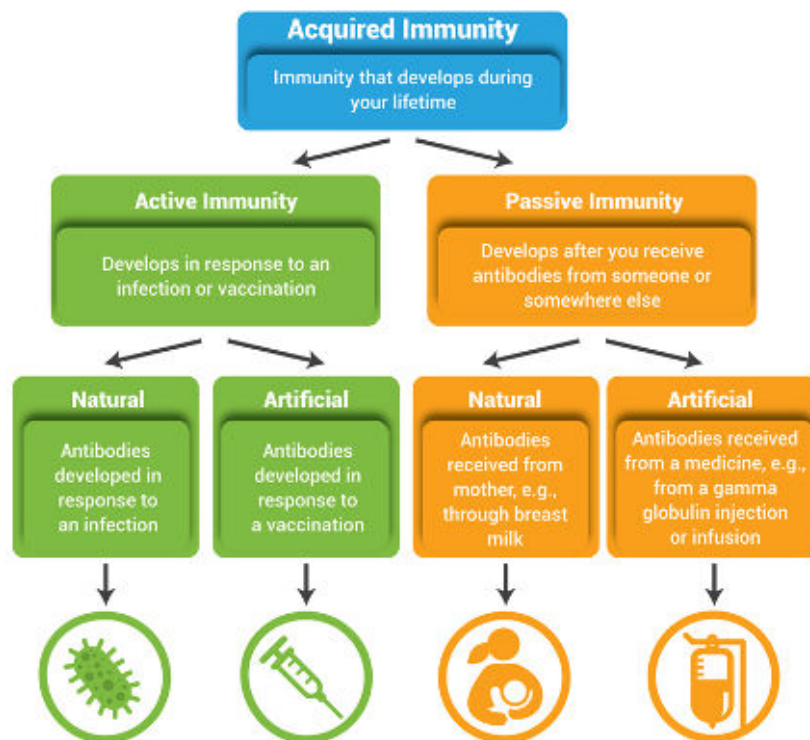


## Absolute Contraindication

When a particular treatment or procedure should not be used under any circumstance because of the severe and potentially life-threatening risks involved.

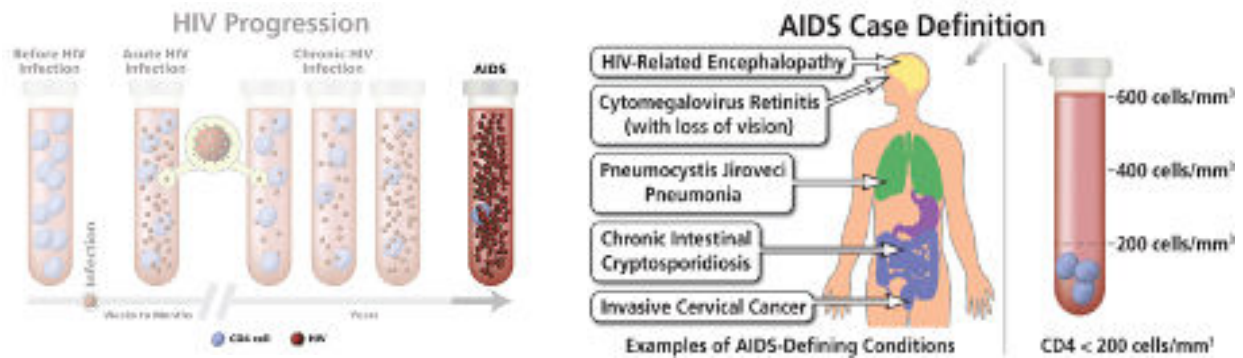
## Acquired Immunity

Immunity that develops during a person's lifetime. There are two types of acquired immunity: active immunity and passive immunity.



## Acquired Immunodeficiency Syndrome (AIDS)

A disease of the immune system due to infection with HIV. HIV destroys the CD4 T lymphocytes (CD4 cells) of the immune system, leaving the body vulnerable to life-threatening infections and cancers. Acquired immunodeficiency syndrome (AIDS) is the most advanced stage of HIV infection. To be diagnosed with AIDS, a person with HIV must have an AIDS-defining condition or have a CD4 count less than 200 cells/mm<sup>3</sup> (regardless of whether the person has an AIDS-defining condition).



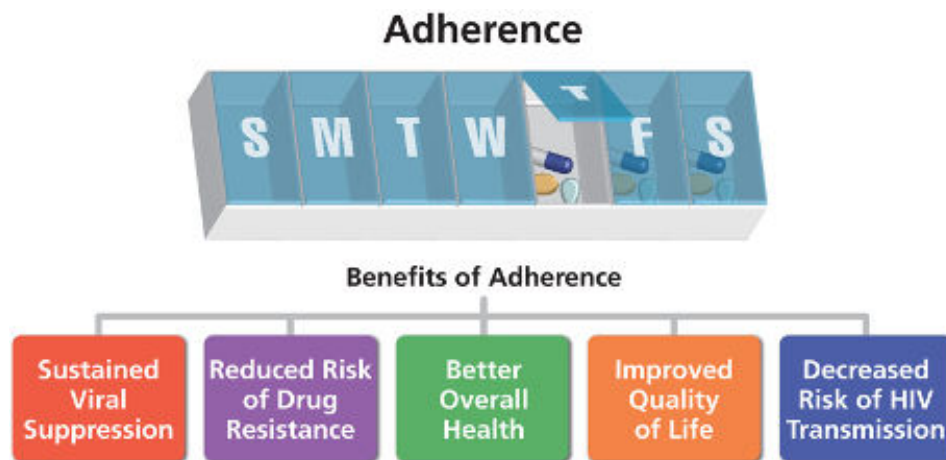
## Acquired Resistance

Synonym(s): Secondary Resistance

When a drug-resistant strain of HIV emerges while a person is on antiretroviral therapy (ART) for the treatment of HIV infection.

## Adherence

Taking medications (or other treatment) exactly as instructed by a health care provider. The benefits of strict adherence to an HIV regimen include sustained viral suppression, reduced risk of drug resistance, improved overall health and quality of life, and decreased risk of HIV transmission.



## AIDS Dementia Complex (ADC)

Synonym(s): AIDS Encephalopathy, HIV Encephalopathy, HIV-Associated Dementia

A progressive neurological condition associated with advanced HIV infection or AIDS. Symptoms include memory loss, slowed movements, and behavioral changes.

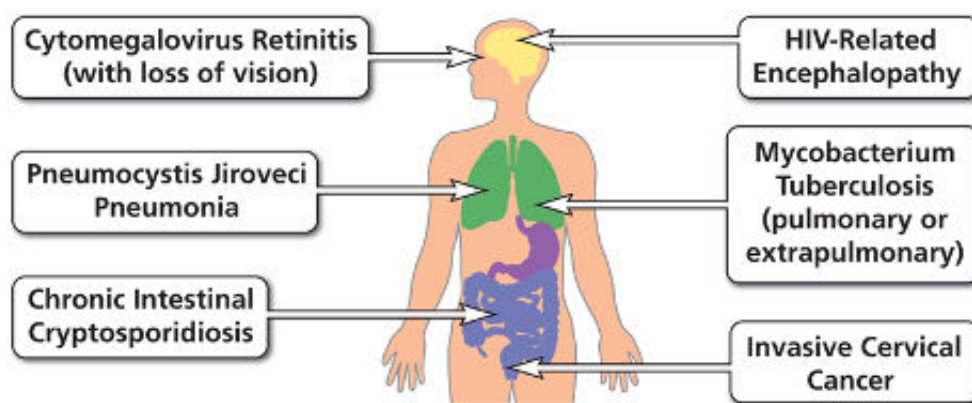
## AIDS Education and Training Centers (AETCs)

Regional centers that conduct education and training programs for health care providers who treat people living with HIV/AIDS. Training is targeted to providers who serve minority populations, the homeless, rural communities, prisoners, community and migrant health centers, and Ryan White HIV/AIDS Program-funded sites. AIDS Education and Training Centers (AETCs) serve all 50 states and many U.S. territories.

## AIDS-Defining Condition

Any HIV-related illness included in the Centers for Disease Control and Prevention's (CDC) list of diagnostic criteria for AIDS. AIDS-defining conditions include opportunistic infections and cancers that are life-threatening in a person with HIV.

### Examples of AIDS-Defining Conditions



## AIDS-Related Cancer

A type of cancer that is more likely to occur in people with HIV/AIDS than in people with healthy immune systems. AIDS-related cancers include lung cancer, anal cancer, and Hodgkin lymphoma. Some but not all AIDS-related cancers are AIDS-defining conditions.

## Antibody Differentiation Test

A type of antibody test that can distinguish HIV-1 antibodies from HIV-2 antibodies. When an initial HIV antibody test result is positive, an antibody differentiation test is done to determine whether a person has HIV-1 or HIV-2. The test is done using a sample of blood.

## Antiretroviral (ARV)

A drug used to prevent a retrovirus, such as HIV, from replicating. The term primarily refers to antiretroviral (ARV) HIV drugs.

## Antiretroviral Therapy (ART)

Synonym(s): Combination Therapy, Combined Antiretroviral Therapy (cART), Highly Active Antiretroviral Therapy (HAART)

The daily use of a combination of HIV medicines (called an HIV regimen) to treat HIV infection. A person's initial HIV regimen generally includes three antiretroviral (ARV) drugs from at least two different HIV drug classes.

## Antisense

Antiviral A drug made of short segments of DNA or RNA that can bind to and alter or suppress the function of viral DNA or RNA. Antisense antivirals prevent viruses from replicating.

## Antiviral

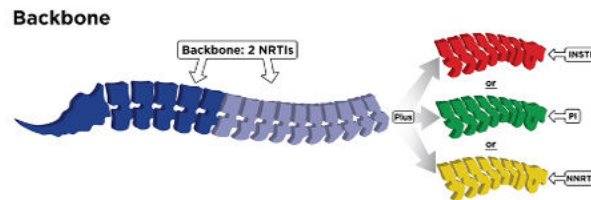
A drug used to treat infections caused by viruses.

## Attachment Inhibitor

Attachment inhibitors are a class of drugs that bind to the gp120 protein on the outer surface of HIV, preventing HIV from binding to and entering CD4 T lymphocytes (CD4 cells). Attachment inhibitors are part of a larger class of HIV drugs called entry inhibitors. Currently, attachment inhibitors are still under investigation and have not been approved by the Food and Drug Administration (FDA) for patient use.

## Backbone

The two nucleoside reverse transcriptase inhibitors (NRTIs) upon which an initial HIV regimen is built. To complete the HIV regimen, the two NRTIs are combined with a third antiretroviral HIV drug from either the non-nucleoside reverse transcriptase inhibitor (NNRTI), protease inhibitor (PI), or integrase strand transfer inhibitor (INSTI) drug class.



## Baseline

An initial measurement used as the basis for future comparison. For people with HIV, baseline testing includes CD4 count, viral load (HIV RNA), and resistance testing. Baseline test results are used to guide HIV treatment choices and to monitor the effectiveness of antiretroviral therapy (ART).

## BID

Synonym(s): b.i.d., bid

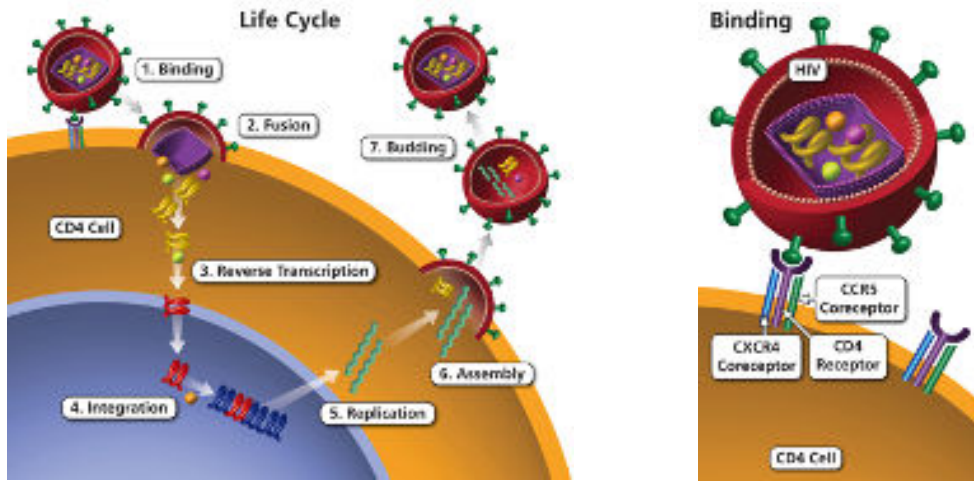
An abbreviation meaning “two times a day.” The abbreviation is commonly used in drug dosing instructions.



## Binding

Synonym(s): Attachment

The first of seven steps in the HIV life cycle. When HIV attacks a CD4 cell, the virus binds (attaches itself) to molecules on the surface of the CD4 cell: first a CD4 receptor and then either a CCR5 or CXCR4 coreceptor.



## Biological Response Modifiers (BRMs)

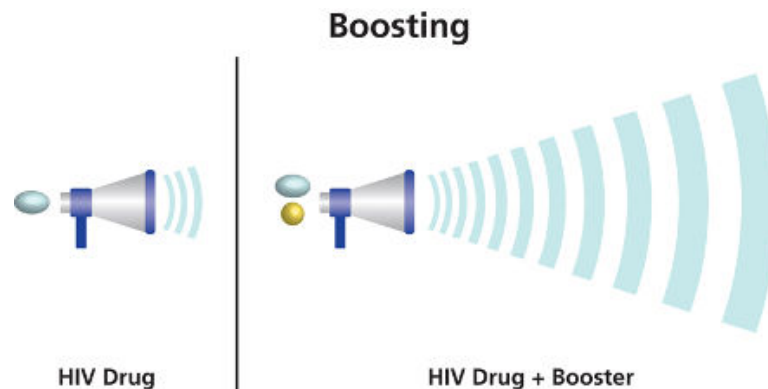
Biological response modifiers (BRMs) enhance, suppress, or otherwise modify the body's immune response to disease. BRM treatments include gene therapy and immunotherapy, such as vaccines.

## Blip

A temporary, detectable increase in the amount of HIV in the blood (viral load) that occurs after antiretroviral therapy (ART) has effectively suppressed the virus to an undetectable level. Isolated blips are not considered a sign of virologic failure.

## Boosting

Using an antiretroviral (ARV) drug (or other drug) to increase the effectiveness of another ARV drug. For example, drugs in the protease inhibitor (PI) ARV drug class are often boosted with the drug cobicistat. Cobicistat interferes with the breakdown of the PI, which allows the PI to remain in the body longer at a higher concentration.

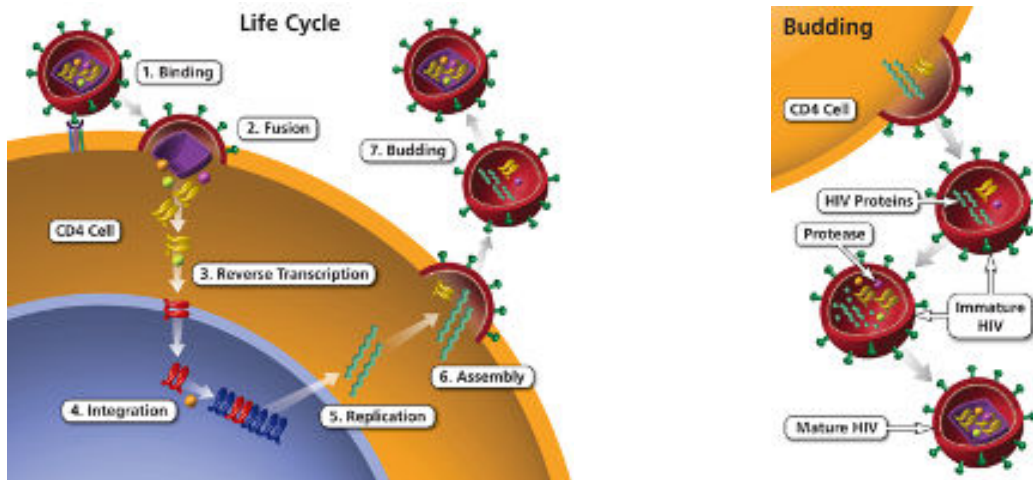


## Broadly Neutralizing Antibodies (bNAbs)

A type of antibody that can recognize and block many types of HIV from entering healthy cells. Broadly neutralizing antibodies (bNAbs) may also activate other immune cells to help destroy HIV-infected cells. Researchers are investigating whether bNAbs could be used to develop a therapeutic HIV vaccine.

## Budding

The final step of seven steps in the HIV life cycle. During budding, immature (noninfectious) HIV pushes itself out of the host CD4 cell. (Noninfectious HIV can't infect another CD4 cell.) Once outside the CD4 cell, the new HIV releases protease, an HIV enzyme. Protease breaks up the long protein chains in the immature virus, creating the mature (infectious) virus.



## Burkitt Lymphoma

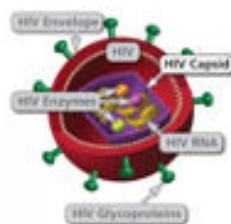
Synonym(s): Burkitt's Lymphoma

A fast-growing type of B-cell non-Hodgkin lymphoma (cancer of the lymphatic system). In people with HIV, Burkitt lymphoma is considered an AIDS-defining cancer.

## Capsid

Synonym(s): HIV Viral Core

The core section of HIV that contains the genetic information (two single strands of RNA) and three enzymes needed for HIV to replicate.



## CCR5 (C-C Chemokine Receptor 5)

Synonym(s): C-C Chemokine Receptor 5, Cysteine-Cysteine Chemokine Receptor 5

A protein on the surface of certain immune system cells, including CD4 T lymphocytes (CD4 cells). CCR5 can act as a coreceptor (a second receptor binding site) for HIV when the virus enters a host cell.

## CD4 T Lymphocyte

Synonym(s): CD4 Cell, Helper T Cell

A type of lymphocyte. CD4 T lymphocytes (CD4 cells) help coordinate the immune response by stimulating other immune cells, such as macrophages, B lymphocytes (B cells), and CD8 T lymphocytes (CD8 cells), to fight infection. HIV weakens the immune system by destroying CD4 cells.

## CD4 Count

Synonym(s): CD4 Cell Count, CD4 T Lymphocyte Count

A laboratory test that measures the number of CD4 T lymphocytes (CD4 cells) in a sample of blood. In people with HIV, the CD4 count is the most important laboratory indicator of immune function and the strongest predictor of HIV progression. The CD4 count is also used to monitor a person's response to antiretroviral therapy (ART).

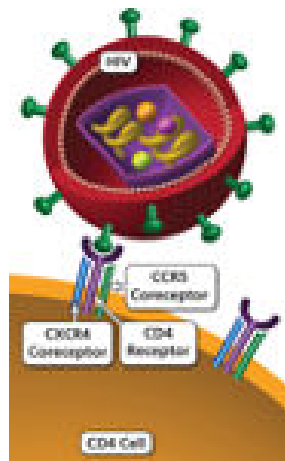
## CD4 Percentage

Synonym(s): CD4 Cell Percentage, CD4 T Lymphocyte Percentage

Percentage of lymphocytes that are CD4 T lymphocytes (CD4 cells). In certain cases, such as in children with HIV who are younger than 5 years of age, CD4 percentage is used rather than CD4 count to assess HIV progression or response to antiretroviral therapy (ART).

## CD4 Receptor

A protein found primarily on the surface of CD4 T lymphocytes (CD4 cells). To enter a host cell, HIV binds to a CD4 receptor and a coreceptor (either CCR5 or CXCR4) on the host cell.



## **CD8 T Lymphocyte**

Synonym(s): CD8 Cell, Cytotoxic T Lymphocyte, Killer T Cell

A type of lymphocyte. CD8 T lymphocytes (CD8 cells) recognize and destroy cells infected with microorganisms, such as bacteria or viruses.

## **Cell-Mediated Immunity**

Synonym(s): Cellular Immunity

Type of immune response that is produced by the direct action of immune cells, such as T lymphocytes (T cells), rather than by antibodies.

## **Centers for Disease Control and Prevention-National Prevention Information Network (CDC-NPIN)**

Synonym(s): National Prevention Information Network

A service of the Centers for Disease Control and Prevention (CDC) that disseminates information on HIV/AIDS, viral hepatitis, other sexually transmitted diseases (STDs), and tuberculosis (TB). Information is available online and over the phone.

## **Cesarean Delivery**

Delivery of a baby by a surgical incision through the mother's abdominal wall and uterus. In some pregnant women with HIV, a scheduled cesarean delivery may reduce the risk of mother-to-child transmission of HIV.

## **Chemoprevention**

Synonym(s): Chemoprophylaxis

Use of specific drugs, vitamins, or other substances to reverse, suppress, or prevent a disease.

## **Child-Turcotte-Pugh Classification System**

Synonym(s): Child-Pugh Score

A classification system used to measure liver function, especially in people with chronic liver disease. The system may be used to assess liver function in people who have HIV/hepatitis C virus (HCV) coinfection.

## **Chlamydia**

A common sexually transmitted disease caused by the bacterium *Chlamydia trachomatis*. Chlamydia often has mild or no symptoms, but if left untreated, it can lead to serious complications, including infertility. Chlamydia may increase the risk of HIV transmission.

## **Chronic HIV Infection**

Synonym(s): Asymptomatic HIV Infection, Clinical Latency

The stage of HIV infection between acute HIV infection and the onset of AIDS. During chronic HIV infection, HIV levels gradually increase and the number of CD4 cells decrease. Declining CD4 cell levels indicate increasing damage to the immune system. Antiretroviral therapy (ART) can prevent HIV from destroying the immune system and advancing to AIDS.



## Class-Sparing Regimen

An antiretroviral (ARV) drug regimen that purposefully excludes all ARV drugs from a specific drug class. Class-sparing regimens are used to save specific ARV drugs for future use in case a regimen needs to be changed because of toxicity or drug resistance. A class-sparing regimen may also be used to avoid adverse effects associated with a specific drug class.

## Clastogenic

Causing breaks in chromosomes, which results in sections of a chromosome being deleted or rearranged. Before being approved, drugs—including antiretroviral (ARV) drugs—are tested to assess their potential for clastogenic effects.

## Clinical Progression

Advance of disease that can be measured by observable and diagnosable signs or symptoms. For example, HIV progression can be measured by change in CD4 count.

## Coccidioidomycosis

Synonym(s): Desert Fever, Desert Rheumatism, San Joaquin Valley Fever, Valley Fever

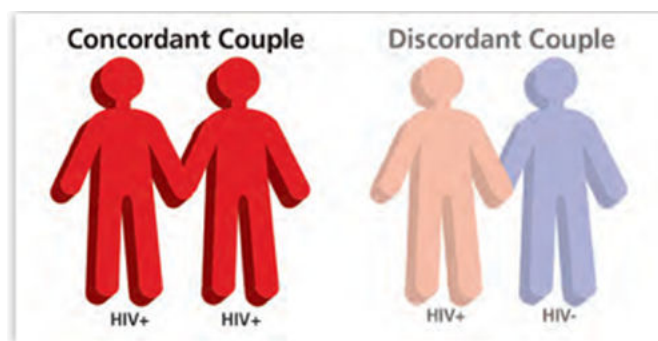
An infection caused by breathing in spores of the fungi *Coccidioides immitis* or *Coccidioides posadasii*. The infection starts in the lungs but can spread to other parts of the body, including the skin, brain, bones, and heart. In people with HIV, disseminated (extrapulmonary) coccidioidomycosis is an AIDS-defining condition.

## Coinfection

When a person has two or more infections at the same time. For example, a person living with HIV may also have a hepatitis C virus (HCV) coinfection, a tuberculosis (TB) coinfection, or both.

## Concordant Couple

A couple in which both partners have the same sexually transmitted disease (STD), such as HIV.



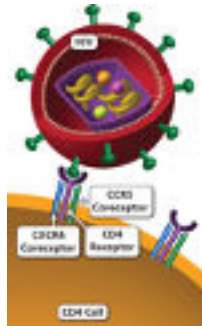
## Condom

Synonym(s): Prophylactic

A product used during sex (including vaginal, anal, or oral sex) to prevent the transmission of sexually transmitted diseases, such as HIV, and/or the likelihood of pregnancy. The male condom is a thin cover that fits over a man's erect penis. The female condom is a nitrile pouch that fits inside the vagina.

## Coreceptor

A protein on the surface of a cell that serves as a second binding site for a virus or other molecule. In order to enter a host cell, HIV must bind to two sites on the cell: the primary CD4 receptor and either the CCR5 or CXCR4 coreceptor.



## Cross Resistance

Resistance to one or more drugs that occurs as a result of previous exposure to a similar drug. For example, HIV resistance to one nonnucleoside reverse transcriptase inhibitor (NNRTI) drug may produce resistance to all drugs in the NNRTI drug class, including drugs never used. Excluding all drugs in a drug class from an HIV regimen (class sparing) is a strategy used to prevent cross resistance.

## Cryptococcal Meningitis

A life-threatening infection caused by the fungi *Cryptococcus neoformans* and *Cryptococcus gattii*, which infect the membranes surrounding the brain and spinal cord. Symptoms include fever, malaise, and headache. Cryptococcal meningitis most often affects people with weakened immune systems, including people with HIV. In people with HIV, cryptococcal meningitis is an AIDS-defining condition.

## Cryptococcosis

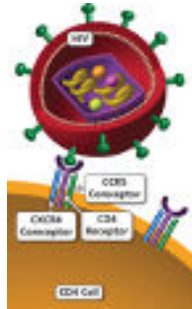
Synonym(s): Torulosis

An infection caused by the fungi *Cryptococcus neoformans* and *Cryptococcus gattii*. The fungi enter and infect the body through the lungs. Cryptococcosis may go away on its own, remain in the lungs, or spread throughout the body (disseminate). Most cases of cryptococcosis are in people with weakened immune systems, such as people with HIV. In people with HIV, extrapulmonary (outside the lungs) cryptococcosis is an AIDS-defining condition.

## CXCR4

Synonym(s): C-X-C Chemokine Receptor 4, Fusin

A protein on the surface of certain immune system cells, including CD4 T lymphocytes (CD4 cells). CXCR4 can act as a coreceptor (a second receptor binding site) for HIV when the virus enters a host cell.



### CXCR4 Antagonist

CXCR4 antagonists are a class of drugs that block the CXCR4 coreceptor on the surface of certain immune cells, such as CD4 T lymphocytes (CD4 cells). This prevents HIV from entering the cell. CXCR4 antagonists are part of a larger class of HIV drugs called entry inhibitors. Currently, CXCR4 antagonists are still under investigation and have not been approved by the Food and Drug Administration (FDA) for patient use.

### Cryptosporidiosis

Synonym(s): Crypto

An infection caused by the protozoan *Cryptosporidium*. Symptoms of cryptosporidiosis include diarrhea, nausea, vomiting, and lower abdominal cramping. In people with HIV, chronic cryptosporidiosis (lasting more than 1 month) is an AIDS-defining condition.

### Cytomegalovirus (CMV)

A herpesvirus that can cause infection in many parts of the body. Typically, only people with weakened immune systems become seriously ill from cytomegalovirus (CMV) infection. In people with HIV, CMV can cause serious illnesses, including pneumonia (infection of the lungs), gastroenteritis (infection of the gastrointestinal tract), encephalitis (inflammation of the brain), or retinitis (infection of the eye). CMV infection that begins more than one month after birth and affects a body part other than the liver, spleen, or lymph nodes is an AIDS-defining condition in people with HIV.

### Directly Observed Therapy (DOT)

A method of drug administration in which a health care professional watches as a person takes each dose of a medication. Directly observed therapy (DOT) is used to ensure the person receives and takes all medications as prescribed and to monitor response to treatment. DOT is widely used to manage tuberculosis (TB) disease. In HIV treatment, DOT is sometimes called directly administered antiretroviral therapy (DAART).

## Drug Class

A group of drugs that share common properties, including a similar mechanism of action, chemical structure, or approved use. Approved antiretroviral (ARV) HIV drugs are divided into seven drug classes based on how each drug interferes with the HIV life cycle. These seven classes include the nucleoside reverse transcriptase inhibitors (NRTIs), nonnucleoside reverse transcriptase inhibitors (NNRTIs), protease inhibitors (PIs), fusion inhibitors, CCR5 antagonists, post-attachment inhibitors, and integrase strand transfer inhibitors (INSTIs).

## Drug Resistance

Synonym(s): Resistance

When a bacteria, virus, or other microorganism mutates (changes form) and becomes insensitive to (resistant to) a drug that was previously effective. Drug resistance can be a cause of HIV treatment failure.

## Drug-Susceptible HIV

When a strain of HIV is sensitive to one or more antiretroviral (ARV) drugs. Antiretroviral therapy (ART) will likely be effective against a drug susceptible strain of HIV.

## Dual-Tropic Virus

A strain of HIV that can enter and infect a host CD4 cell by attaching to either the CCR5 or CXCR4 coreceptor on the CD4 T lymphocyte (CD4 cell). To enter a CD4 cell, HIV must first attach to a CD4 receptor, then attach to either the CCR5 or CXCR4 coreceptor, and finally fuse its membrane with the CD4 cell membrane. HIV is usually R5-tropic (uses CCR5) during the early stages of infection, but the virus may later switch to using either only CXCR4 (X4-tropic) or both CCR5 and CXCR4 (dual-tropic).

## Dual/Mixed Tropic Virus

Synonym(s): D/M-Tropic Virus

A strain of HIV that includes a combination of R5-tropic virus and X4-tropic virus (mixed-tropic virus) and/or a virus that uses either the CCR5 or the CXCR4 coreceptor (dual-tropic virus). To enter a host CD4 T lymphocyte (CD4 cell), HIV must first attach to a CD4 receptor, then attach to either a CCR5 or CXCR4 coreceptor, and finally fuse its membrane with the CD4 cell membrane.

## Elite Controllers

A small subset of people living with HIV who are able to maintain suppressed viral loads for years without antiretroviral therapy (ART). However, because HIV continues to replicate even in elite controllers, ART is recommended for elite controllers who have declining CD4 counts or who develop HIV-related complications.

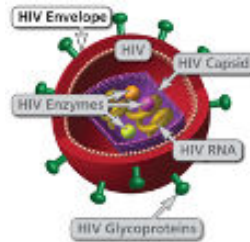
## Entry Inhibitor

A group of antiretroviral (ARV) HIV drugs that includes fusion inhibitors, CCR5 antagonists, and post-attachment inhibitors. Entry inhibitors block HIV from entering a host CD4 T lymphocyte (CD4 cell).

## Envelope

Synonym(s): HIV Viral Envelope

The outer coat of HIV, made up of two layers of lipids (fatty molecules). HIV uses protein “spikes” embedded in its envelope to enter host cells.



## Enzyme-Linked Immunosorbent Assay (ELISA)

Synonym(s): Enzyme Immunoassay

A laboratory test to detect the presence of HIV antibodies in the blood or oral fluid. The immune system responds to HIV infection by producing HIV antibodies. A positive result on an enzyme-linked immunosorbent assay (ELISA) must be confirmed by a second test for a person to receive a definitive diagnosis of HIV infection.

## False Negative

A test result that incorrectly indicates that the condition being tested for is not present when, in fact, the condition is actually present. For example, a false-negative HIV test indicates that a person does not have HIV when the person actually does have HIV.

## False Positive

A test result that incorrectly indicates that the condition being tested for is present when, in fact, the condition is actually not present. For example, a false-positive HIV test indicates that a person has HIV when the person actually does not have HIV.

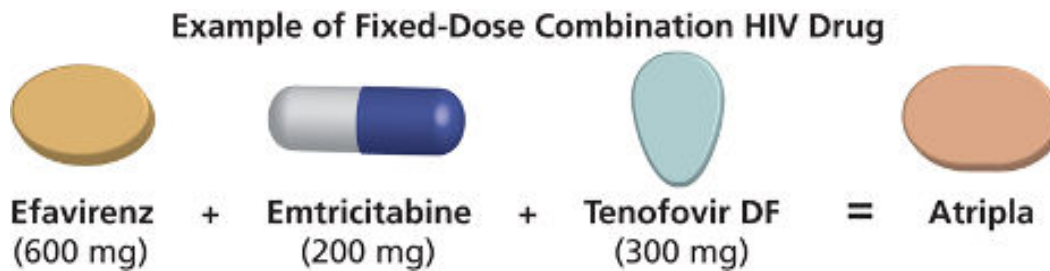
## First-Line Therapy

A treatment that is accepted as best for the initial treatment of a condition or disease. The recommended first-line HIV treatment regimens include antiretroviral (ARV) drugs that are safe, effective, and convenient for most people with HIV who have never taken ARVs before.



## Fixed-Dose Combination (FDC)

Two or more drugs contained in a single dosage form, such as a capsule or tablet. An example of a fixed-dose combination (FDC) HIV drug is Atripla (a combination of efavirenz, emtricitabine, and tenofovir disoproxil fumarate). By reducing the number of pills a person must take each day, fixed-dose combination drugs can help improve adherence to an HIV treatment regimen.



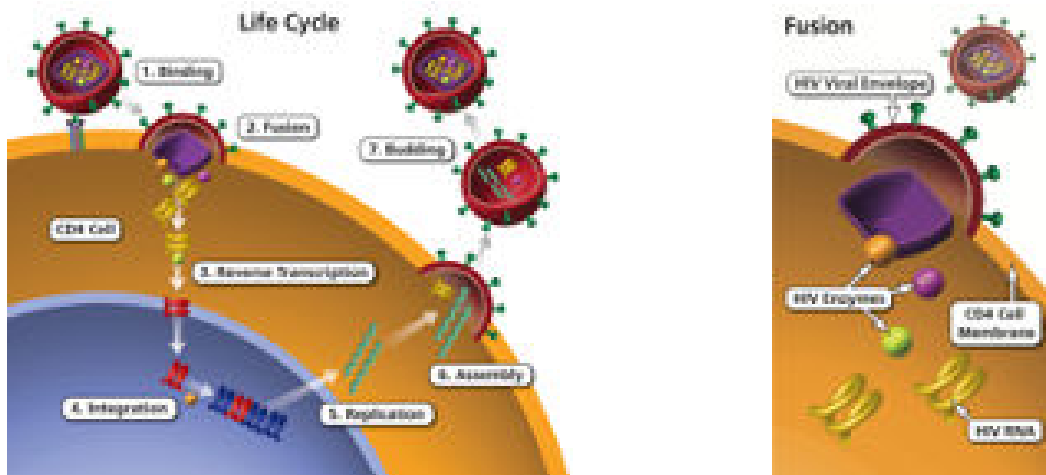
## Formulation

Synonym(s): Drug Formulation

The composition of a drug product that contains the active ingredient and other inactive ingredients. Two or more drugs contained in a single dosage form, such as a capsule or tablet. An example of a fixed-dose combination (FDC) HIV drug is Atripla (a combination of efavirenz, emtricitabine, and tenofovir DF). By reducing the number of pills a person must take each day, fixed-dose combination drugs can help improve adherence to an HIV treatment regimen.

## Fusion

The second of seven steps in the HIV life cycle. After HIV attaches itself to a host CD4 cell, the HIV viral envelope fuses with the CD4 cell membrane. Fusion allows HIV to enter the CD4 cell. Once inside the CD4 cell, the virus releases HIV RNA and HIV enzymes, such as reverse transcriptase and integrase.



## Fusion Inhibitor

Antiretroviral (ARV) HIV drug class. A fusion inhibitor blocks the HIV envelope from merging with the host CD4 cell membrane (fusion). This prevents HIV from entering the CD4 cell.



## Genetic Engineering

Using biotechnological techniques to modify an organism by changing its genetic material (DNA or RNA). For example, bacteria can be genetically engineered to produce insulin, which can then be used to treat diabetes.

## Genotypic Antiretroviral Resistance Test (GART)

Synonym(s): Genotypic Assay

Synonym(s): A type of resistance test that detects drug-resistant mutations in HIV genes. Resistance testing is used to guide selection of an HIV regimen when initiating or changing antiretroviral therapy (ART).

## Gonorrhea

Synonym(s): The Clap

A sexually transmitted disease caused by the bacterium *Neisseria gonorrhoeae*. A mother with gonorrhea may also pass the infection to her child during delivery. Gonorrhea often has mild or no symptoms. However, if left untreated, gonorrhea can lead to infertility, and it can spread into the bloodstream and affect the joints, heart valves, and brain. Gonorrhea increases the risk of sexual transmission of HIV.

## Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF)

A protein that stimulates white blood cells, especially granulocytes, macrophages, and cells that become platelets, to multiply and mature. A laboratory-produced version of this protein is often used to boost a low white blood cell count.

## Granulocyte-Colony Stimulating Factor (G-CSF)

A protein that stimulates neutrophils, which are a type of white blood cell, to multiply and mature. A laboratory-produced version of this protein is used to boost a low neutrophil count.

## Health Resources and Services Administration (HRSA)

The primary federal agency for improving access to health care services for people who are uninsured, isolated, or medically vulnerable. Through its HIV/AIDS bureau, the Health Resources and

Services Administration (HRSA) administers the Ryan White HIV/AIDS Program, the largest federal program focused exclusively on HIV/AIDS care.

## **Hepatitis**

Inflammation of the liver, usually from a viral infection. The most common hepatitis infections are hepatitis A, hepatitis B, and hepatitis C. Hepatitis may also be due to autoimmune disease, alcohol, medications, or toxic agents. Symptoms of hepatitis, if any, can include loss of appetite, nausea and vomiting, and jaundice. Hepatitis can lead to liver damage, liver failure, or cancer. Hepatitis is also often used to refer to the group of viral infections that affect the liver (hepatitis A, B, C, D, and E).

### **Hepatitis B Virus Infection (HBV)**

Infection with the hepatitis B virus (HBV). HBV can be transmitted through blood, semen, or other body fluids during sex or injection drug use. HBV infection progresses more rapidly in people with HBV/HIV coinfection than in people who have HBV infection alone.

### **Hepatitis C Virus Infection (HCV)**

Infection with the hepatitis C virus (HCV). HCV is usually transmitted through blood and rarely through other body fluids, such as semen. HCV infection progresses more rapidly in people with HCV/HIV coinfection than in people who have HCV infection alone.

### **Herpes Simplex Virus 1 (HSV-1) Infection**

An infection caused by herpes simplex virus 1 (HSV-1) and usually associated with lesions on the lips, mouth, and face. HSV-1 is very contagious and is transmitted by direct contact, including sexual contact, with someone who has the virus (even if lesions are not visible). Treatment cannot completely clear HSV-1 from the body, but antiviral therapy can shorten and prevent outbreaks and reduce the risk of transmission. People who have both HIV and HSV-1 have a higher risk of transmitting HIV to a partner who does not have HIV during sexual contact.

### **Herpes Simplex Virus 2 (HSV-2) Infection**

An infection caused by herpes simplex virus 2 (HSV-2) and usually associated with lesions in the genital or anal area. HSV-2 is very contagious and is transmitted by direct contact, including sexual contact, with someone who has the virus (even if lesions are not visible). Treatment cannot completely clear HSV-2 from the body, but antiviral therapy can shorten and prevent outbreaks and reduce the risk of transmission. People who have both HIV and HSV-2 have a higher risk of transmitting HIV to a partner who does not have HIV during sexual contact.

## **Herpesviruses**

Synonym(s): Human Herpesviruses

A group of viruses that use DNA as their genetic material. Herpesviruses include herpes simplex viruses 1 and 2 (HSV-1 and -2), varicella-zoster virus (VZV or HHV-3), Epstein-Barr virus (EBV or HHV-4), cytomegalovirus (CMV or HHV-5), human herpesvirus 6 and human herpesvirus 7 (HSV-6 and -7), and Kaposi sarcoma herpesvirus (KSHV or HHV-8).

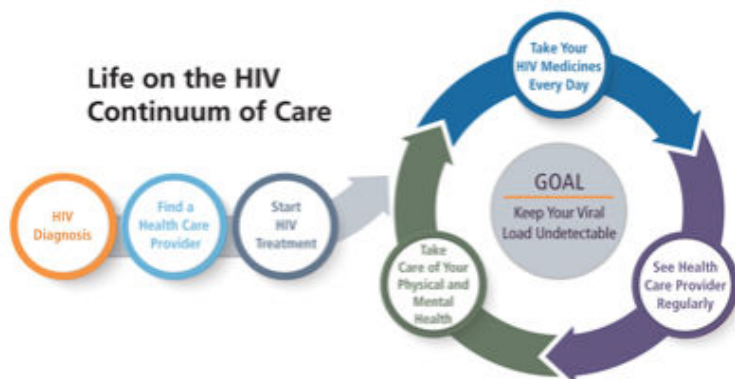
## Histoplasmosis

A lung infection caused by the fungus *Histoplasma*. Symptoms include fever, chest pain, and dry cough. In people with weakened immune systems, such as people with HIV, histoplasmosis may spread to other parts of the body, including the brain or gastrointestinal tract. Histoplasmosis (disseminated or extrapulmonary) is an AIDS-defining condition in people with HIV.

## HIV Continuum of Care

Synonym(s): HIV Care Continuum, HIV Treatment Cascade

The steps or stages of medical treatment for HIV. The continuum of care begins when someone receives an HIV diagnosis, and includes finding the right health care, starting antiretroviral therapy (ART), adhering to treatment, and staying in care. The ultimate goal of the continuum of care is virological suppression. The continuum of care can also refer to a model used by epidemiologists and other health care professionals to monitor the success of HIV-related programs and to identify and address gaps in HIV-related services. This model measures linkage to care, retention in care, and sustained viral suppression among people with HIV.



## HIV Navigation

The process of helping someone with HIV access essential HIV-related medical and social services across the continuum of care.

## HIV Prevention Trials Network (HPTN)

A federally funded, worldwide clinical trials network that develops and tests the safety and efficacy of primarily non-vaccine interventions designed to prevent the transmission of HIV.

## HIV Progression

The course of HIV infection. HIV is an infection that progresses in three stages: acute HIV infection, chronic HIV infection, and AIDS. During acute infection, HIV multiplies rapidly. As acute HIV infection progresses to chronic HIV infection, HIV multiplies less rapidly and HIV levels drop. However, as chronic HIV infection advances, HIV levels increase and the number of CD4 cells decreases. Declining CD4 cell levels indicate increasing damage to the immune system. Antiretroviral therapy (ART) can prevent HIV from destroying the immune system and advancing to AIDS.

## **HIV Vaccine Trials Network (HVTN)**

A federally funded international clinical trials network that works towards finding an effective and safe HIV vaccine. HIV Vaccine Trials Network (HVTN) conducts clinical trials on preventive HIV vaccines and educates community members on the general science of HIV/AIDS vaccines and associated research methods.

## **HIV-1**

One of the two types of HIV, the virus that causes AIDS. AIDS is the most advanced stage of HIV infection. HIV-1 is transmitted through direct contact with HIV-infected body fluids, such as blood, semen, and vaginal fluids, or from a mother who has HIV-1 to her child during pregnancy, delivery, or breastfeeding (through breast milk). HIV-1 is responsible for the majority of HIV infections worldwide. In the United States, unless otherwise noted, the term “HIV” primarily refers to HIV-1.

## **HIV-2**

One of the two types of HIV, the virus that causes AIDS. AIDS is the most advanced stage of HIV infection. HIV-2 infection is endemic to West Africa. Like HIV-1, HIV-2 is transmitted through direct contact with HIV-infected body fluids, such as blood, semen, and vaginal fluids, or from a mother who has HIV-2 to her child during pregnancy, delivery, or breastfeeding (through breast milk). HIV-2 infection generally takes longer to progress to symptomatic HIV/AIDS than HIV-1.

## **HIV-Associated Nephropathy (HIVAN)**

Kidney disease associated with HIV infection. HIV-associated nephropathy (HIVAN) usually begins with large amounts of protein in the urine (proteinuria) and progresses rapidly to total kidney failure. HIVAN is very uncommon in people whose HIV is effectively controlled by antiretroviral (ARV) drugs.

## **HIV-Associated Neurocognitive Disorders (HAND)**

A range of increasingly severe central nervous system complications associated with HIV infection. HIV-associated neurocognitive disorders (HAND) range from mild problems with memory, language, and reasoning to the more severe HIV-associated dementia (HAD).

## **HLA-B\*5701 Test**

Synonym(s): HLA-B\*5701 Testing

A test that detects the presence of HLA-B\*5701. HLA-B\*5701 is a genetic variation that is linked to hypersensitivity to the antiretroviral (ARV) drug abacavir. A person who tests positive for HLA-B\*5701 should not use abacavir or any other abacavir-containing medicine.

## **Hodgkin Lymphoma**

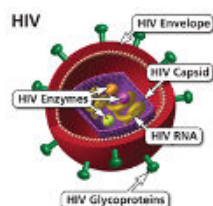
Synonym(s): Hodgkin Disease

A type of lymphoma (cancer of the lymphatic system). Hodgkin lymphoma is characterized by progressive enlargement of the lymph nodes, spleen, and general lymphoid tissue and by the presence of large, usually multinucleate cells called Reed-Sternberg cells. Hodgkin lymphoma is an AIDS-related cancer.



## Human Immunodeficiency Virus (HIV)

The virus that causes AIDS, which is the most advanced stage of HIV infection. HIV is a retrovirus that occurs as two types: HIV-1 and HIV-2. Both types are transmitted through direct contact with HIV-infected body fluids, such as blood, semen, and vaginal fluids, or from a mother who has HIV to her child during pregnancy, labor and delivery, or breastfeeding (through breast milk).



## Human Leukocyte Antigen Complex

Synonym(s): HLA Complex, Human Leukocyte Antigen System

A group of molecules found on the surface of almost every cell in the body. Human leukocyte antigens (HLAs) present protein fragments (peptides) to immune cells. If the cells recognize the peptides as foreign, the body mounts an immune response. Some diseases and drug reactions are linked to certain types of HLAs.

## Human Papillomavirus (HPV)

The virus that causes human papillomavirus (HPV) infection, the most common sexually transmitted disease. There are many kinds of HPV, including some that can cause genital warts and cancer. HPV is the most frequent cause of cervical cancer. In women with HIV, invasive cervical cancer is an AIDS-defining condition.

## Human T-Cell Lymphotropic Virus Type I (HTLV-I)

A retrovirus that infects only T lymphocytes (T cells). Human T-cell lymphotropic virus type 1 (HTLV-1) is transmitted through exposure to contaminated blood, through sexual contact, and from a mother who has the virus to her child at birth or through breastfeeding via breast milk. HTLV-1 is prevalent mostly in Japan, Africa, the Caribbean Islands, and South America. HTLV-1 can cause adult T-cell leukemia/lymphoma, a rare and aggressive cancer of the white blood cells.

## Immune Complex

Synonym(s): Antigen-Antibody Complex

An antibody bound to an antigen. Immune complexes are part of a normal immune response. However, when immune complexes accumulate in the blood, they can cause autoimmune disorders, infections, and malignancies.

## Immune Modulators

Synonym(s): Immunomodulators

Immune modulators are a class of drugs that help to activate, boost, or restore normal immune function after HIV has damaged the immune system. Researchers are investigating whether immune modulators can help change how the immune system functions as part of a strategy to treat or cure

HIV. Currently, the immune modulators used to treat HIV infection are still under investigation and have not been approved by the Food and Drug Administration (FDA) for patient use.

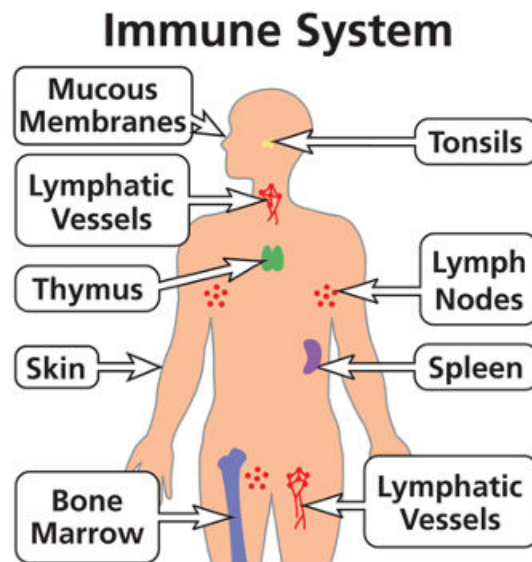
## Immune Reconstitution Inflammatory Syndrome (IRIS)

Synonym(s): Immune Reconstitution Syndrome, Immune Restoration Disease

In HIV infection, an exaggerated inflammatory reaction to a disease-causing microorganism that sometimes occurs when the immune system begins to recover following treatment with antiretroviral (ARV) drugs. Immune reconstitution inflammatory syndrome (IRIS) occurs in two forms: “unmasking” IRIS refers to the flare-up of an underlying, previously undiagnosed infection soon after antiretroviral therapy (ART) is started; “paradoxical” IRIS refers to the worsening of a previously treated infection after ART is started. IRIS can be mild or life-threatening.

## Immune System

A complex network of specialized cells, tissues, and organs that recognize and defend the body from foreign substances, primarily disease-causing microorganisms such as bacteria, viruses, parasites, and fungi. Organs and tissues of the immune system include the bone marrow, spleen, thymus, tonsils, mucous membranes, and skin. Granulocytes, macrophages, and T lymphocytes are examples of specialized cells. The lymphatic vessels of the immune system carry immune cells, which converge in lymph nodes found throughout the body. A swollen lymph node often indicates an active immune response to a foreign substance. HIV infection gradually destroys the immune system.



## Immunity

Protection against disease caused by infectious microorganisms or by other foreign substances. Immunity can be acquired through vaccination, by contracting the disease, or by transfer of antibodies produced by another person or animal. Immunity also includes the protective barriers that a person is born with, such as the skin and mucous membranes.

## **Immunocompromised**

When the body is unable to produce an adequate immune response. A person may be immunocompromised because of a disease or an infection, such as HIV, or as the result of treatment with drugs or radiation.

## **Immunodeficiency**

Inability to produce an adequate immune response because of an insufficiency or absence of antibodies, immune cells, or both. Immunodeficiency disorders can be inherited, such as severe combined immunodeficiency; they can be acquired through infection, such as with HIV; or they can result from chemotherapy.

## **Immunosuppression**

When the body's ability to mount an immune response to fight infections or disease is reduced. Immunosuppression may be caused by certain diseases, such as HIV, or by radiotherapy or chemotherapy. Immunosuppression may also be deliberately induced by drugs used to prevent rejection of transplanted organs.

## **Immunotherapy**

Synonym(s): Immunomodulatory Therapy

Use of immunologic agents such as antibodies, growth factors, and vaccines to modify (activate, enhance, or suppress) the immune system in order to treat disease. Immunotherapy is also used to diminish adverse effects caused by some cancer treatments or to prevent rejection of a transplanted organ or tissue.

## **Infectious Disease**

A disease that is caused by a microorganism, such as a bacterium, virus, or protozoan, that is not normally found in the body and is capable of causing infection. Some, but not all, infectious diseases are contagious, meaning they can spread from person to person. Other infectious diseases can spread from animals or insects to humans, but not from person to person. HIV is both infectious and contagious.

## **Informed Consent**

A communication process between a person and a health care provider or researcher to ensure that the person understands all relevant facts associated with a medical procedure or clinical trial. Before undergoing the procedure or participating in the trial, the person must sign an informed consent form that indicates understanding of the risks and benefits involved and of the risks and benefits of other options.

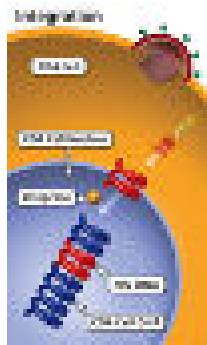
## **Innate Immunity**

Immunity that a person is born with. Innate immunity includes certain physical barriers, such as skin and mucous membranes, and fast-acting immune cells, such as natural killer cells.

## **Integrase**

An enzyme found in HIV (and other retroviruses). HIV uses integrase to insert (integrate) its viral DNA

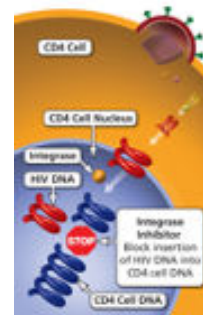
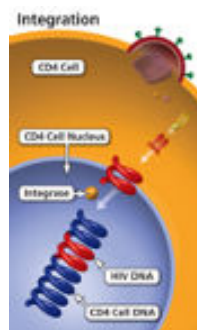
into the DNA of the host CD4 cell. Integration is a crucial step in the HIV life cycle and is blocked by a class of antiretroviral (ARV) HIV drugs called integrase strand transfer inhibitors (INSTIs).



## Integrase Strand Transfer Inhibitor (INSTI)

Synonym(s): Integrase Inhibitor

Antiretroviral (ARV) HIV drug class. Integrase strand transfer inhibitors (INSTIs) block integrase (an HIV enzyme). HIV uses integrase to insert (integrate) its viral DNA into the DNA of the host CD4 cell. Blocking integrase prevents HIV from replicating.



## Integration

The fourth of seven steps in the HIV life cycle. Once inside the host CD4 cell nucleus, HIV releases integrase, an HIV enzyme. HIV uses integrase to insert (integrate) its viral DNA into the DNA of the host cell.

## Interleukin-2 (IL-2)

A cytokine that stimulates the growth and replication of immune cells, specifically B lymphocytes (B cells) and T lymphocytes (T cells). Laboratory made interleukin-2 (IL-2) is used to treat certain cancers.

## Interleukin-7 (IL-7)

A cytokine that prompts the immune system to make more B lymphocytes (B cells) and T lymphocytes (T cells). Laboratory-made interleukin-7 (IL-7) coupled with antiretroviral therapy (ART) is being studied as a potential treatment for HIV.

## **International Maternal Pediatric Adolescent AIDS Clinical Trials (IMPAACT) Group**

A global collaboration of institutions, investigators, and other partners that conduct clinical trials on interventions to treat and prevent HIV infection and its consequences in infants, children, adolescents, and pregnant/postpartum women.

## **International Network for Strategic Initiatives in Global HIV Trials (INSIGHT)**

A clinical trials network that conducts studies worldwide in order to define optimal strategies for the management of HIV and other infectious diseases.

## **Interventional Trial**

A type of clinical trial. In interventional trials, participants are assigned to receive one or more interventions (or a placebo or no intervention) so that researchers can evaluate the effects of the interventions on biomedical or health-related outcomes.

## **Intravenous Immunoglobulin (IVIG)**

Synonym(s): Immune Serum Globulin

A solution of antibodies prepared for injection into a person's vein. Intravenous immunoglobulin (IVIG) is composed of antibodies removed from the blood of healthy donors and then pooled together and purified. IVIG is approved by the Food and Drug Administration (FDA) for use in children with HIV to reduce the risk of serious bacterial infections.

## **Investigational Drug**

Synonym(s): Experimental Drug

A drug that is approved by the Food and Drug Administration (FDA) for testing in humans for a specified condition but not approved for commercial marketing and sale.

## **Investigational New Drug Application (IND)**

A drug sponsor's request to the Food and Drug Administration (FDA) for approval to test an investigational drug in humans (Phase 1-4 clinical trials). FDA review of an investigational new drug (IND) application ensures that the drug is safe for testing in humans and that testing will not put study participants at unreasonable risk.

## **Kaposi Sarcoma (KS)**

A rare type of cancer characterized by the abnormal growth of cells that line lymph and blood vessels. Kaposi sarcoma (KS) causes red or purple patches of tissue (lesions) to grow under the skin and in the lining of the mouth, nose, and throat. Lesions may also develop in the digestive tract, liver, or lungs. KS generally occurs in people with weakened immune systems. In people with HIV, KS is an AIDS-defining condition.

## **Kaposi Sarcoma-Associated Herpesvirus (KSHV)**

Synonym(s): Human Herpesvirus 8

A type of herpesvirus that causes Kaposi sarcoma. Kaposi sarcoma associated herpesvirus (KSHV) is primarily transmitted through genital fluids and saliva. Most people with KSHV do not develop Kaposi



sarcoma. In people with weakened immune systems, including people with HIV, the viral infection is much more likely to advance to Kaposi sarcoma than in people with healthy immune systems.

### **Lactic Acidosis**

A condition in which lactic acid builds up in the blood. If left untreated, lactic acidosis can be fatal. Symptoms, if any, can include nausea, abdominal pain, muscle ache and weakness, and unintentional weight loss. Lactic acidosis may be caused by advanced HIV infection or antiretroviral (ARV) drugs.

### **Latency-Reversing Agents**

One of the main obstacles to curing HIV infection is that the virus can remain hidden and inactive (latent) inside certain cells of the immune system (such as CD4 cells) for months or even years. While HIV is in this latent state, the immune system cannot recognize the virus, and antiretroviral therapy (ART) has no effect on it. Latency-reversing agents reactivate latent HIV within CD4 cells, allowing ART and the body's immune system to attack the virus. Currently, latency-reversing agents are still under investigation and have not been approved by the Food and Drug Administration (FDA).

### **Latent HIV Reservoir**

Synonym(s): Reservoir

Resting CD4 cells (or other cells) that are infected with HIV but not actively producing HIV. Latent HIV reservoirs are established during the earliest stage of HIV infection. Although antiretroviral therapy (ART) can reduce the level of HIV in the blood to an undetectable level, latent reservoirs of HIV continue to survive. When a latently infected cell is reactivated, the cell begins to produce HIV again. Although ART can suppress HIV levels, ART cannot eliminate latent HIV reservoirs. For this reason, ART cannot cure HIV infection.

### **Lentivirus**

A subgroup of retroviruses, which includes HIV.

### **Life Cycle**

Synonym(s): Replication Cycle

The series of steps that HIV follows to multiply in the body. The process begins when HIV encounters a CD4 cell. The seven steps in the HIV life cycle are: 1) binding; 2) fusion; 3) reverse transcription; 4) integration; 5) replication; 6) assembly; and 7) budding.

### **Linear Gingival Erythema (LGE)**

Synonym(s): HIV Gingivitis, Red-Band Gingivitis

A condition in which the edge of the gums near the teeth become red and inflamed. Linear gingival erythema is common with HIV infection.

### **Live Attenuated**

Synonym(s): Attenuated

A disease-causing virus or bacterium that is weakened in a laboratory so it cannot cause disease. Live attenuated viruses are often used as vaccines because, although weakened, they can stimulate

a strong immune response. However, because of the remote possibility that a live attenuated virus could cause disease, people with HIV should talk to their health care providers before receiving live attenuated vaccines.

### **Long-Term Nonprogressors (LTNP)**

A small group of people with HIV who do not take antiretroviral therapy (ART) and still maintain CD4 counts in the normal range indefinitely. The CD4 count is the strongest predictor of HIV progression. A CD4 count less than 200 cells/mm<sup>3</sup>; indicates that a person has AIDS. In general, the time from infection with HIV to the development of AIDS is approximately 10 to 12 years.

### **Lymphocyte**

A type of white blood cell. Most lymphocytes can be classified as T lymphocytes (T cells), B lymphocytes (B cells), or natural killer cells. Lymphocytes are found in the blood, lymph, and lymphoid tissue and help the body fight infection.

### **Lymphogranuloma Venereum (LGV)**

A chronic infection of the lymphatic system caused by three strains of the bacterium *Chlamydia trachomatis*. Lymphogranuloma venereum (LGV) is a sexually transmitted disease. Symptoms include genital or rectal ulcers. LGV may increase the risk for sexual transmission of HIV.

### **Lymphoid Interstitial Pneumonitis (LIP)**

Synonym(s): Lymphocytic Interstitial Pneumonitis, Lymphoid Interstitial Pneumonia

Inflammation and possible scarring of the tissue that surrounds the air sacs of the lungs (lung interstitium). Symptoms of lymphoid interstitial pneumonitis (LIP) include fever, cough, and difficulty breathing (dyspnea). LIP is associated with autoimmune diseases, lymphoproliferative disorders, and certain viral infections, such as HIV or Epstein-Barr virus. LIP is an AIDS-defining condition in children with HIV who are less than 13 years old.

### **Lymphopenia**

Lower-than-normal number of lymphocytes (a type of white blood cell) in the blood.

### **Maintenance Therapy**

Synonym(s): Chronic Maintenance Therapy, Secondary Prophylaxis

Ongoing use of or addition of a drug(s) or other treatment to help a primary treatment succeed or to prevent a reoccurrence of a prior, successfully controlled disease or infection. For example, lifelong maintenance therapy with antiretroviral drugs (ARVs) can prevent HIV infection from advancing to AIDS.

### **Memory Lymphocyte**

Synonym(s): Memory Cell A type of lymphocyte.

Memory lymphocytes can recognize an antigen introduced into the body during a prior infection or vaccination. Memory lymphocytes mount a rapid and strong immune response when exposed to an antigen for a second time. Both T lymphocytes (T cells) and B lymphocytes (B cells) can become memory cells.



## **Mixed-Tropic HIV**

A strain of HIV that includes both CCR5-tropic and CXCR4-tropic virus. To enter a host CD4 cell, HIV must first attach to a CD4 receptor, then attach to either a CCR5 or CXCR4 coreceptor, and finally fuse its membrane with the CD4 cell membrane.

## **MSM**

Acronym for men who have sex with men.

## **MSMW**

Acronym for men who have sex with men and women.

## **Mycobacterium Avium Complex (MAC) Infection**

An infection caused by a group of bacteria called Mycobacterium avium complex (MAC). MAC includes Mycobacterium avium, Mycobacterium intracellulare, and other similar mycobacteria species. MAC bacteria can be found in drinking water, dirt, and household dust. MAC infection usually starts in the lungs and intestines, but can spread throughout the body (disseminated). Symptoms of disseminated MAC infection include fever, night sweats, weight loss, abdominal pain, fatigue, and diarrhea. Most people with healthy immune systems are not affected by the bacteria. In people with HIV, MAC infection that is outside of the lungs (extrapulmonary) or that has disseminated is an AIDS-defining condition.

## **National Cancer Institute (NCI)**

The lead federal agency responsible for cancer-related research and training to improve cancer prevention, detection, diagnosis, and survivorship. This role includes support for National Cancer Institute (NCI)-Designated Cancer Centers and for clinical trials studying new and more effective ways to detect and treat cancer. NCI also manages a broad range of information dissemination activities.

## **National Center for Complementary and Integrative Health (NCCIH)**

The primary federal agency for scientific research on the diverse medical and health care systems, practices, and products that are not generally considered part of conventional (Western) medicine.

## **National Institute of Allergy and Infectious Diseases (NIAID)**

A federal agency that conducts and supports basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases. The Institute's areas of study include HIV/AIDS; other infectious diseases, such as influenza and tuberculosis (TB); and allergy, immunology, and transplantation.

## **National Institutes of Health (NIH)**

A federal agency that is the largest biomedical research agency in the world. The National Institutes of Health (NIH) is made up of several Institutes and Centers, each with a specific research focus, such as a particular disease or body system.

## **National Library of Medicine (NLM)**

A federal institute that serves as the world's largest medical library and is the creator of PubMed, MEDLINE, and MedlinePlus. The National Library of Medicine (NLM) collects materials in all areas of biomedicine and health care. NLM makes its resources available around the world, primarily through its electronic information services.

## **Natural Killer (NK) Cell**

A type of lymphocyte. Natural killer (NK) cells contain enzymes that can kill other cells, especially tumor cells and cells infected by viruses.

## **NeuroAIDS**

A group of neurological disorders caused primarily by HIV damage to the central and peripheral nervous systems. Examples of neuroAIDS disorders include vacuolar myelopathy, sensory neuropathy, and AIDS dementia.

## **New Drug Application (NDA)**

A drug sponsor's request to the Food and Drug Administration (FDA) for approval to sell and market a new drug in the United States. A new drug application (NDA) includes enough information for the FDA to determine whether the new drug is safe and effective; whether the drug's benefits outweigh its risks; whether the proposed drug label (package insert) is appropriate; and whether the drug manufacturing standards are adequate. Information included in a NDA is based on laboratory and animal preclinical studies and testing in humans (Phase 1-4 clinical trials).

## **NNRTI-Sparing Regimen**

Combination antiretroviral therapy (ART) that does not include antiretroviral (ARV) drugs from the non-nucleoside reverse transcriptase inhibitor (NNRTI) drug class. NNRTIs may be excluded from an HIV treatment regimen to avoid certain side effects associated with this drug class, or to prevent the development of drug resistance to NNRTIs so that a person with HIV can still use these drugs in future treatment regimens.

## **Non-Hodgkin Lymphoma (NHL)**

A large group of lymphomas (cancers of the lymphatic system). The many types of non-Hodgkin lymphoma (NHL) are classified according to how fast the cancer spreads. Although the symptoms of NHLs vary, they often include swollen lymph nodes, fever, and weight loss. Certain types of NHLs, such as Burkitt lymphoma and immunoblastic lymphoma, are AIDS-defining cancers in people with HIV.

## **Non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI)**

Synonym(s): Non-Nucleoside Analogue Reverse Transcriptase Inhibitor

Antiretroviral (ARV) HIV drug class. Non-nucleoside reverse transcriptase inhibitors (NNRTIs) bind to and block HIV reverse transcriptase (an HIV enzyme). HIV uses reverse transcriptase to convert its RNA into DNA (reverse transcription). Blocking reverse transcriptase and reverse transcription prevents HIV from replicating.

## **Non-Occupational Post-Exposure Prophylaxis (nPEP)**

Short-term treatment started as soon as possible after high-risk nonoccupational exposure to an infectious agent, such as HIV, hepatitis B virus (HBV), or hepatitis C virus (HCV). Non-occupational exposure refers to exposure to an infectious agent that occurs outside of one's work, for example during sex or when people share needles to inject drugs. The purpose of non-occupational post-exposure prophylaxis (nPEP) is to reduce the risk of infection.

## **Nonreactive Test Result**

Synonym(s): Negative Test Result

A nonreactive test result indicates that signs of the condition being tested for are not present.

## **NRTI-Sparing Regimen**

Combination antiretroviral therapy (ART) that does not include antiretroviral (ARV) drugs from the nucleoside reverse transcriptase inhibitor (NRTI) drug class. NRTIs may be excluded from an HIV treatment regimen to avoid certain side effects associated with this drug class, or to prevent the development of drug resistance to NRTIs so that a person with HIV can still use these drugs in future treatment regimens.

## **Nucleic Acid Test (NAT)**

Synonym(s): Nucleic Acid Amplification Test

Any one of various laboratory tests used to detect the genetic material of a microorganism, such as HIV, in the blood. The viral load (HIV RNA) test is a type of nucleic acid test (NAT).

## **Nucleoside**

Precursor to a nucleotide. The body converts nucleosides into nucleotides, which are then used to make nucleic acids.

## **Nucleoside Reverse Transcriptase Inhibitor (NRTI)**

Synonym(s): Nucleoside Analogue Reverse Transcriptase Inhibitor

Antiretroviral (ARV) HIV drug class. Nucleoside reverse transcriptase inhibitors (NRTIs) block reverse transcriptase (an HIV enzyme). HIV uses reverse transcriptase to convert its RNA into DNA (reverse transcription). Blocking reverse transcriptase and reverse transcription prevents HIV from replicating.

## **Nucleotide Reverse Transcriptase Inhibitor (NtRTI)**

Synonym(s): Nucleotide Analogue Reverse Transcriptase Inhibitor

A type of antiretroviral (ARV) HIV drug. Nucleotide reverse transcriptase inhibitors (NtRTIs) interfere with the HIV life cycle in the same way as NRTIs. Both block reverse transcription. NtRTIs are included in the NRTI drug class.

## **Occupational Post-Exposure Prophylaxis (oPEP)**

Short-term treatment started as soon as possible after high-risk occupational exposure to an infectious agent, such as HIV, hepatitis B virus (HBV), or hepatitis C virus (HCV). An example of a high-risk occupational exposure is exposure to an infectious agent as the result of a needlestick





injury in a health care setting. The purpose of occupational post-exposure prophylaxis (oPEP) is to reduce the risk of infection.

### **Office of AIDS Research (OAR)**

The office of the National Institutes of Health (NIH) that coordinates the scientific, budgetary, legislative, and policy elements of the NIH HIV/AIDS research program.

### **Office of Minority Health (OMH)**

A federal office whose primary responsibility is to improve the health of racial and ethnic minority populations, including African Americans, Hispanic Americans, American Indians, Alaskan Natives, and Pacific Islanders. The Office of Minority Health (OMH) develops or advances policies, programs, and practices that address health, social, economic, environmental, and other factors that impact the health of minority populations, including those specifically affected by HIV/AIDS.

### **Opportunistic Infection (OI)**

An infection that occurs more frequently or is more severe in people with weakened immune systems, such as people with HIV or people receiving chemotherapy, than in people with healthy immune systems.

### **Optimized Background Therapy (OBT)**

When a new drug is added to a failing HIV regimen, the other drugs in the regimen (the “background therapy”) may also be changed. Any changes are based on a person’s resistance test results and treatment history. Optimized background therapy gives a new HIV regimen (or an experimental HIV drug being studied in a clinical trial) the best chance of succeeding.

### **p24**

A major protein contained in HIV’s viral core.

### **Passive Immunity**

Immunity that develops after a person receives immune system components, most commonly antibodies, from another person. Passive immunity can occur naturally, such as when an infant receives a mother’s antibodies through the placenta or breast milk, or artificially, such as when a person receives antibodies in the form of an injection (gamma globulin injection). Passive immunity provides immediate protection against an antigen, but does not provide long-lasting protection.

### **Passive Immunotherapy**

A type of immunotherapy in which donated or laboratory-made immune system components or cellular proteins are given to a person to help the person fight an infection or disease. Passive immunotherapy using antibodies is often used in cancer treatment.

### **Pediatric AIDS Clinical Trials Group (PACTG)**

A large clinical trials network that evaluates treatments for children and adolescents with HIV and that develops new therapeutic approaches for preventing mother-to-child transmission of HIV. Originally an independent network, Pediatric AIDS Clinical Trials Group (PACTG) investigators are now merged with the International Maternal Pediatric Adolescent AIDS Clinical Trials (IMPAACT) Group.

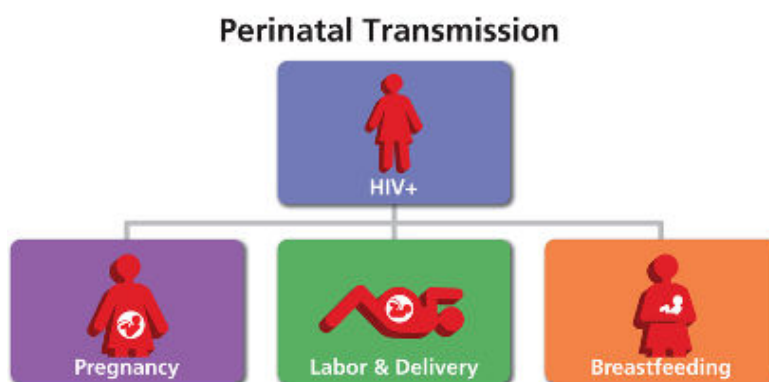
## Pediatric AIDS Clinical Trials Group 076 (PACTG 076)

A federally funded study that determined that the risk of mother-to-child transmission (MTCT) of HIV could be reduced by nearly 70% if the antiretroviral (ARV) drug zidovudine was given to a woman during pregnancy and labor and delivery and to the newborn. The Pediatric AIDS Clinical Trials Group 076 (PACTG 076) study contributed greatly to preventing MTCT of HIV.

## Perinatal Transmission

Synonym(s): Maternal-Child Transmission, Mother-to-Child Transmission (MTCT), Vertical Transmission

When a mother with HIV passes the virus to her infant during pregnancy, labor and delivery, or breastfeeding (through breast milk). Antiretroviral (ARV) drugs are given to women with HIV during pregnancy and to their infants after birth to reduce the risk of mother-to-child transmission (MTCT) of HIV. ARV drugs also protect the health of women with HIV during pregnancy and after delivery.



## Peripheral Blood Mononuclear Cell (PBMC)

A type of white blood cell that contains one nucleus, such as a lymphocyte or macrophage.

## Persistent Generalized Lymphadenopathy (PGL)

Enlarged lymph nodes (lymphadenopathy) in at least two areas of the body for at least 3 months. In people with HIV, persistent generalized lymphadenopathy (PGL) is associated with early stages of HIV infection and with certain opportunistic infections.

## Pharmacokinetic Enhancers

Synonym(s): CYP3A Inhibitors A drug class.

A pharmacokinetic enhancer is used to boost the effectiveness of another drug. When the two drugs are given together, the pharmacokinetic enhancer interferes with the breakdown of the other drug, which allows the drug to remain in the body longer at a higher concentration. Pharmacokinetic enhancers are included in some HIV treatment regimens.

## Phase 1 Trial

The first step in testing an experimental drug (or other treatment) in humans. Phase 1 trials evaluate the drug's safety and toxicity at different dose levels and determine drug pharmacokinetics. Because little is known about the possible risks and benefits of the drug being tested, Phase 1 trials usually include only a small number of participants (approximately 20 to 80). Testing of other biomedical interventions, such as diagnostic tests or medical devices, also begins with Phase 1 trials.

## Phase 2 Trial

The second step in testing an experimental drug (or other treatment) in humans. Typically, Phase 2 trials are done only if Phase 1 trials have shown that the drug is safe, but sometimes Phase 1 and Phase 2 trials are combined. Phase 2 trials are designed to evaluate the drug's effectiveness in people with the disease or condition being studied and to determine the common short-term adverse effects and risks associated with the drug. Phase 2 trials involve more participants (often several hundred) and typically last longer than Phase 1 trials.

## Phase 3 Trial

The third step in testing an experimental drug (or other treatment) in humans. Phase 3 trials are conducted to confirm and expand on safety and effectiveness results from Phase 1 and 2 trials, to compare the drug to standard therapies for the disease or condition being studied, and to evaluate the overall risks and benefits of the drug. This trial phase recruits a large group of people with the disease or condition, usually ranging from 1,000 to 3,000 participants. The Food and Drug Administration (FDA) reviews results from Phase 3 trials when considering a drug for approval.

## Phase 4 Trial

Testing in humans that occurs after a drug (or other treatment) has already been approved by the Food and Drug Administration (FDA) and is being marketed for sale. Phase 4 trials are conducted to determine long-term safety and effectiveness and to identify adverse effects that may not have been apparent in prior trials. Phase 4 trials usually include thousands of participants.

## Phenotypic Antiretroviral Resistance Test

Synonym(s): Phenotypic Assay

A type of resistance test that measures the extent to which a person's strain of HIV will multiply in different concentrations of antiretroviral (ARV) drugs. Resistance testing is used to guide selection of an HIV regimen when initiating or changing antiretroviral therapy (ART).

## PI-Sparing Regimen

Combination antiretroviral therapy (ART) that does not include antiretroviral (ARV) drugs from the protease inhibitor (PI) drug class. PIs may be excluded from an HIV treatment regimen to avoid certain side effects associated with this drug class, or to prevent the development of drug resistance to PIs so that a person with HIV can still use these drugs in future treatment regimens.

## Pneumocystis Jirovecii Pneumonia

Synonym(s): PCP, Pneumocystis Carinii Pneumonia, Pneumocystis Pneumonia, Pneumocystosis

Formerly known as *Pneumocystis carinii* pneumonia. A lung infection caused by the fungus *Pneumocystis jirovecii*. Symptoms include a cough (often mild and dry), fever, and shortness of breath. The fungus is common in the environment and does not cause illness in healthy people. Most people who get *Pneumocystis jirovecii* pneumonia have weakened immune systems due to HIV/AIDS, cancer treatments, or organ transplants. In people with HIV, *Pneumocystis jirovecii* pneumonia is an AIDS-defining condition.

## **Pneumonia**

Synonym(s): Bronchopneumonia

Inflammation of the lungs, which is usually caused by a bacterial, viral, or fungal infection. People older than 65 years of age or younger than 2 years of age and people with weakened immune systems are more at risk for pneumonia. Symptoms include cough, shortness of breath, fevers, chills, chest pain, and weakness. In people with HIV, recurrent pneumonia (pneumonia that returns again and again) is considered an AIDS-defining condition.

## **Post-Attachment Inhibitor**

Post-attachment inhibitors are a class of drugs that bind to the CD4 receptor on a host CD4 cell. This blocks HIV from attaching to the CCR5 and CXCR4 coreceptors and entering the cell. Post-attachment inhibitors are part of a larger group of HIV drugs called entry inhibitors.

## **Post-Exposure Prophylaxis (PEP)**

Short-term treatment started as soon as possible after high-risk exposure to an infectious agent, such as HIV, hepatitis B virus (HBV), or hepatitis C virus (HCV). The purpose of post-exposure prophylaxis (PEP) is to reduce the risk of infection.

## **Preconception Counseling and Care**

Ongoing education, care, and treatment to improve the health of a woman before pregnancy. Preconception counseling and care involves identifying and managing conditions and behaviors that could put the woman or her child at risk. For women with HIV, this includes counseling on the risks and benefits of antiretroviral (ARV) drugs to prevent mother-to-child transmission (MTCT) of HIV and to protect the women's health. Preconception counseling may include advising a male partner with HIV on how to prevent HIV transmission to a female partner before and during pregnancy.

## **Pre-Exposure Prophylaxis (PrEP)**

An HIV prevention method for people who are HIV negative and at high risk of HIV infection. Pre-exposure prophylaxis (PrEP) involves taking a specific combination of HIV medicines daily. PrEP is even more effective when it is combined with condoms and other prevention tools.

## **PrEP Navigation**

The process of connecting people who want to use HIV medicines to protect themselves from HIV infection to pre-exposure prophylaxis (PrEP)-related counseling or treatment.

## **President's Emergency Plan for AIDS Relief (PEPFAR)**

The U.S. government global initiative to combat the HIV/AIDS epidemic. The President's Emergency Plan for AIDS Relief (PEPFAR) works with governmental and non-governmental partners worldwide to support integrated HIV prevention, treatment, and care programs. PEPFAR priorities include leveraging data and partnerships to expand and sustain the global response to HIV with a focus on key populations, including gay men and other men who have sex with men, adolescent girls and women, and children.

## Presumptive

Based on a reasonable assumption. In non-breastfed infants born to mothers with HIV, presumptive exclusion of HIV infection is based on two or more negative virologic tests, one at age 14 days or older and the other at age 1 month or older; or one negative virologic test at age 8 weeks or older; or one negative HIV antibody test at age 6 months or older. Additional testing is necessary to definitively exclude HIV infection.

## Prevention of Perinatal Transmission

Synonym(s): Prevention of Mother-to-Child Transmission (PMTCT)

Strategies used to prevent the spread (transmission) of HIV from a mother to her child during pregnancy, labor and delivery, or by breastfeeding (through breast milk). Strategies include antiretroviral (ARV) prophylaxis for the mother during pregnancy and labor and delivery, scheduled cesarean delivery, ARV prophylaxis for the newborn infant, and avoidance of breastfeeding.

## Preventive HIV Vaccine

Synonym(s): HIV Preventive Vaccine

A vaccine to prevent HIV infection in people who do not have HIV. To date, no preventive HIV vaccine exists, but research is underway.

## Primary Prophylaxis

Synonym(s): Primary Prevention

Drugs or other forms of treatment used to prevent the development of a disease in a person who is at risk for but with no prior history of the disease. For example, primary prophylaxis is used to prevent people with advanced HIV infection from developing opportunistic infections, such as toxoplasmosis.

## Progressive Multifocal Leukoencephalopathy (PML)

A rare disorder of the central nervous system caused by the John Cunningham virus (JCV). Most people are infected with JCV by 10 years of age; however, only people with weakened immune systems develop progressive multifocal leukoencephalopathy (PML). PML is primarily characterized by damage to myelin in the brain. Symptoms of PML vary and can include loss of coordination, loss of speech, vision problems, and progressive weakness in the arms and legs. In people with HIV, PML is an AIDS-defining condition.

## Protease

A type of enzyme that breaks down proteins into smaller proteins or smaller protein units, such as peptides or amino acids. HIV protease cuts up large precursor proteins into smaller proteins. These smaller proteins combine with HIV's genetic material to form a new HIV virus. Protease inhibitors (PIs) prevent HIV from replicating by blocking protease.

## Protease Inhibitor (PI)

Antiretroviral (ARV) HIV drug class. Protease inhibitors (PIs) block protease (an HIV enzyme). By blocking protease, PIs prevent new (immature) HIV from becoming a mature virus that can infect other CD4 cells.

## Provirus

Synonym(s): Proviral DNA

An inactive viral form that has been integrated into the genes of a host cell. For example, when HIV enters a host CD4 cell, HIV RNA is first changed to HIV DNA (provirus). The HIV provirus then gets inserted into the DNA of the CD4 cell. When the CD4 cell replicates, the HIV provirus is passed from one cell generation to the next, ensuring ongoing replication of HIV.

## QD

Synonym(s): q.d., qd

An abbreviation meaning “once a day.” The abbreviation is commonly used in drug dosing instructions.

## QID

Synonym(s): q.i.d., qid

An abbreviation meaning “four times a day.” The abbreviation is commonly used in drug dosing instructions.

## Qualitative Transcription-Mediated Amplification Assay

A type of viral load test. Viral load tests are used to diagnose acute HIV infection, guide treatment choices, and monitor response to antiretroviral therapy (ART).

## Quantitative Branched DNA Assay (bDNA)

A type of viral load test. Viral load tests are used to diagnose acute HIV infection, guide treatment choices, and monitor response to antiretroviral therapy (ART).

## Quasispecies

A group (sometimes called a “swarm”) of mutant viruses that develops as a virus replicates within a host. The viruses grouped in a quasispecies are related by a similar mutation(s). During HIV infection, HIV can mutate into multiple quasispecies, which may reduce the immune system’s ability to control HIV infection. Antiretroviral therapy (ART) started in the early stages of HIV infection can control HIV replication and the development of quasispecies.


## R5-Tropic Virus

Synonym(s): Macrophage-Tropic Virus, M-Tropic Virus

A strain of HIV that enters and infects a host CD4 cell by attaching to the CCR5 coreceptor on the CD4 cell. To enter a CD4 cell, HIV must first attach to a CD4 receptor, then attach to either the CCR5 or CXCR4 coreceptor, and finally fuse its membrane with the CD4 cell membrane. HIV is usually R5-tropic (uses CCR5) during the early stages of infection, but the virus may later switch to using either only CXCR4 (X4-tropic) or both CCR5 and CXCR4 (dual-tropic). An HIV drug called a CCR5 inhibitor blocks HIV from attaching to the CCR5 coreceptor, which prevents HIV entry into the CD4 cell.

## Randomized Trial

A type of clinical trial in which participants are assigned by chance (randomized) to the arms of the trial (experimental or control arms). Randomization eliminates any potential preference in assigning



participants to the arms of the trial and increases the likelihood that the trial arms are comparable overall in terms of general characteristics, such as age or gender, and other factors that might affect the disease or condition being studied. Having arms that are as similar as possible at the start of a clinical trial allows researchers to conclude with a certain level of confidence whether one intervention is better than another at the end of the trial.

## **Rapid Test**

A type of HIV antibody test used to screen for HIV infection. A rapid HIV antibody test can detect HIV antibodies in blood or oral fluid in less than 30 minutes. There is also a rapid antigen/antibody test available. A positive rapid HIV antibody test must be confirmed by a second test for a person to be definitively diagnosed with HIV infection.

## **Reactive Test Result**

Synonym(s): Positive Test Result

A reactive test result indicates that signs of the condition being tested for are present.

## **Receptor**

A protein that is located inside or on the surface of a cell and that binds to a specific substance, such as a hormone, antigen, virus, or neurotransmitter. The binding of the substance to the cell receptor causes a change in the activity of the cell. In order to enter a host cell, HIV must first bind to receptors on the host cell.

## **Recombinant**

DNA produced in a laboratory by joining segments of DNA from different sources. Recombinant can also describe proteins, cells, or organisms made by genetic engineering.

## **Regimen Simplification**

Synonym(s): Treatment Simplification

Making changes to an HIV treatment regimen to make medication adherence easier. Simplifying an HIV regimen can include reducing the number of antiretroviral (ARV) drugs in the regimen or changing to a combination ARV drug that provides a one-pill, once-daily complete regimen. Other changes can include switching to ARV drugs that cause fewer adverse effects or to ARV drugs that can be taken without food. Benefits of regimen simplification include long-term medication adherence, reduced risk of treatment failure, and improved quality of life.

## **Regulatory T Lymphocyte**

Synonym(s): Regulatory T Cell, Suppressor T Cell, Suppressor T Lymphocyte

A type of lymphocyte. Regulatory T lymphocytes (regulatory T cells) prevent the immune system from becoming over-active during an immune response and from attacking normal cells.

## **Replication**

Synonym(s): Transcription and Translation

The fifth of seven steps in the HIV life cycle. Once HIV is integrated into the host CD4 cell DNA, the



virus begins to use the machinery of the CD4 cell to create long chains of HIV proteins. The protein chains are the building blocks for more HIV.

## **Resistance Testing**

Synonym(s): Resistance Assay

Laboratory testing to identify which, if any, antiretroviral (ARV) drugs will not be effective against a person's specific strain of HIV. Resistance testing is done using a sample of blood. There are two types of resistance testing: genotypic and phenotypic. Resistance testing is used to guide selection of an HIV regimen when initiating or changing antiretroviral therapy (ART).

## **Retrovirus**

A type of virus that uses RNA as its genetic material. After infecting a cell, a retrovirus uses an enzyme called reverse transcriptase to convert its RNA into DNA. The retrovirus then integrates its viral DNA into the DNA of the host cell, which allows the retrovirus to replicate. HIV, the virus that causes AIDS, is a retrovirus.

## **Rev Inhibitor**

Rev is the name of an HIV protein that helps to transport HIV's genetic information within an infected immune cell. HIV uses the Rev protein to replicate and produce new virus. Rev inhibitors are drugs that interfere with the Rev protein's activity to prevent HIV from multiplying in the body. Currently, Rev inhibitors are still under investigation and have not been approved by the Food and Drug Administration (FDA).

## **Reverse Transcriptase (RT)**

An enzyme found in HIV (and other retroviruses). HIV uses reverse transcriptase (RT) to convert its RNA into viral DNA, a process called reverse transcription. Nonnucleoside reverse transcriptase inhibitors (NNRTIs) prevent HIV from replicating by blocking RT.

## **Reverse Transcriptase Polymerase Chain Reaction-Based Assay (RT-PCR)**

A type of viral load test. Viral load tests are used to diagnose acute HIV infection, guide treatment choices, and monitor response to antiretroviral therapy (ART).

## **Reverse Transcription**

The third of seven steps in the HIV life cycle. Once inside a CD4 cell, HIV releases and uses reverse transcriptase (an HIV enzyme) to convert its genetic material—HIV RNA—into HIV DNA. The conversion of HIV RNA to HIV DNA allows HIV to enter the CD4 cell nucleus and combine with the cell's genetic material—cell DNA.

## **Ribonucleic Acid (RNA)**

One of two types of genetic material found in all living cells and many viruses. (The other type of genetic material is DNA.) There are several types of ribonucleic acid (RNA). RNA plays important roles in protein synthesis and other cell activities.

## **Ryan White HIV/AIDS Program**

Synonym(s): CARE Act

The largest federally funded program providing HIV-related services to low-income, uninsured, and underinsured people with HIV/AIDS. The program's services are available in all 50 states, the District of Columbia, and U.S. territories.

## **Salmonella Septicemia**

A life-threatening Salmonella infection that has spread to the bloodstream. Salmonella septicemia can be caused by any of the Salmonella bacteria, which are found in contaminated food and water. The infection is systemic and affects virtually every organ system. The most common symptom is a fever that comes and goes. In people with HIV, recurrent Salmonella septicemia is an AIDS-defining condition.

## **Salvage Therapy**

Synonym(s): Rescue Therapy

Therapy given when the standard treatment for a disease or condition is no longer effective and when treatment options are limited. People with HIV who have experienced toxicity and/or developed resistance to many HIV drugs receive salvage therapy.

## **Secondary Transmission**

Synonym(s): Horizontal Transmission

The transfer (spread) of HIV that mainly occurs during sex or needle sharing as the result of contact with the semen, vaginal fluid, or blood of a person with HIV. (HIV transmission from mother to child during pregnancy, labor and delivery, or breastfeeding is called vertical transmission.)

## **Self-Administered Therapy (SAT)**

A method of drug administration in which a person takes medication without being observed by a health care professional.

## **Semen**

Synonym(s): Seminal Fluid

A thick, whitish fluid that is discharged from the male penis during ejaculation. Semen contains sperm and various secretions. HIV can be transmitted through semen.

## **Sensitivity**

The probability that a medical test will detect the condition being tested for in people who actually have the condition. In other words, a sensitive test is one that produces true positive results. For example, the enzymelinked immunosorbent assay (ELISA) HIV antibody test is highly sensitive, which means the test can detect HIV in most people who have HIV. However, because the ELISA test can sometimes mistakenly recognize antibodies to other diseases as antibodies to HIV (a false positive result), another HIV test is used to confirm a positive ELISA HIV antibody test.



## Seroconversion

The transition from infection with HIV to the detectable presence of HIV antibodies in the blood. When seroconversion occurs (usually within a few weeks of infection), the result of an HIV antibody test changes from HIV negative to HIV positive.

## Serologic Test

A blood test to detect the presence of antibodies against a microorganism. A serologic test can determine whether a person has been exposed to a particular microorganism.

## Seroprevalence

The overall occurrence of a disease or condition within a defined population at one time, as measured by blood tests (serologic tests).

## Serostatus

The state of either having or not having detectable antibodies against a specific antigen, as measured by a blood test (serologic test). For example, HIV seropositive means that a person has detectable antibodies to HIV; seronegative means that a person does not have detectable HIV antibodies.

## Set Point

Synonym(s): Viral Set Point

The viral load (HIV RNA) that the body settles at within a few weeks to months after infection with HIV. Immediately after infection, HIV multiplies rapidly and a person's viral load is typically very high. After a few weeks to months, this rapid replication of HIV declines and the person's viral load drops to its set point.

## Sexual Maturity Rating (SMR)

Synonym(s): Tanner Staging

A scale used to classify the onset and progression of puberty in children and adolescents. The scale describes five stages of physical development on the basis of sex characteristics, such as pubic hair growth, development of genitalia in boys, and development of breasts in girls. Because children mature at different rates, health care providers use the sexual maturity rating (in addition to age) to determine appropriate dosing of drugs to treat HIV infection and opportunistic infections.

## Sexual Transmission

Transmission of HIV, or other sexually transmitted disease (STD), from one individual to another as the result of sexual contact.

## Sexually Transmitted Disease (STD)

Synonym(s): Sexually Transmitted Infection (STI)

An infectious disease that spreads from person to person during sexual contact. Sexually transmitted diseases, such as syphilis, trichomoniasis, and HIV infection are caused by bacteria, parasites, and viruses.

## Shock and Kill Strategy

Synonym(s): Kick and Kill Strategy, Kick-Kill Strategy, Shock-Kill Strategy

An experimental strategy to cure HIV infection that is currently under investigation. Finding a cure for HIV is challenging because the virus can remain hidden and inactive (latent) inside certain cells of the immune system (such as CD4 cells) for months or even years. While HIV is in this latent state, the immune system cannot recognize the virus, and antiretroviral therapy (ART) has no effect on it. The shock and kill strategy is a two-step process. First, drugs called latency-reversing agents are used to reactivate latent HIV hiding in immune cells (the “shock”). The reactivated cells can then be targeted and killed by the body’s immune system or anti-HIV drugs.

## Specificity

The probability that a medical test will correctly produce a negative test result for a person who does not have the condition being tested. In other words, a specific test is one that produces true negative results.

## Spermicide

A topical preparation or substance used during sexual intercourse to kill sperm. Although spermicides may prevent pregnancy, they do not protect against HIV infection or other sexually transmitted diseases. Irritation of the vagina and rectum that sometimes occurs with use of spermicides may increase the risk of sexual transmission of HIV.

## Stigma

Negative beliefs and attitudes associated with a specific situation, characteristic, condition, or person. For example, negative beliefs about HIV can lead to stigma against people living with HIV. HIV stigma can negatively affect the health and well-being of people with HIV.

## Strain

A group of organisms, such as bacteria or viruses, that belong to the same species and share certain characteristics not found in other members of the species. For example, HIV can mutate into different strains, with each strain having a different type of resistance to antiretroviral (ARV) drugs.

## Structured Treatment Interruption

Synonym(s): Drug Holiday

A planned break from treatment, during which a person stops taking medications. Structured treatment interruptions may be used to reduce toxic effects of medications, to enhance a medication’s effectiveness when restarted, or as a step towards stopping treatment altogether. Testing of an investigational HIV drug may include a structured treatment interruption to evaluate how long the drug continues to control a participant’s viral load during the treatment break. Structured interruption of HIV treatment is not recommended outside of controlled clinical trials.

## Subcutaneous (SC, Sub-Q)

Pertaining to the area beneath the layers of the skin. Some drugs are given by subcutaneous injection.

## Suboptimal Immunologic Response

After antiretroviral therapy (ART) is initiated, the failure to achieve and maintain adequate CD4 counts despite viral suppression.

## Subtype

Synonym(s): Clade A subgroup of genetically related HIV-1 viruses.

HIV-1 can be classified into four groups: M group, N group, O group, and P group. Viruses within each group can be further classified by subtype. For example, the HIV-1 M group includes the following subtypes: A1, A2, A3, A4, A6, B, C, D, F1, F2, G, H, J, and K.

## Superinfection

When a person who already has HIV acquires a second, different strain of HIV. Superinfection may cause HIV to advance more rapidly. Superinfection can also complicate treatment if the newly acquired strain of HIV is resistant to antiretroviral (ARV) drugs in the person's current HIV treatment regimen.

## Syncytium

A large cell-like structure that forms when many cells fuse together. Syncytia can form during viral infection. In some people with HIV, syncytia formation has been linked to more rapid progression of HIV infection.

## Syphilis

An infectious disease caused by the bacterium *Treponema pallidum*, which is typically transmitted through direct contact with a syphilis sore, usually during vaginal, anal, or oral sex. Syphilis can also be transmitted from a mother to her child during pregnancy. Syphilis sores (chancres) occur mainly on the genitals, anus, and rectum, but also on the lips and mouth. Genital sores caused by syphilis increase the risk of sexual transmission of HIV.

## T Lymphocyte

Synonym(s): T Cell A type of lymphocyte.

There are two major types of T lymphocytes: CD8 cells (cytotoxic T lymphocytes) and CD4 cells (helper T lymphocytes); both T cell types are essential for a healthy immune system. HIV infects and destroys CD4 cells, gradually destroying the immune system.

## Therapeutic HIV Vaccine

Synonym(s): HIV Therapeutic Vaccine

A vaccine to slow the progression of HIV infection or delay the onset of AIDS. To date, no therapeutic HIV vaccine exists, but research is underway.

## TID

Synonym(s): t.i.d., tid

An abbreviation for "three times a day." The abbreviation is commonly used in drug dosing instructions.

## **Tolerance**

The ability to tolerate a drug when given as prescribed. In other words, tolerance means benefiting from the drug without having any adverse effects that would make it impossible to continue taking the drug. Testing of an investigational HIV drug often includes evaluating participants' tolerance of the drug.

## **Toxoplasmosis**

An infection caused by the parasite *Toxoplasma gondii*. Toxoplasmosis is most commonly transmitted by contact with infected cat feces, eating contaminated meat, or drinking contaminated water. Toxoplasmosis can also be transmitted from a mother to her child during pregnancy. Symptoms, if any, include swollen lymph nodes and muscle aches that last for a month or longer. Severe toxoplasmosis can cause damage to the brain, eyes, or other organs. In people with HIV, toxoplasmosis of the brain is an AIDS-defining condition.

## **Transmission**

The transfer (spread) of a disease or infection from person to person. HIV is spread mainly by having sex or sharing injection drug equipment such as needles with someone who has HIV. HIV can also be passed from mother to child during pregnancy, labor or delivery, or breastfeeding (through breast milk). HIV medicines reduce the risk of HIV transmission.

## **Transmitted Resistance**

Synonym(s): Primary Resistance

When a person acquires a strain of HIV that is already resistant to certain antiretroviral (ARV) drugs.

## **Treatment as Prevention (TasP)**

A term that describes the reduced risk of HIV transmission that occurs when HIV medicines lower a person's viral load to undetectable levels. Treatment as prevention (TasP) reduces the risk of HIV transmission through sex or needle sharing, and from mother to child during pregnancy, birth, and breastfeeding.

## **Treatment Failure**

When an antiretroviral (ARV) regimen is unable to control HIV infection. Factors that can contribute to HIV treatment failure include drug resistance, drug toxicity, or poor adherence to antiretroviral therapy (ART).

## **Treatment Regimen**

Synonym(s): Regimen

A structured treatment plan designed to improve and maintain health. Recommended regimens for the initial treatment of HIV generally include a combination of three or more antiretroviral (ARV) drugs from at least two different HIV drug classes.

## **Treatment-Experienced**

When a person with HIV is currently taking or has previously taken antiretroviral (ARV) drugs.



## Treatment-Naive

When a person with HIV has never taken antiretroviral (ARV) drugs.

## Triple-Class Experienced

When a person with HIV has received antiretroviral (ARV) drugs from three drug classes.

## True Negative

A negative test result that correctly indicates that the condition being tested for is not present. For example, a true negative HIV test correctly indicates that a person does not have HIV.

## True Positive

A positive test result that correctly indicates that the condition being tested for is present. For example, a true positive HIV test correctly indicates that a person has HIV.

## Tuberculosis (TB)

An infection caused by the bacteria *Mycobacterium tuberculosis* and *Mycobacterium bovis*. Tuberculosis (TB) is spread when a person with an active infection (TB disease) coughs, sneezes, speaks, or sings, and then a person nearby breathes in the bacteria. TB usually affects the lungs, but it can also affect other parts of the body, such as the kidneys, spine, and brain. There are two forms of TB: latent TB infection and TB disease. In people with HIV, TB is considered an AIDS-defining condition.

## Tuberculosis Disease

The active form of tuberculosis (TB) infection. During TB disease, the bacteria multiply, become active, and make the person sick. A person with TB disease of the lungs can spread TB to others. TB disease primarily affects the lungs, but it can also affect other parts of the body, such as the kidneys, spine, and brain, and it can be fatal. Symptoms include a bad cough that lasts 3 weeks or longer, chest pain, coughing up blood or sputum, weakness, fatigue, loss of appetite, weight loss, fever, chills, and sweating at night. In people with HIV, TB disease is an AIDS-defining condition.

## Undetectable Viral Load

When the amount of HIV in the blood is too low to be detected with a viral load (HIV RNA) test. A person's viral load is considered "durably undetectable" when it remains undetectable for at least 6 months after a first undetectable test result. Antiretroviral (ARV) drugs may reduce a person's viral load to an undetectable level; however, that does not mean the person is cured. Some HIV, in the form of latent HIV reservoirs, remains inside cells and in body tissues.

## Vaccination

Synonym(s): Immunization

Giving a vaccine to stimulate a person's immune response. Vaccination can be intended either to prevent a disease (a preventive vaccine) or to treat a disease (a therapeutic vaccine).



## Vaccine

Synonym(s): Inoculation

A substance administered to trigger an immune response against a particular disease. Most vaccines are designed to prevent a person from ever having a particular disease or to only have a mild case of the disease. However, therapeutic vaccines are intended to treat specific diseases. Although researchers are testing vaccines both to prevent and treat HIV/AIDS, no HIV vaccine is currently approved for use outside of clinical trials.

## Vector

In genetically engineered vaccines, a vector is a bacterium or virus that transports antigen-coding genes into the body to provoke an immune response. (The vector itself does not provoke an immune response or cause disease.) A vector may also refer to an organism, especially an insect, that transmits disease-causing agents.

## Viral Evolution

The change in the genetic makeup of a virus population as the viruses mutate and multiply over time. HIV evolves rapidly because of its high mutation and replication rates. Antiretroviral therapy (ART) and the body's immune response can also influence HIV evolution.

## Viral Latency

When a virus is present in the body but exists in a resting (latent) state without producing more virus. A latent viral infection usually does not cause any noticeable symptoms and can last a long period of time before becoming active and causing symptoms. HIV is capable of viral latency, as seen in the reservoirs of latent HIV-infected cells that persist in a person's body despite antiretroviral therapy (ART).

## Viral Load (VL)

The amount of HIV in a sample of blood. Viral load (VL) is reported as the number of HIV RNA copies per milliliter of blood. An important goal of antiretroviral therapy (ART) is to suppress a person's VL to an undetectable level—a level too low for the virus to be detected by a VL test.

## Viral Load Test

A laboratory test that measures the amount of HIV in a blood sample. Results are reported as the number of copies of HIV RNA per milliliter of blood. Examples of viral load tests include quantitative branched DNA (bDNA), reverse transcriptase-polymerase chain reaction (RT-PCR), and qualitative transcription-mediated amplification. Viral load tests are used to diagnose acute HIV infection, guide treatment choices, and monitor response to antiretroviral therapy (ART).

## Viral Rebound

Synonym(s): Rebound

When a person on antiretroviral therapy (ART) has persistent, detectable levels of HIV in the blood after a period of undetectable levels. Causes of viral rebound can include drug resistance or poor adherence to an HIV treatment regimen.



## **Viral Suppression**

Synonym(s): Virologic Control

When antiretroviral therapy (ART) reduces a person's viral load (HIV RNA) to an undetectable level. Viral suppression does not mean a person is cured; HIV still remains in the body. If ART is discontinued, the person's viral load will likely return to a detectable level.

## **Viral Tropism**

Synonym(s): Tropism

When HIV selectively attaches to a particular coreceptor on the surface of a host CD4 cell. HIV can attach to either the CCR5 coreceptor (R5tropic) or the CXCR4 coreceptor (X4-tropic) or both (dual-tropic).

## **Viricide**

Synonym(s): Virucide

A substance that can destroy or inactivate a virus.

## **Virologic Failure**

A type of HIV treatment failure. Virologic failure occurs when antiretroviral therapy (ART) fails to suppress and sustain a person's viral load to less than 200 copies/mL. Factors that can contribute to virologic failure include drug resistance, drug toxicity, and poor adherence to ART.

## **Virus**

A microscopic infectious agent that requires a living host cell in order to replicate. Viruses often cause disease in humans, including measles, mumps, rubella, polio, influenza, and the common cold. HIV is the virus that causes AIDS.

## **Wasting Syndrome**

An involuntary loss of more than 10% of body weight (especially muscle mass), plus at least 30 days of either diarrhea or weakness and fever. HIV-associated wasting syndrome is an AIDS-defining condition.

## **Western Blot**

A laboratory test that detects antibodies for HIV in the blood. The immune system responds to HIV infection by producing HIV antibodies.

## **White Blood Cell**

Synonym(s): Leukocyte

A type of cell found in blood and lymph. White blood cells are key components of the immune system and help fight infection and disease. Examples of white blood cells include lymphocytes, neutrophils, eosinophils, macrophages, and mast cells.

## **Wild-Type Virus**

The naturally occurring, non-mutated strain of a virus. When exposed to antiretroviral (ARV) drugs, wild-type HIV can develop mutations that make the virus resistant to specific HIV drugs. Most people

with HIV are initially infected with wild-type virus; however, some people become infected with mutated, drug-resistant strains of HIV.

### **Window Period**

The time period from exposure to HIV infection to when the body produces enough HIV antibodies to be detected by standard HIV tests. The length of the window period varies depending on the test used. During the window period, a person can have a negative result on an HIV test despite having HIV.

### **Women's Interagency HIV Study (WIHS)**

Started in 1993, the Women's Interagency HIV Study (WIHS) is an ongoing federally funded study to investigate the impact of HIV infection in women. Participants in WIHS studies include women with and without HIV. Analysis of biological specimens and medical and behavioral data collected on WIHS participants has contributed to the understanding of HIV, AIDS, and the effects of antiretroviral therapy (ART) in women.

### **World Health Organization (WHO)**

The agency of the United Nations that provides global leadership on health-related matters. Responsibilities of the World Health Organization (WHO) include shaping the global health research agenda, setting health standards, promoting evidence-based policy options, providing technical support to countries, and monitoring and assessing health trends.

### **X4-Tropic Virus**

Synonym(s): T-Tropic Virus

A strain of HIV that enters and infects a host CD4 cell by attaching to the CXCR4 coreceptor on the CD4 cell. To enter a CD4 cell, HIV must first attach to a CD4 receptor, then attach to either the CCR5 or CXCR4 coreceptor, and finally fuse its membrane with the CD4 cell membrane. HIV is usually R5-tropic (uses CCR5) during the early stages of infection, but the virus may later switch to using either only CXCR4 (X4-tropic) or both CCR5 and CXCR4 (dual-tropic).

## **References**

Adapted from Clinicalinfo.HIV.gov and HIVinfo.NIH.gov. Glossary of HIV/AIDS-Related Terms, 9th Ed. Clinicalinfo.HIV.gov Website. [https://clinicalinfo.hiv.gov/sites/default/files/glossary/Glossary-English\\_HIVinfo.pdf](https://clinicalinfo.hiv.gov/sites/default/files/glossary/Glossary-English_HIVinfo.pdf). Published March 11, 2021. Updated March 17, 2021. Accessed December 27, 2023.