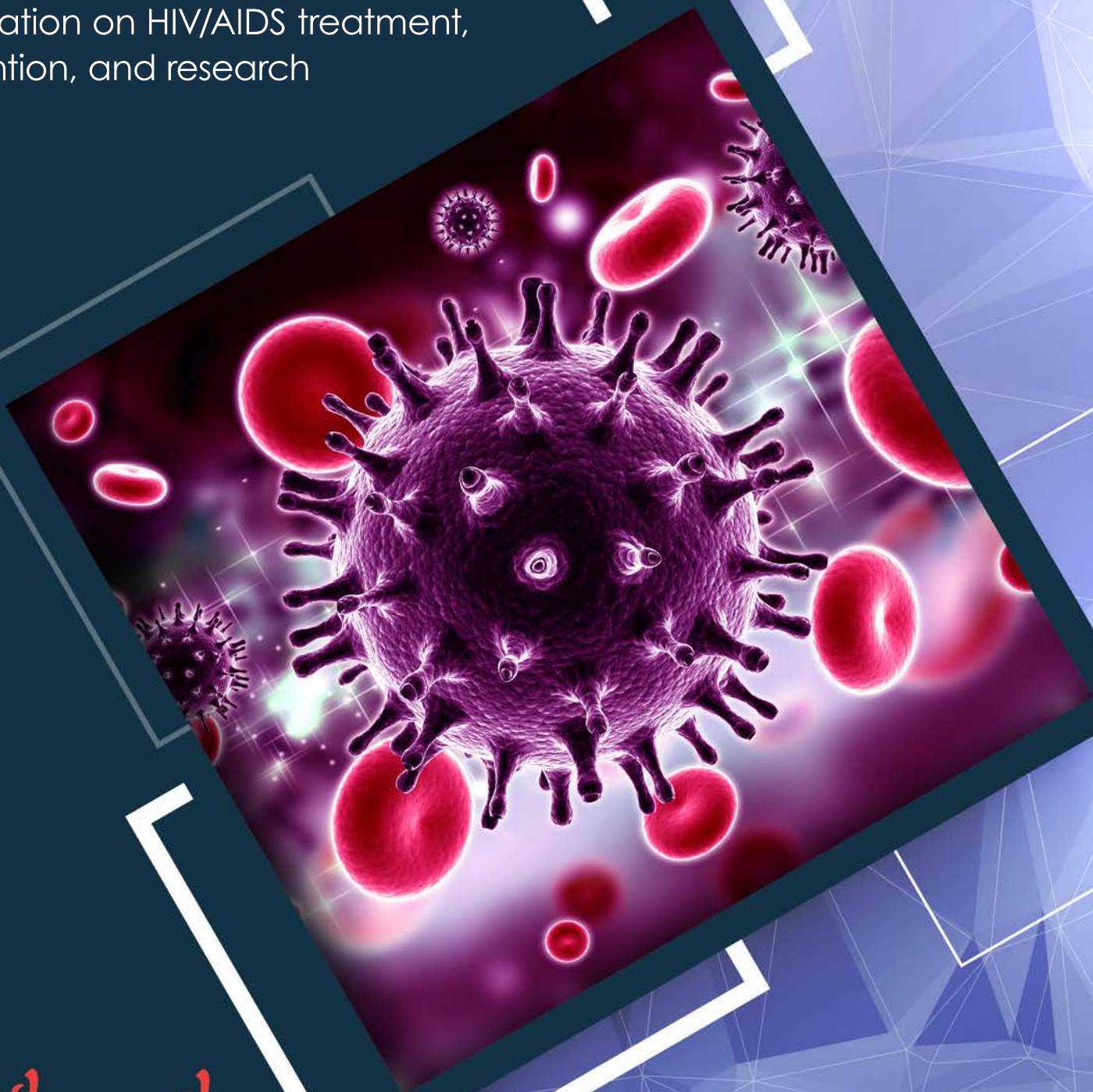



GLOSSARY

of HIV/AIDS-Related Terms

2025 • 10th EDITION

Information on HIV/AIDS treatment,
prevention, and research





**Clinicalinfo and HIVinfo are services of the
U.S. Department of Health and Human Services
and are maintained by the Office of AIDS Research,
which is part of the National Institutes of Health.**

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Introduction

The 10th Edition of the *Clinicalinfo Glossary of HIV/AIDS-Related Terms* continues to provide people with HIV, their families and friends, health care professionals, and students a roadmap to understanding HIV. Key features of the latest edition of the Glossary include the following:

- Images to illustrate several terms, including each step in the HIV life cycle, the various types of viral tropism, and the stages of clinical research
- Definitions for more than 1,000 HIV/AIDS-related terms, including new or updated definitions used to describe HIV and HIV-related opportunistic infections, as well as strategies used to treat and prevent HIV/AIDS

The terms included in the Glossary represent the vocabulary of HIV used in a variety of federal resources, including federally approved HIV/AIDS medical practice guidelines and published results from HIV-related research studies. Term definitions are based on information from government sources, including the National Institutes of Health (NIH), the NIH Office of AIDS Research, the Centers for Disease Control and Prevention, the U.S. Food and Drug Administration, and other trusted sources. In general, terms and images in the Glossary are presented in the context of HIV/AIDS. For example, the definition and image for “adherence” refers to the use of antiretroviral HIV medications.

The Glossary is also available on the [Clinicalinfo](#) website.

About Clincalinfo

Clinicalinfo, a service of the U.S. Department of Health and Human Services (HHS) that is maintained by the Office of AIDS Research (OAR), offers health care providers, researchers, people affected by HIV/AIDS, and the public easy access to federally approved HIV/AIDS medical practice guidelines and information about HIV treatment and prevention and related research.

Features of the Clinclinfo website include—

- Federally approved clinical practice guidelines for HIV/AIDS
- A drug database offering comprehensive information on HIV-related medications
- A glossary of HIV-related terms
- News and announcements related to HIV/AIDS

Information is also available in Spanish at clinicalinfo.hiv.gov/es.

Clinicalinfo is 100% federally funded and sponsored by OAR.

Clinicalinfo (English): clinicalinfo.hiv.gov

Clinicalinfo/Es (Español): clinicalinfo.hiv.gov/es

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A

Terms and Definitions

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.

Related Term(s): [AIDS Case Definition](#), [AIDS Dementia Complex](#), [Contraindication](#), [Relative Contraindication](#)

Acanthosis Nigricans

A skin disorder characterized by velvety, light brown-to-black markings that develop mainly in the folds of the body, such as in the armpits, groin, and creases of the neck. Acanthosis nigricans can be an inherited condition or can occur as the result of an endocrine disorder, cancer, or use of certain medications.

Acquired Immunity

(Figure 1)

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

Related Term(s): [Active Immunity](#), [Immunity](#), [Passive Immunity](#)

Acquired Immunodeficiency Syndrome (AIDS)

(Figure 2, Figure 3)

A disease of the immune system caused by 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/mm³ (regardless of whether the person has an AIDS-defining condition).

Related Term(s): [Acute HIV Infection](#), [AIDS Case Definition](#), [AIDS-Defining Condition](#), [Chronic HIV Infection](#), [HIV Progression](#), [Human Immunodeficiency Virus](#)

Acquired Resistance

Synonym(s): Secondary Resistance

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

Related Term(s): [Drug Resistance](#), [Transmitted Resistance](#)

Active Immunity

(Figure 4)

Immunity that develops after exposure to a disease-causing infectious microorganism or other foreign substance, such as following infection or vaccination.

Related Term(s): [Acquired Immunity](#), [Passive Immunity](#)

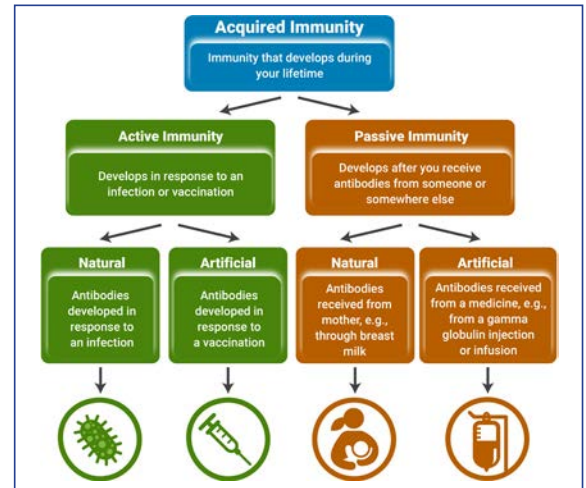


Figure 1

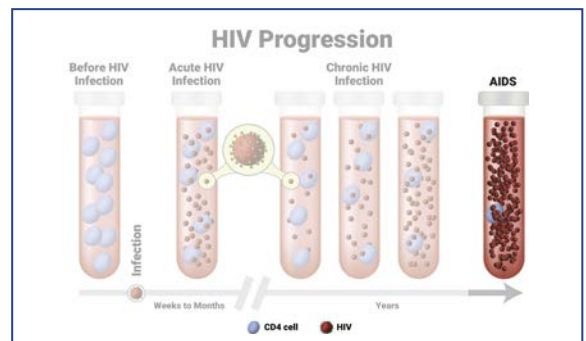


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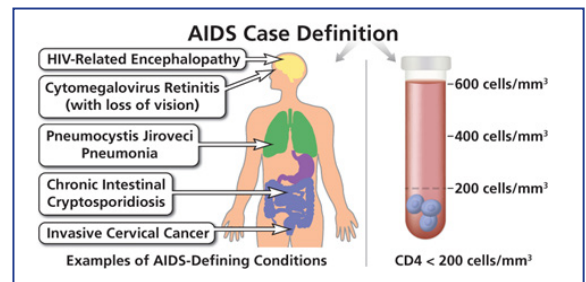


Figure 3

Acute HIV Infection

(Figure 5)

Synonym(s): Primary HIV Infection

Early stage of HIV that extends approximately 2 to 4 weeks from initial infection until the body produces enough HIV antibodies to be detected by an HIV antibody test. During acute HIV, HIV is highly infectious because the virus is multiplying rapidly. The rapid increase in HIV viral load can be detected before HIV antibodies are present.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [Chronic HIV Infection](#), [HIV Progression](#), [Viral Load](#)

Acute Inflammatory Demyelinating Polyneuropathy

SEE: [Guillain-Barré Syndrome](#)

Acute Retinal Necrosis (ARN)

An infection of the retina of the eye caused by herpes viruses, most commonly the varicella zoster virus (VZV). ARN is characterized by necrosis (tissue death) of the retina, with the presence of a high degree of inflammation in the eye. Symptoms can include eye pain, light sensitivity, eye floaters and flashes, loss of visual clarity, blurred vision, or a narrowed visual field. The condition can lead to retinal detachment, vision loss, and blindness if untreated. ARN typically occurs in people who have healthy immune systems but can also occur in people who are immunocompromised (such as people with HIV).

Related Term(s): [Herpesviruses](#), [Progressive Outer Retinal Necrosis \(PORN\)](#), [Retinal Detachment](#), [Varicella Zoster Virus \(VZV\)](#)

Adenopathy

Large or swollen lymph glands.

Related Term(s): [Lymph Nodes](#)

Adenovirus

A group of viruses that use DNA as their genetic material and commonly cause respiratory and eye infections. People with weakened immune systems, including people with HIV, have a greater risk for serious complications from an adenovirus infection than people with healthy immune systems.

Related Term(s): [Virus](#)

Adherence

(Figure 6)

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.

Related Term(s): [Drug Resistance](#), [Viral Suppression](#), [Virologic Failure](#)

Adjuvant

A substance added to a drug or vaccine to enhance its effectiveness. Also, an additional drug or other intervention that is used to bolster an initial treatment.

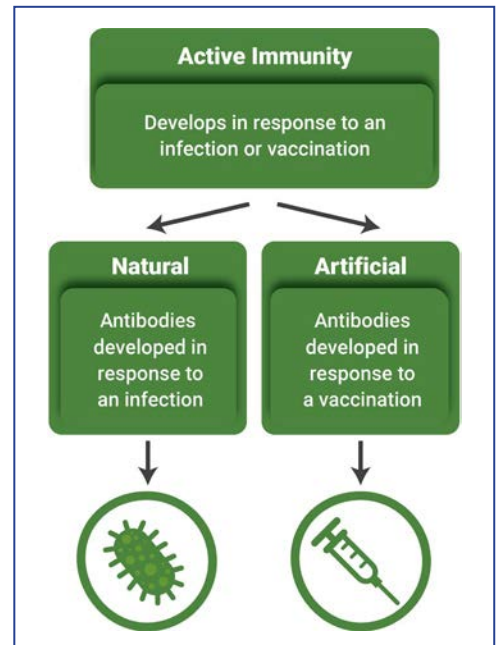


Figure 4

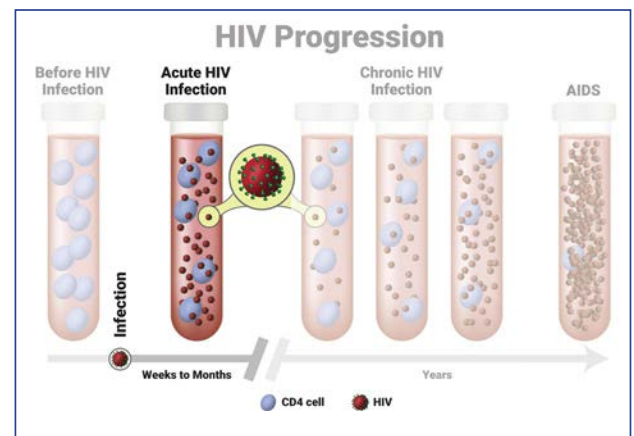


Figure 5

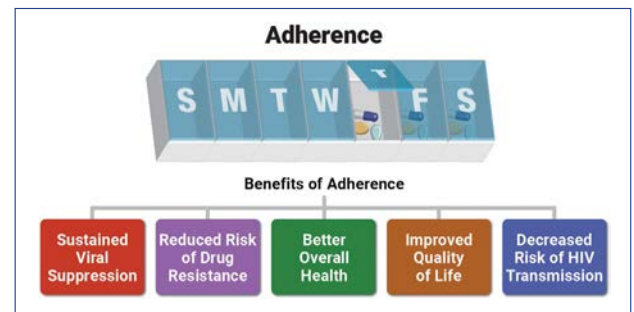


Figure 6

Adverse Drug Reaction

SEE: [Adverse Event](#)

Adverse Event (AE)

Synonym(s): Adverse Drug Reaction

Any undesirable experience associated with the use of a drug or other medical product.

Agammaglobulinemia

An inherited immune disorder that causes very low levels of immunoglobulins in the blood. Immunoglobulins are a type of antibody.

Related Term(s): [Gamma Globulin](#)

Agency for Healthcare Research and Quality (AHRQ)

A federally funded agency that produces evidence to make health care safer, higher quality, more accessible, and affordable and that works with partners to ensure that the evidence is understood and used.

AIDS Case Definition

(Figure 7)

Diagnostic criteria for AIDS established by the Centers for Disease Control and Prevention (CDC). To be diagnosed with AIDS, a person with HIV must have an AIDS-defining condition or have a CD4 count less than 200 cells/mm³ (regardless of whether the person has an AIDS-defining condition).

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [AIDS-Defining Condition](#), [CD4 Count](#), [Human Immunodeficiency Virus](#)

AIDS Clinical Trials Group (ACTG)

Formerly called Adult AIDS Clinical Trials Group (AACTG). Federally funded program that supports the largest network of HIV researchers and clinical trial units in the world. AIDS Clinical Trials Group (ACTG) develops and conducts research related to HIV and its complications.

AIDS-Defining Condition

(Figure 8)

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

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [Centers for Disease Control and Prevention](#), [Opportunistic Infection](#)

AIDS Dementia Complex (ADC)

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

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

AIDS Drug Assistance Program (ADAP)

A federally funded program that provides medications and other HIV-related services to low-income, uninsured, and underinsured people with HIV. Services of AIDS Drug Assistance Programs (ADAPs) are available in all 50 states and U.S. territories.

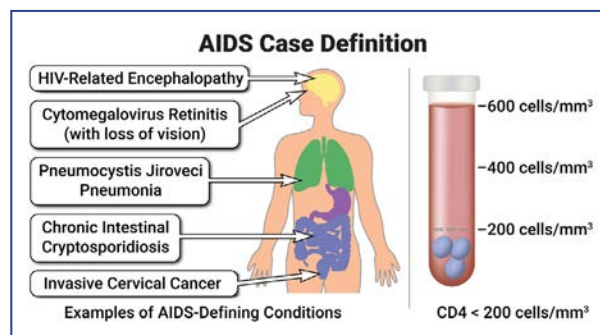


Figure 7

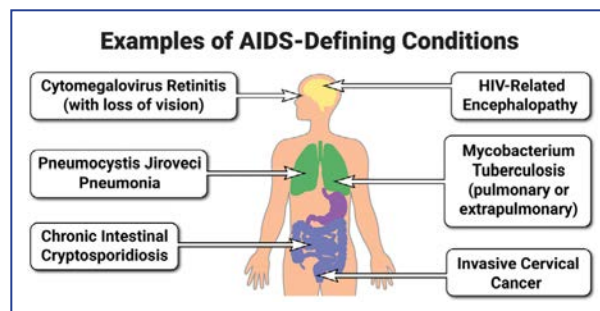


Figure 8

AIDS Education and Training Center (AETC)

A regional center that conducts education and training programs for health care providers who treat people with HIV. Training is tailored to providers who serve minoritized 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 Encephalopathy

SEE: [AIDS Dementia Complex](#)

AIDS-Related Cancer

A type of cancer that is more likely to occur in people with HIV 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.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [AIDS-Defining Condition](#)

AIDS Service Organization (ASO)

A nongovernmental organization that provides services related to the prevention and treatment of HIV.

Alanine Aminotransferase (ALT)

Synonym(s): Alanine Transaminase, Serum Glutamate Pyruvate Transaminase (SGPT)

An enzyme found primarily in the liver. Alanine aminotransferase may be measured as part of a liver function test.

Related Term(s): [Liver Function Test](#)

Alanine Transaminase

SEE: [Alanine Aminotransferase](#)

Albumin

A protein made by the liver and found in the blood. Levels of this protein may be measured as part of a liver function test.

Related Term(s): [Liver Function Test](#)

Albuminuria

SEE: [Proteinuria](#)

Alkaline Phosphatase (ALP)

An enzyme found throughout the body, especially in the liver and bone. Alkaline phosphatase may be measured as part of a liver function test.

Related Term(s): [Liver Function Test](#)

Alopecia

Loss of hair. Alopecia may be an adverse effect of some antiretroviral (ARV) drugs.

American Trypanosomiasis

SEE: [Chagas Disease](#)

Amino Acids

The chemical building blocks of proteins.

Related Term(s): [Peptide](#), [Protein](#)

Analytical Treatment Interruption (ATI)

An approach used in certain HIV clinical trials to test the effects of an investigational therapy or strategy after HIV medicines are stopped. Analytical treatment interruptions are usually used in HIV cure-related trials to determine whether an investigational HIV drug(s) or strategy can delay or prevent viral rebound after study participants stop antiretroviral therapy (ART). While undergoing an analytical treatment interruption, study participants stay under close clinical monitoring.

Related Term(s): [Structured Treatment Interruption](#)

Anemia

A blood disorder caused by a reduced number or function of red blood cells. Symptoms may include shortness of breath, fatigue, and rapid heartbeat. HIV-associated causes of anemia include progression of HIV disease, opportunistic infections, and certain HIV-related drugs.

Related Term(s): [Red Blood Cell](#)

Antacid(s)

Medicine(s) that neutralize stomach acid to treat occasional heartburn and indigestion. Many antacids are available over the counter and contain magnesium, calcium, aluminum, or sodium bicarbonate as active ingredients. Antacids frequently interact with other medicines, including certain HIV medicines, and generally should not be taken at the same time as other medicines.

Antenatal

SEE: [Prenatal](#)

Antepartum

(*Figure 9*)

The time period before childbirth. Antepartum refers to the mother.

Related Term(s): [Intrapartum](#), [Postpartum](#)

Antibiotic

A drug used to kill or suppress the growth of bacteria.

Related Term(s): [Microorganism](#)

Antibody

Synonym(s): Immunoglobulin

A protein produced by B lymphocytes (B cells) in response to an antigen. Antibodies bind to and help destroy antigens.

Related Term(s): [B Lymphocyte](#), [Humoral Immunity](#)



Figure 9

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 blood sample.

Related Term(s): [Antibody](#), [HIV-1](#), [HIV-2](#)

Anticoagulant

Synonym(s): Blood Thinner

A drug used to prevent the blood from clotting.

Antifungal

A drug used to kill or suppress the growth of fungi.

Related Term(s): [Fungus](#)

Antigen

Any substance that triggers an immune response. Antigens include bacteria; viruses; and allergens, such as pollen.

Related Term(s): [Immune Response](#)

Antigen/Antibody Combination Test

A type of HIV test that can detect HIV-1 and HIV-2 antibodies and HIV-1 p24 antigen (a protein that forms the HIV core). Antigen/antibody combination tests can detect HIV earlier than tests that only detect HIV antibodies. The test is done using a blood sample.

Related Term(s): [Antibody](#), [Antigen](#), [HIV-1](#), [HIV-2](#)

Antigen-Antibody Complex

SEE: [Immune Complex](#)

Antigen-Presenting Cell (APC)

A type of immune cell that enables a T lymphocyte (T cell) to recognize an antigen and mount an immune response against the antigen. Antigen-presenting cells (APCs) include macrophages, dendritic cells, and B lymphocytes (B cells).

Related Term(s): [Antigen](#), [Immune Response](#), [T Lymphocyte](#)

Antineoplastic

A drug that helps treat cancer by inhibiting cell growth.

Antiprotozoal

A drug used to kill or suppress the growth of protozoans.

Related Term(s): [Protozoan](#)

Antiretroviral (ARV)

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

Related Term(s): [Drug Class](#), [Retrovirus](#)

Antiretroviral Pregnancy Registry

A project established to monitor prenatal exposures to antiretroviral (ARV) drugs and to detect any potential increase in the risk of related birth defects. Pregnant women exposed to ARV drugs voluntarily enroll in the Registry through their health care providers. Information provided to the Registry includes no identifying patient information.

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. A person's initial HIV regimen generally includes three antiretroviral (ARV) drugs from at least two different HIV drug classes.

Related Term(s): [Antiretroviral](#), [Drug Class](#), [Treatment Regimen](#)

Antiretroviral Toxic Neuropathy (ATN)

Nerve damage that is due to antiretroviral (ARV) drugs.

Related Term(s): [Neuropathy](#)

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.

Related Term(s): [Virus](#)

Aphthous Ulcer

Synonym(s): Canker Sore

An open sore that develops on parts of the mouth (inner surface of the cheeks and lips, tongue, soft palate, or base of the gums). Although aphthous ulcers are noncontagious and non-life threatening, they can be very painful. Aphthous ulcers are more common and more likely to reoccur in people with HIV than in people without HIV.

Apoptosis

Synonym(s): Programmed Cell Death

The deliberate, programmed death of a cell. Apoptosis is a normal biological process that helps the body stay healthy by eliminating old or damaged cells. One of the ways that HIV gradually destroys the immune system is by causing apoptosis of CD4 T lymphocytes (CD4 cells).

Related Term(s): [CD4 T Lymphocyte](#)

Approved Drug

(Figure 10)

A drug approved by the U.S. Food and Drug Administration (FDA) for sale in the United States. The extensive FDA drug approval process has many steps, including preclinical laboratory and animal studies, safety and efficacy clinical trials in humans, filing of a New Drug Application by the drug manufacturer, FDA review of the application, and FDA approval or rejection of the application.

Related Term(s): [Clinical Trial](#), [New Drug Application](#), [U.S. Food and Drug Administration](#)

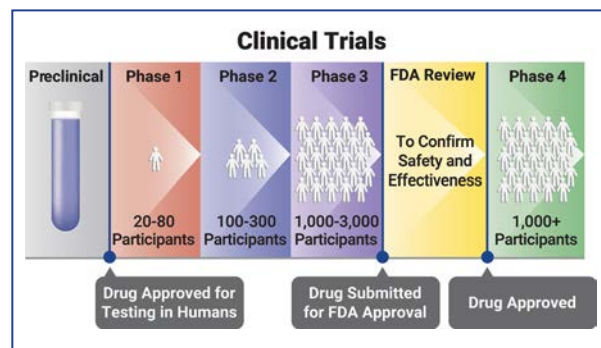


Figure 10

Area Under the Curve (AUC)

(Figure 11)

A measure of how much drug reaches a person's bloodstream in a given period of time after a dose is given. The information is useful for determining dosing and for identifying potential drug interactions.

Related Term(s): [Drug Interaction](#), [Pharmacokinetics](#)

Arm

A group or subgroup of participants in a clinical trial that receives specific interventions, or no intervention, according to the study protocol.

Related Term(s): [Clinical Trial](#), [Intervention](#)

Arrhythmia

Any irregularity in rhythm or rate of the heartbeat.

Arthralgia

Joint pain. Arthralgia is a common symptom of HIV and may be caused by some drugs used to treat HIV and opportunistic infections.

Artificial Insemination

SEE: [Intrauterine Insemination](#)

Aspartate Aminotransferase (AST)

Synonym(s): Serum Glutamic-Oxaloacetic Transaminase

An enzyme found especially in heart, muscle, and liver cells. Aspartate aminotransferase may be measured as part of a liver function test.

Related Term(s): [Liver Function Test](#)

Aspergillosis

An infection caused by the fungus *Aspergillus*. Invasive aspergillosis is a serious lung infection that can spread to other parts of the body. It occurs almost exclusively in people with low blood levels of neutrophils, a type of white blood cell, and weakened immune systems. Invasive aspergillosis in a person with HIV is rare.

Related Term(s): [Opportunistic Infection](#)

Assembly

(Figure 12, Figure 13)

The sixth of seven steps in the HIV life cycle. During assembly, new HIV RNA and HIV proteins made by the host CD4 cell move to the surface of the cell and assemble into immature (noninfectious) HIV.

Related Term(s): [Life Cycle](#)

Asthenia

Weakness; lack or loss of energy or strength.

Asymptomatic HIV Infection

SEE: [Chronic HIV Infection](#)

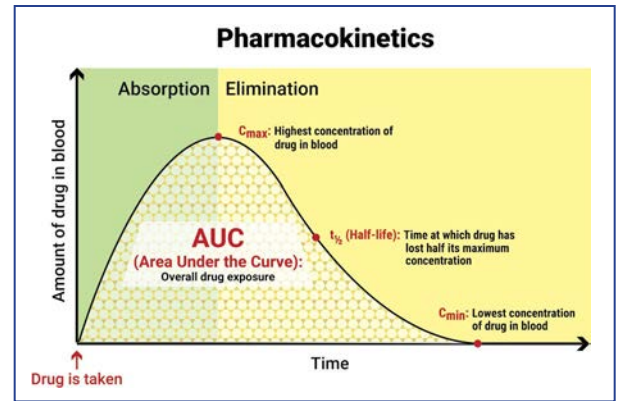


Figure 11

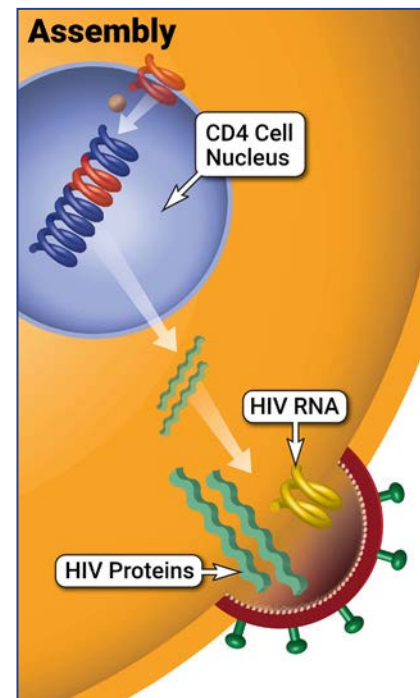


Figure 12

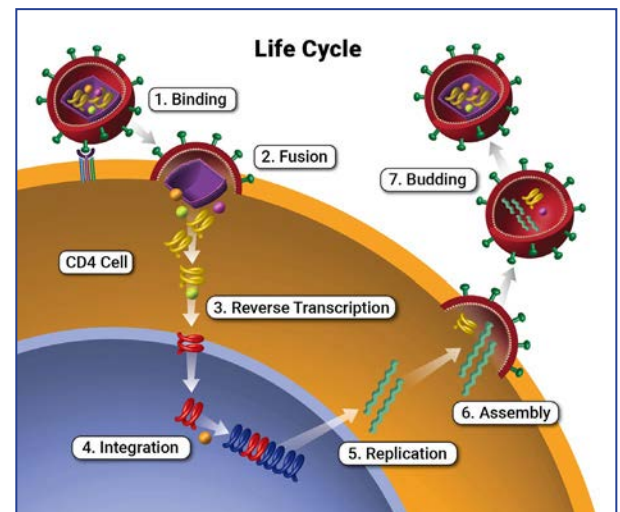


Figure 13

Ataxia

Impaired coordination of voluntary muscle movements. Ataxia may be an adverse effect of drugs used to treat either HIV or opportunistic infections or may be caused by neurological conditions associated with HIV.

Atherosclerosis

The gradual build-up of plaque inside of artery walls. (Plaque is made up of fat, cholesterol, calcium, and other substances found in blood.) Over time, the plaque hardens and narrows the arteries, decreasing the flow of oxygen-rich blood to organs and other parts of the body.

Attachment

SEE: [Binding](#)

Attachment Inhibitor

Attachment inhibitors are a class of antiretroviral (ARV) drugs that interfere with the early interaction between the gp120 protein on the outer surface of HIV and the CD4 receptor on the host cell (CD4 T lymphocytes [CD4 cells]). This prevents HIV from binding to and entering CD4 cells. Attachment inhibitors are part of a larger class of HIV drugs called entry inhibitors.

Related Term(s): [Entry Inhibitor](#), [gp120](#), [Investigational Drug](#)

Attenuated

SEE: [Live Attenuated](#)

Autoimmune Disorder

A condition that occurs when the immune system mistakenly attacks and destroys healthy body tissue. Autoimmune disorders may be caused by drugs used to treat opportunistic infections.

Related Term(s): [Immune System](#)

Autoimmune Thrombocytopenic Purpura

SEE: [Immune Thrombocytopenia](#)

Avascular Necrosis (AVN)

Death of bone tissue (osteonecrosis) due to a lack of blood supply. Avascular necrosis (AVN) most commonly affects the hip. Symptoms include pain in the affected area of the body, limited range of motion, joint stiffness, muscle spasms, and limping. AVN is associated with several medical conditions, including cancer and HIV.

Related Term(s): [Osteonecrosis](#)

B

B Cell

SEE: [B Lymphocyte](#)

B-Cell Lymphoma

A type of lymphoma (cancer of the lymphatic system) that starts in the B lymphocytes (B cells). People with weakened immune systems, including people with HIV, are more likely to develop B-cell lymphomas than people with healthy immune systems. In people with HIV, certain B-cell lymphomas are considered AIDS-defining conditions.

Related Term(s): [AIDS-Defining Condition](#), [B Lymphocyte](#), [Lymphoma](#)

b.i.d., bid

SEE: [BID](#)

B Lymphocyte

Synonym(s): B Cell

A type of lymphocyte. B lymphocytes (B cells) produce antibodies to help the body fight infection.

Related Term(s): [Antibody](#), [Lymphocyte](#)

Backbone

(Figure 14)

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.

Related Term(s): [Integrase Strand Transfer Inhibitor](#), [Non-Nucleoside Reverse Transcriptase Inhibitor](#), [Nucleoside Reverse Transcriptase Inhibitor](#), [Protease Inhibitor](#), [Treatment Regimen](#)

Bactericidal Drug

A drug used to kill bacteria.

Related Term(s): [Bacterium](#)

Bacteriostatic Drug

A drug used to prevent the growth of bacteria. Bacteriostats do not kill bacteria.

Related Term(s): [Bactericidal Drug](#), [Bacterium](#)

Bacterium

A single-celled microorganism. Bacteria occur naturally almost everywhere on earth, including in humans. Some bacteria can cause disease in humans. People with weakened immune systems, including people with HIV, are more likely to develop bacterial infections than people with healthy immune systems.

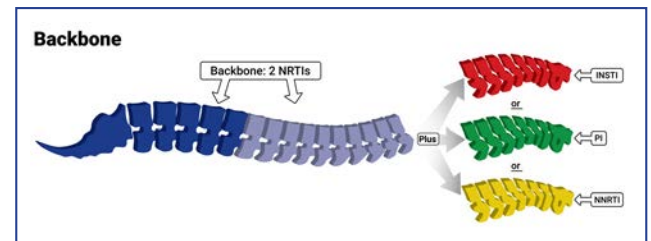


Figure 14

Bartonellosis

A group of infections caused by the bacteria *Bartonella*. Examples of the various infections include cat scratch disease, trench fever, bacillary angiomatosis (BA), and bacillary peliosis hepatis. BA and bacillary peliosis hepatis occur only in people with weakened immune systems, such as people with HIV.

Related Term(s): [Opportunistic Infection](#)

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).

Related Term(s): [CD4 Count](#), [Resistance Testing](#), [Viral Load](#)

Basophil

A type of white blood cell that helps the body fight infection by triggering an inflammatory response to an antigen.

Related Term(s): [Antigen](#), [White Blood Cell](#)

Best Practice

SEE: [Standard of Care](#)

Beta-2 Microglobulin (B2M)

A protein found on the surface of many cells, including white blood cells. Beta-2 microglobulin (B2M) levels increase during infection with some viruses, including HIV.

BID

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

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

Bilirubin

A reddish-yellow substance produced during the normal breakdown of red blood cells. Bilirubin is normally processed through the liver and eventually excreted from the body. Excess bilirubin in the blood may indicate liver damage or disease.

Related Term(s): [Jaundice](#), [Liver](#), [Liver Function Test](#)

Binding

(Figure 15, Figure 16)

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.

Related Term(s): [CCR5](#), [CCR5 Antagonist](#), [CXCR4](#), [Life Cycle](#)

Bioavailability

A measure of the rate and extent to which a drug is absorbed and becomes available at the site of drug action in the body.

Related Term(s): [Pharmacology](#)

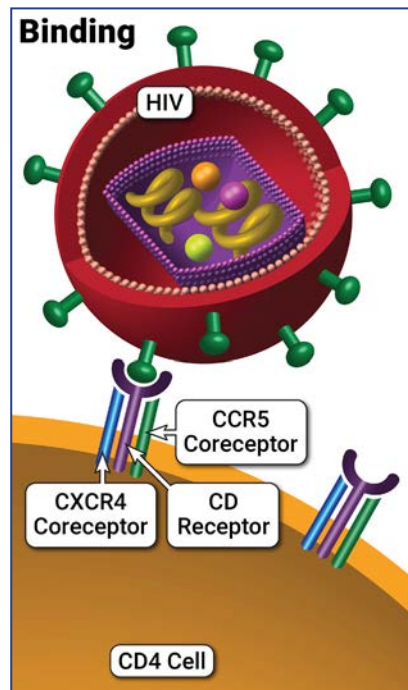


Figure 15

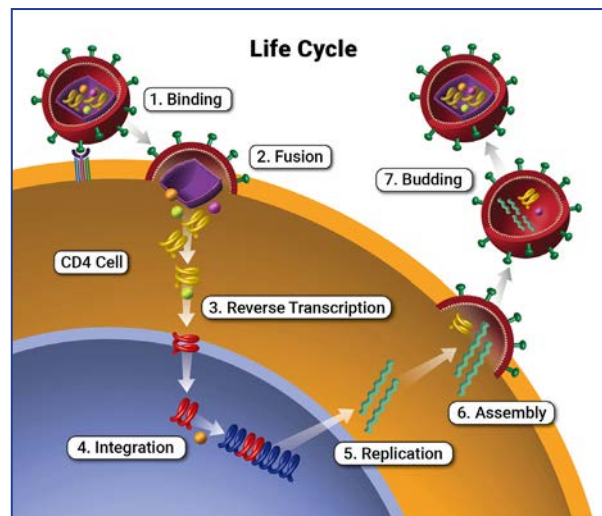


Figure 16

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.

Related Term(s): [Gene Therapy](#), [Immune Modulators](#), [Immune Response](#)

Biopsy

Removal of tissue, cells, or fluid from the body for examination under a microscope. Biopsies are used to diagnose disease.

Black Box Warning

SEE: [Boxed Warning](#)

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.

Related Term(s): [Undetectable Viral Load](#), [Viral Load](#), [Virologic Failure](#)

Blood-Brain Barrier

A semipermeable layer of blood vessels and tissue that separates the brain from circulating blood. The blood-brain barrier prevents potentially dangerous substances in the blood, such as disease-causing organisms or chemical compounds, from entering the brain tissue. Certain antiretroviral (ARV) drugs can cross the blood-brain barrier and may help stop or slow HIV damage to the brain.

Blood Sugar

SEE: [Glucose](#)

Blood Thinner

SEE: [Anticoagulant](#)

Body Habitus Changes

Noticeable physical changes in body shape or appearance. In people with HIV, these changes may be due to HIV or some antiretroviral (ARV) drugs.

Related Term(s): [Gynecomastia](#), [Lipodystrophy Syndrome](#), [Wasting Syndrome](#)

Bone Density Test

SEE: [Dual Energy X-Ray Absorptiometry](#)

Bone Marrow

The soft, sponge-like tissue in the center of bones. There are two types of bone marrow: yellow (made up of mostly fat cells) and red (the source of red blood cells, platelets, and most white blood cells).

Bone Marrow Suppression

SEE: [Myelosuppression](#)

Boosting*(Figure 17)*

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.

Related Term(s): [Protease Inhibitor](#)

Boxed Warning

Synonym(s): Black Box Warning

The strongest form of warning required by the U.S. Food and Drug Administration (FDA) for prescription drug labeling. A boxed warning alerts health care providers and consumers to increased risk of serious adverse reactions associated with use of a drug or to restrictions on use of a drug. The boxed warning is presented in a box surrounded by a black border and is placed on the drug label and any package inserts or promotional materials intended for the prescriber or patient.

Related Term(s): [Package Insert](#), [U.S. Food and Drug Administration](#)

Brain Attack

SEE: [Stroke](#)

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.

Related Term(s): [Antibody](#), [Investigational Drug](#), [Therapeutic HIV Vaccine](#)

Bronchitis

An inflammation of the lining of the bronchial tubes, which carry air to and from the lungs. Symptoms include wheezing, difficulty breathing, chest pain, and a frequent cough that at first is dry and later produces mucus. Bronchitis may be either acute (usually developing from a respiratory infection) or chronic (due to constant irritation or inflammation of the bronchial tubes, such as from smoking). Bronchitis occurs frequently among people with HIV.

Related Term(s): [Infection](#)

Bronchopneumonia

SEE: [Pneumonia](#)

Bronchoscopy

A procedure used to look inside the airways of the lungs. The procedure is done using a bronchoscope, which is either a flexible or a rigid tube that has a camera on one end of it. A bronchoscopy may be used to diagnose HIV-related infections or cancer.

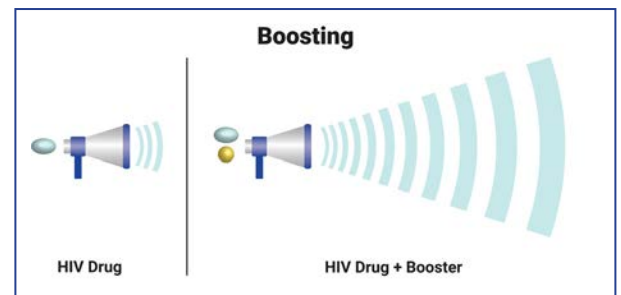


Figure 17

B

Bronchospasm

Sudden, involuntary contraction of the muscles of the bronchi (airways in the lungs).

Budding

(Figure 18, Figure 19)

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.

Related Term(s): [Life Cycle](#)

Buffalo Hump

SEE: [Dorsocervical Fat Pad](#)

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.

Related Term(s): [Lymphoma](#), [Non-Hodgkin Lymphoma](#)

Burkitt's Lymphoma

SEE: [Burkitt Lymphoma](#)

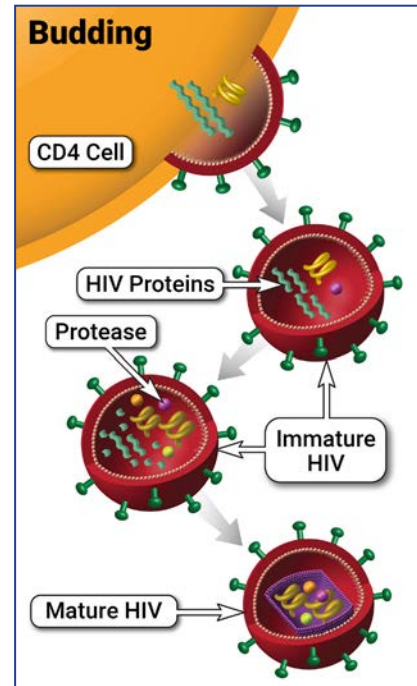


Figure 18

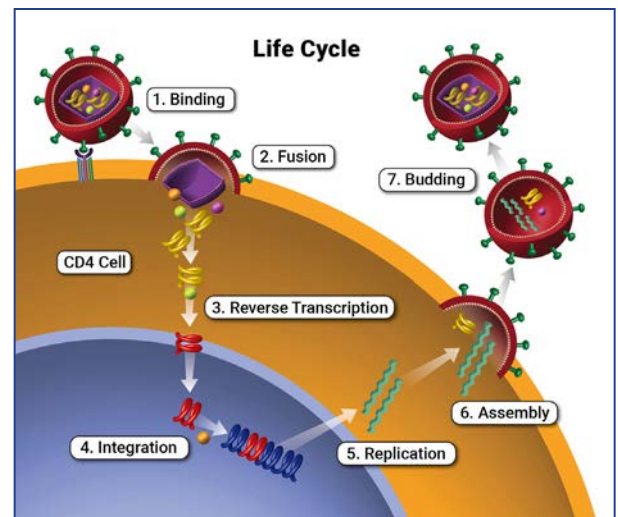


Figure 19

C

C-Section

SEE: [Cesarean Section](#)

Cachexia

Physical wasting (loss of body weight and muscle mass) frequently associated with chronic disease, such as cancer or AIDS.

Campylobacteriosis

An enteric (intestinal) infection caused by the bacterium *Campylobacter*. Symptoms of campylobacteriosis, if any, include diarrhea (often bloody), abdominal cramping and pain, nausea and vomiting, fever, and fatigue. Some people with campylobacteriosis may develop Guillain-Barré syndrome. Certain bacterial enteric infections, including campylobacteriosis, occur at a much higher rate in people with HIV than in the general population.

Related Term(s): [Guillain-Barré Syndrome](#)

Candidal Vaginitis

SEE: [Vulvovaginal Candidiasis](#)

Candidiasis

Synonym(s): Yeast Infection

A fungal infection caused by overgrowth of the yeast *Candida* (usually *Candida albicans*) in moist areas of the body. Candidiasis can affect the mucous membranes of the mouth, vagina, and anus. In people with HIV, candidiasis of the bronchi, trachea, lungs, or esophagus is an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#)

Canker Sore

SEE: [Aphthous Ulcer](#)

Capsid

(Figure 20)

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.

Related Term(s): [Envelope](#), [Enzyme](#), [Glycoprotein](#), [Human Immunodeficiency Virus](#), [Ribonucleic Acid](#)

Capsid Inhibitor(s)

Capsid inhibitors are a class of drugs that interfere with HIV capsid, a protein shell that protects HIV's genetic material and enzymes needed for replication. Capsid inhibitors can disrupt HIV capsid during multiple stages of the viral life cycle.

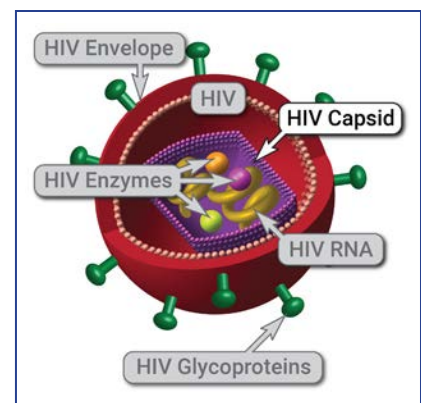


Figure 20

Cardiomyopathy

Disease of the heart muscle. Cardiomyopathy weakens the heart muscle, making it hard for the heart to pump blood to the rest of the body. HIV or use of some antiretroviral (ARV) drugs may cause cardiomyopathy.

Cardiovascular

Relating to or involving the heart and blood vessels. Use of some antiretroviral (ARV) drugs may increase the risk of cardiovascular disease.

CARE Act

SEE: [Ryan White HIV/AIDS Program](#)

C-C Chemokine Receptor 5

SEE: [CCR5](#)

CCR5

(Figure 21)

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.

Related Term(s): [CCR5 Antagonist](#), [CD4 Receptor](#), [Coreceptor](#), [CXCR4](#), [Fusion](#), [Life Cycle](#)

CCR5 Antagonist

(Figure 21, Figure 22)

Synonym(s): CCR5 Inhibitor

Antiretroviral (ARV) HIV drug class. CCR5 antagonists block the CCR5 coreceptor on the surface of certain immune cells, such as CD4 T lymphocytes (CD4 cells). This prevents HIV from entering the cell.

Related Term(s): [CCR5](#), [Drug Class](#)

CCR5 Inhibitor

SEE: [CCR5 Antagonist](#)

CD4 Cell

SEE: [CD4 T Lymphocyte](#)

CD4 Cell Count

SEE: [CD4 Count](#)

CD4 Cell Percentage

SEE: [CD4 Percentage](#)

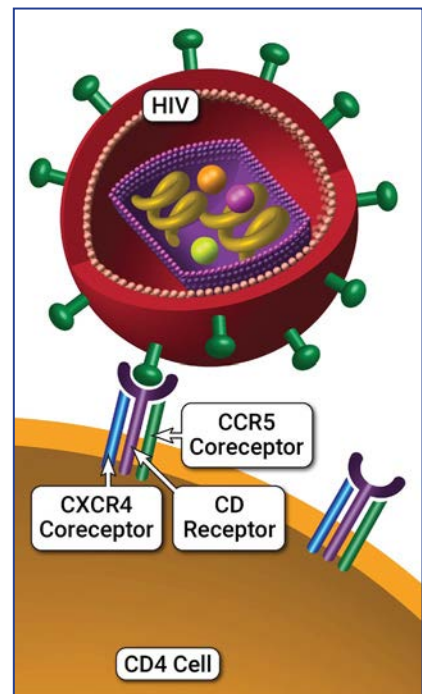


Figure 21

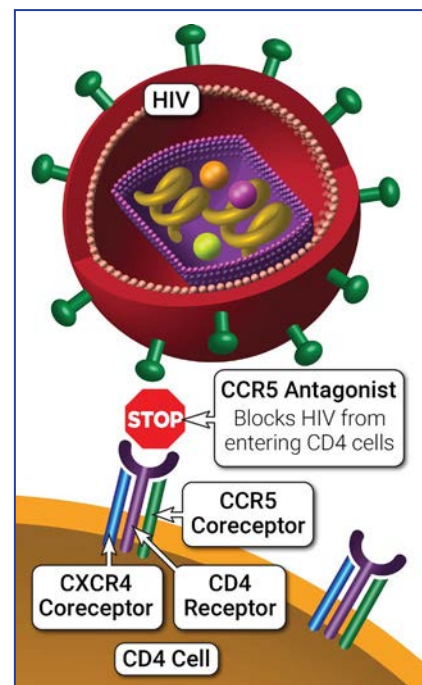


Figure 22

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).

Related Term(s): [CD4 Percentage](#), [CD4 T Lymphocyte](#), [HIV Progression](#)

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).

Related Term(s): [CD4 Count](#), [CD4 T Lymphocyte](#), [HIV Progression](#), [Lymphocyte](#)

CD4 Receptor

(Figure 23)

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.

Related Term(s): [CCR5](#), [CD4 T Lymphocyte](#), [CXCR4](#), [Fusion](#), [Life Cycle](#)

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.

Related Term(s): [CD4 Count](#), [CD4 Percentage](#), [Lymphocyte](#), [T Lymphocyte](#)

CD4 T Lymphocyte Count

SEE: [CD4 Count](#)

CD4 T Lymphocyte Percentage

SEE: [CD4 Percentage](#)

CD8 Cell

SEE: [CD8 T Lymphocyte](#)

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.

Related Term(s): [Lymphocyte](#), [T Lymphocyte](#)

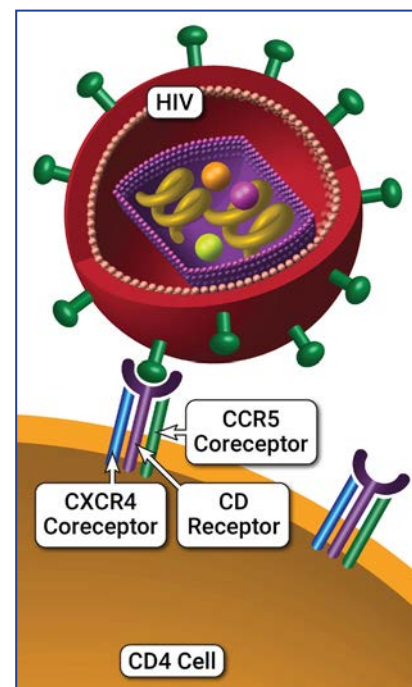


Figure 23

CDC-INFO

The national contact center of the Centers for Disease Control and Prevention (CDC). CDC-INFO provides science-based health information on more than 750 health topics to the public, health care providers, and public health professionals by phone, email, and postal mail.

Related Term(s): [Centers for Disease Control and Prevention](#)

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.

Related Term(s): [Humoral Immunity](#), [T Lymphocyte](#)

Cellular Immunity

SEE: [Cell-Mediated Immunity](#)

Centers for Disease Control and Prevention (CDC)

A federal agency that protects the health and safety of people at home and abroad through health promotion, prevention and control of disease and injury, public health workforce development and training, and preparedness for new health threats.

Related Term(s): [CDC-INFO](#), [Centers for Disease Control and Prevention-National Prevention Information Network](#)

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, viral hepatitis, other sexually transmitted infections (STIs), and tuberculosis (TB). Information is available online and over the phone.

Related Term(s): [Centers for Disease Control and Prevention](#)

Centers for Medicare and Medicaid Services (CMS)

Synonym(s): Health Care Financing Administration

A federal agency that administers the Medicare program and monitors the Medicaid programs offered by each state, including the Children's Health Insurance Program.

Central Nervous System (CNS)

The part of the nervous system that is made up of the brain and spinal cord. The central nervous system (CNS) serves as the main processing center for the entire nervous system and coordinates all body functions. HIV or use of some antiretroviral (ARV) drugs can cause damage to the CNS.

Cerebrospinal Fluid (CSF)

A clear, nutrient-rich fluid that surrounds the brain and spinal cord. Cerebrospinal fluid (CSF) acts as a cushion, protecting the brain and spinal cord from injury.

Cervical Cancer

A type of cancer that develops in the cervix (the lower, narrow end of the uterus). Cervical cancer is almost always caused by the human papillomavirus (HPV), which is spread through sexual contact. In women with HIV, invasive cervical cancer is an AIDS-defining condition.

Related Term(s): [Cervix](#), [Human Papillomavirus](#)

Cervix

The lower, narrow end of the uterus (womb), which forms a canal between the uterus and vagina.

Cesarean Delivery

Delivery of a baby by a surgical incision through the pregnant woman's abdominal wall and uterus. In some pregnant women with HIV, a scheduled cesarean delivery may reduce the likelihood of perinatal transmission of HIV.

Related Term(s): [Cesarean Section](#), [Prevention of Perinatal Transmission](#)

Cesarean Section

Synonym(s): C-Section

Surgical incision through the abdominal wall and uterus to deliver a baby.

Related Term(s): [Cesarean Delivery](#)

Chagas Disease

Synonym(s): American Trypanosomiasis

A disease caused by the parasite *Trypanosoma cruzi* (a type of protozoa). Chagas disease is most commonly transmitted when people come into contact with the feces of an infected reduviid bug, a blood-sucking insect that feeds on humans and animals. In the earliest stage of infection, Chagas disease usually has few signs or symptoms. However, if untreated, the disease becomes a lifelong infection. In people with HIV, reactivation of chronic Chagas disease can cause inflammation of the brain and meninges (meningoencephalitis).

Related Term(s): [Opportunistic Infection](#)

Chancroid

A sexually transmitted infection caused by the bacterium *Haemophilus ducreyi*. Chancroid causes genital ulcers (sores), which increase the likelihood of HIV transmission.

Related Term(s): [Sexually Transmitted Infection](#)

Chemokines

Small proteins secreted by cells to mobilize and activate infection-fighting white blood cells. Chemokines are involved in many immune and inflammatory responses.

Related Term(s): [Immune Response](#)

Chemoprevention

Synonym(s): Chemoprophylaxis

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

Chemoprophylaxis

SEE: [Chemoprevention](#)

Chemotherapy

The use of drugs to treat cancer. Like HIV, chemotherapy may result in immunosuppression.

Chickenpox

SEE: [Primary Varicella Infection](#)

Child-Pugh Score

SEE: [Child-Turcotte-Pugh Classification System](#)

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 infection 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 likelihood of HIV transmission.

Related Term(s): [Sexually Transmitted Infection](#)

Cholangiopathy

Bile duct disease. (Bile ducts are tubes that carry bile from the gallbladder to the small intestine, where the bile is used to digest fats.) Certain opportunistic infections may cause cholangiopathy in people with AIDS.

Cholesterol

A waxy, fat-like substance that is made by the liver or absorbed from foods such as eggs, meat, and dairy products. The body uses cholesterol to insulate nerves, build cell membranes, and produce certain hormones. Excess cholesterol, however, can clog the arteries and lead to heart disease. Some antiretroviral (ARV) drugs may cause high cholesterol levels.

Related Term(s): [Atherosclerosis](#)

Chromosome

A thread-like structure found within a cell. Chromosomes, which are made of DNA coiled around proteins, carry all of the genetic information essential to the life of the cell.

Chronic HIV Infection

(Figure 24)

Synonym(s): Asymptomatic HIV Infection, Clinical Latency

The stage of HIV 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.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [Acute HIV Infection](#), [HIV Progression](#)

Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)

A rare neurological disorder in which the immune system mistakenly attacks part of the peripheral nervous system. Chronic inflammatory demyelinating polyneuropathy (CIDP) primarily destroys the myelin that covers the peripheral nerves, causing the nerve signals to slow down. This damage can gradually weaken the legs and arms. CIDP has been associated with HIV.

Related Term(s): [Myelin](#), [Peripheral Nervous System](#)

Chronic Maintenance Therapy

SEE: [Maintenance Therapy](#)

Circumoral

Pertaining to the area of the face around the mouth.

Clade

SEE: [Subtype](#)

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.

Related Term(s): [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.

Related Term(s): [Chromosome](#)

Clinical Alert

An early notice of urgent findings from federally funded clinical trials. Clinical alerts advise health care professionals and others of research findings that could affect patient care.

Related Term(s): [Clinical Trial](#)

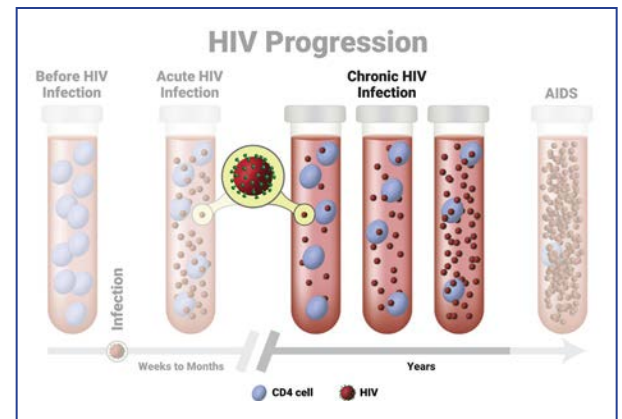


Figure 24

Clinical Endpoint

Synonym(s): Endpoint, Outcome Measure

In a clinical trial, an outcome or event used to objectively measure the effect of a drug or other intervention being studied. Common endpoints include severe toxicity, relief of symptoms, and improvements in quality of life.

Related Term(s): [Clinical Trial](#), [Surrogate Endpoint](#)

Clinical Hold

An order issued by the U.S. Food and Drug Administration (FDA) to a drug sponsor to delay a proposed clinical investigation or to suspend an ongoing investigation. The clinical hold may apply to one or more of the investigations conducted under an investigational new drug application (IND). A clinical hold may be designated as either complete (all clinical work under an IND is affected) or partial (part of the clinical work under an IND is affected).

Related Term(s): [Clinical Trial](#), [Investigational Drug](#), [U.S. Food and Drug Administration](#)

Clinical Latency

SEE: [Chronic HIV Infection](#)

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.

Related Term(s): [CD4 Count](#), [HIV Progression](#)

Clinical Trial

(Figure 25)

A research study that determines whether a new drug (or other intervention) is both safe and effective for humans. People volunteer to participate in clinical trials (also called interventional studies) to help find better ways to treat, prevent, diagnose, and understand human disease. Clinical trials are conducted in "phases." Results from Phase 1, 2, and 3 trials are used to determine whether a new drug should be approved for sale in the United States. Once a new drug is approved, researchers continue to track its safety in Phase 4 trials.

Related Term(s): [Interventional Trial](#), [Observational Trial](#), [Phase 1 Trial](#), [Phase 2 Trial](#), [Phase 3 Trial](#), [Phase 4 Trial](#)

Clinicalinfo

The federal website offering HIV medical practice guidelines and information on HIV-related clinical trials and drugs for health care providers, researchers, people affected by HIV, and the general public. Information is also available by phone, email, and postal mail.

Related Term(s): [Clinicalinfo Español](#)

Clinicalinfo Español

The Spanish-language companion website to Clinicalinfo. Information in Spanish is also available by phone, email, and postal mail.

Related Term(s): [Clinicalinfo](#)

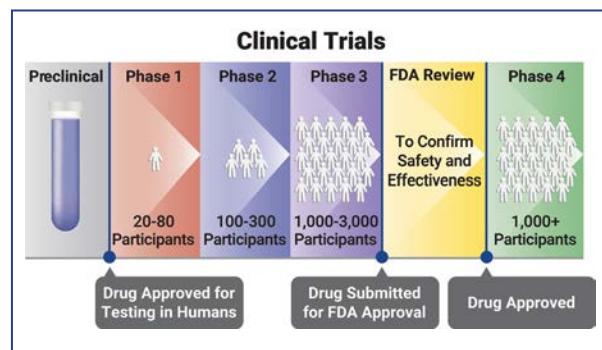


Figure 25

ClinicalTrials.gov

An online, searchable database of up-to-date information on thousands of federally and privately supported clinical trials for a wide range of diseases and conditions, including HIV. The site provides information about a trial's purpose, who may participate, study site locations, and contact information. ClinicalTrials.gov is managed by the federal government.

Related Term(s): [Clinical Trial](#)

C_{max}

(Figure 26)

Synonym(s): Peak Concentration

A pharmacokinetic measure used to determine drug dosing. C_{max} is the highest concentration of a drug in the blood, cerebrospinal fluid, or target organ after a dose is given.

Related Term(s): C_{min} , [Pharmacokinetics](#)

C_{min}

(Figure 26)

Synonym(s): Trough Concentration, Trough Level

A pharmacokinetic measure used to determine drug dosing. C_{min} is the lowest concentration of a drug in the blood, cerebrospinal fluid, or target organ after a dose is given.

Related Term(s): C_{max} , [Pharmacokinetics](#)

CMV Retinitis

SEE: [Cytomegalovirus Retinitis](#)

Coagulopathy

A disease or condition that affects the blood's ability to coagulate (clot) normally.

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.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#)

Cognitive Impairment

Difficulty thinking, reasoning, or remembering. Some people with HIV may have cognitive impairment.

Cohort

(Figure 27)

A group of people who share a particular characteristic, such as age or a medical condition. Participants for a clinical trial may be recruited from a particular cohort, such as pregnant women, children younger than 5 years old, or men with HIV.

Related Term(s): [Clinical Trial](#)

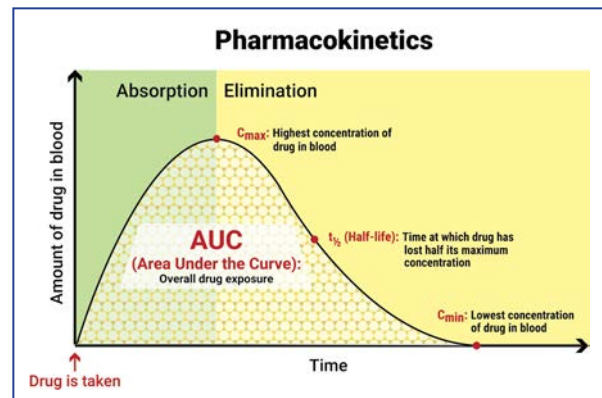


Figure 26

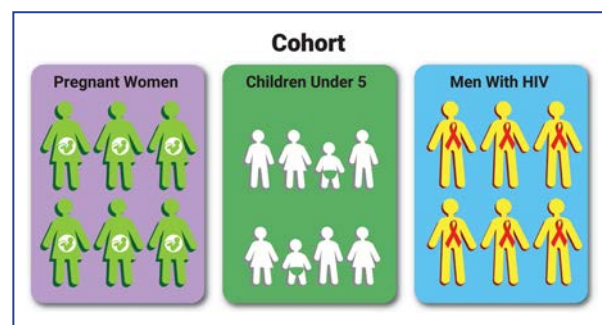


Figure 27

Coinfection

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

Related Term(s): [Monoinfection](#)

Colitis

Inflammation of the colon (large intestine). Symptoms can include abdominal pain, nausea, and diarrhea. Colitis may be associated with HIV or related opportunistic infections.

Combination Therapy

SEE: [Antiretroviral Therapy](#)

Combined Antiretroviral Therapy (cART)

SEE: [Antiretroviral Therapy](#)

Comfort Care

SEE: [Palliative Care](#)

Common Logarithm

SEE: [Log10](#)

Communicable Disease

An infectious disease that is contagious and that can be transmitted either directly or indirectly from one source to another by an infectious agent or its toxins.

Related Term(s): [Contagious Disease](#), [Infectious Disease](#)

Community-Acquired Pneumonia (CAP)

A lung infection acquired in a community setting, outside a hospital, nursing home, or other health care center. Symptoms of CAP can range from mild to severe and frequently include shortness of breath, cough, fever, shaking chills, and chest pain. CAP can be caused by many types of organisms, including bacteria, virus, fungi, and parasites. Most often, CAP is caused by the bacteria *Streptococcus pneumoniae* or respiratory viruses. In people with weakened immune systems, such as people with HIV, CAP is commonly caused by the fungus *Pneumocystis jirovecii*. In people with HIV, *Pneumocystis jirovecii* pneumonia is an AIDS-defining condition.

Community-Based Organization (CBO)

A public or private nonprofit organization that is representative of a community or a significant segment of a community and works to meet community needs. Many community-based organizations provide services to people with HIV.

Comorbid Condition

SEE: [Comorbidity](#)

Comorbidity

Synonym(s): Comorbid Condition

When a person has two or more diseases or conditions at the same time. For example, a person with high blood pressure may also have heart disease.

Compassionate Use

SEE: [Expanded Access](#)

Complementary and Alternative Medicine (CAM)

Health care practices and products that are not considered part of conventional (Western) medicine. Complementary medicine refers to use of nonstandard treatments together with conventional treatments. Alternative medicine refers to use of nonstandard treatments in place of conventional treatments. Examples of complementary and alternative medicine (CAM) include use of herbal medicines, acupuncture, and massage therapy.

Related Term(s): [National Center for Complementary and Integrative Health](#)

Complete Blood Count (CBC)

A blood test that measures the following in a sample of blood: red blood cells, white blood cells, platelets, hematocrit, and hemoglobin. A complete blood count (CBC) with differential also measures the levels of the five types of white blood cells found in blood: neutrophils, lymphocytes, monocytes, eosinophils, and basophils. The CBC is used to assess overall health and to diagnose and guide treatment of numerous diseases.

Comprehensive Metabolic Panel (CMP)

A group of blood tests that measures several parameters, including blood sugar (glucose), proteins, electrolytes (such as sodium and potassium), waste products (such as blood urea nitrogen [BUN] and creatinine), and enzymes. The comprehensive metabolic panel (CMP) is used to assess overall health and to diagnose and guide treatment of numerous diseases.

Concentration

SEE: [Drug Concentration](#)

Condom

Synonym(s): Prophylactic

A product used during sex (including vaginal, anal, or oral sex) to prevent the transmission of sexually transmitted infections, such as HIV and/or reduce the likelihood of pregnancy. An external condom is a thin cover that fits over an erect penis. An internal condom is a nitrile pouch that fits inside the vagina.

Related Term(s): [Sexually Transmitted Infection](#)

Condyloma Acuminatum

SEE: [Genital Warts](#)

Conjunctivitis

Synonym(s): Pink Eye, Red Eye

Inflammation or infection of the conjunctiva, which is the mucous membrane that lines the inside of the eyelid and covers the white part of the eye. Conjunctivitis is commonly caused by a bacterial or viral infection, an allergic reaction, or a blocked tear duct (in babies). Conjunctivitis can also occur as part of a hypersensitivity reaction to certain antiretroviral (ARV) drugs.

Contagious

SEE: [Contagious Disease](#)

Contagious Disease

Synonym(s): Contagious

A communicable disease that can spread rapidly from person to person through direct contact (touching a person who has the infection), indirect contact (touching a contaminated object), or droplet contact (inhaling droplets made when a person who has the infection coughs, sneezes, or talks).

Related Term(s): [Communicable Disease](#), [Infectious Disease](#), [Sexual Transmission](#)

Contraindication

A situation in which a particular treatment or procedure should not be used because it could be potentially harmful. For example, use of a specific drug may be contraindicated during pregnancy.

Related Term(s): [Absolute Contraindication](#), [Relative Contraindication](#)

Control Arm

In a clinical trial, the group of participants that is not given the experimental intervention being studied. The control arm can receive an intervention that is considered effective (the standard), a placebo, or no intervention. Outcomes in the control arm are compared with those in the experimental arm to determine any differences, for example, in safety and effectiveness.

Related Term(s): [Clinical Trial](#), [Controlled Trial](#), [Experimental Arm](#), [Placebo](#)

Controlled Trial

A type of clinical trial that includes a control arm. Outcomes in the control arm are compared with those in the experimental arm to determine any differences, for example, in safety and effectiveness.

Related Term(s): [Clinical Trial](#), [Control Arm](#), [Experimental Arm](#)

Coreceptor

(Figure 28)

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.

Related Term(s): [CCR5](#), [CXCR4](#), [Receptor](#)

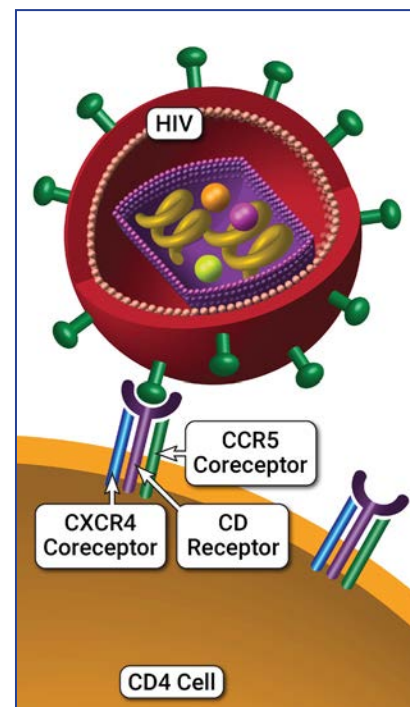


Figure 28

Coronary Artery Disease

SEE: [Coronary Heart Disease \(CHD\)](#)

Coronary Heart Disease (CHD)

Synonym(s): Coronary Artery Disease

A disease caused by the narrowing or blockage of the blood vessels that supply blood to the heart (called coronary arteries). Symptoms of coronary heart disease (CHD) can include chest pain, shortness of breath, irregular heartbeat, or a heart attack. Some antiretroviral (ARV) medicines may increase the likelihood of CHD in people with HIV.

Related Term(s): [Atherosclerosis](#), [Myocardial Infarction](#)

Coronary Risk Profile

SEE: [Lipid Profile](#)

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 non-nucleoside 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.

Related Term(s): [Class-Sparing Regimen](#), [Drug Resistance](#)

Cross Sensitivity

A sensitivity reaction to a drug that predisposes a person to react similarly to a different, but related, drug. For example, a person who has an allergic reaction to amoxicillin may also have an allergic reaction to cephalexin, a related antibiotic.

Cryoablation

SEE: [Cryotherapy](#)

Cryotherapy

Synonym(s): Cryoablation

A minimally invasive treatment in which liquid nitrogen or argon gas is used to freeze and destroy tissue. Cryotherapy is used to remove warts and precancerous skin lesions.

Crypto

SEE: [Cryptosporidiosis](#)

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.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#)

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.

Related Term(s): [AIDS-Defining Condition](#), [Cryptococcal Meningitis](#), [Opportunistic Infection](#)

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 longer than 1 month) is an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#), [Cryptosporidium](#), [Opportunistic Infection](#)

Cryptosporidium

The protozoan parasite that causes the diarrheal disease cryptosporidiosis. *Cryptosporidium* lives in the gut of infected animals and humans and may be found in soil, food, water, or on surfaces that have been contaminated with the feces from infected humans or animals.

Related Term(s): [Cryptosporidiosis](#), [Protozoan](#)

Crystalluria

Crystals in the urine. (Crystals are tiny stones composed of chemicals such as calcium.) Use of antiretroviral (ARV) drugs may cause crystalluria.

Cutaneous

Pertaining to the skin.

C-X-C Chemokine Receptor 4

SEE: [CXCR4](#)

CXCR4

(Figure 29)

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.

Related Term(s): [Coreceptor](#), [Fusion](#), [Life Cycle](#)

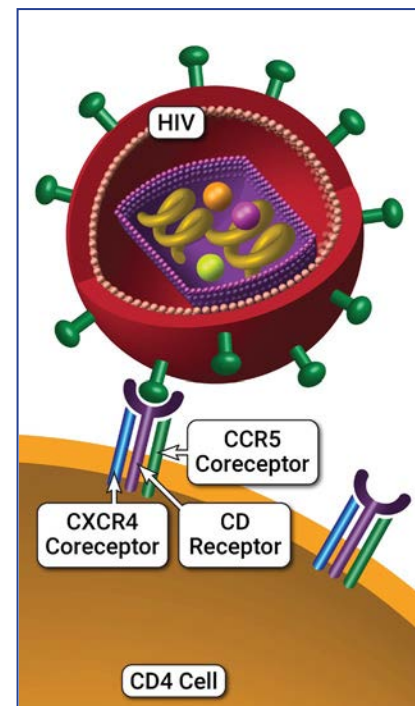


Figure 29

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 U.S. Food and Drug Administration (FDA) for patient use.

Related Term(s): [CXCR4](#), [Entry Inhibitor](#), [Investigational Drug](#)

CYP3A Inhibitors

SEE: [Pharmacokinetic Enhancers](#)

CYP3A4

Synonym(s): Cytochrome P450 3A4

An enzyme that plays a key role in the metabolism of many drugs. CYP3A4 is a member of the cytochrome P450 family of enzymes.

Related Term(s): [Cytochrome P450](#)

Cysteine-Cysteine Chemokine Receptor 5

SEE: [CCR5](#)

Cystoisosporiasis

Synonym(s): Isosporiasis

An intestinal infection caused by the protozoan parasite *Cystoisospora belli* (formerly called *Isospora belli*). Cystoisosporiasis can be spread by ingesting food or water contaminated with the parasite. Symptoms of cystoisosporiasis include watery diarrhea, abdominal pain, loss of appetite, weight loss, and fever. In people with HIV, chronic cystoisosporiasis (lasting longer than 1 month) is an AIDS-defining condition.

Related Terms: [AIDS-Defining Condition](#), [Opportunistic Infection](#)

Cytochrome P450 (CYP450)

A group of enzymes involved in the breakdown of drugs in the liver. Many drugs can inhibit or enhance the activity of these enzymes, causing drug levels in the blood to increase or decrease. Cytochrome P450 (CYP450) enzymes metabolize all protease inhibitors (PIs) and non-nucleoside reverse transcriptase inhibitors (NNRTIs) and can cause drug interactions that may result in adverse effects.

Related Term(s): [Drug Interaction](#)

Cytochrome P450 3A4

SEE: [CYP3A4](#)

Cytokine

A family of proteins produced by cells, especially by immune cells. Cytokines act as chemical messengers between cells to regulate immune responses.

Related Term(s): [Interferon](#), [Interleukin-2](#), [Interleukin-7](#)

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.

Related Term(s): [AIDS-Defining Condition](#), [Cytomegalovirus Retinitis](#), [Herpesviruses](#)

Cytomegalovirus Retinitis

Synonym(s): CMV Retinitis

Inflammation of the retina of the eye caused by cytomegalovirus (CMV) infection. Symptoms, if any, include blurred vision, floaters, and blind spots. In people with HIV, CMV retinitis (with loss of vision) is an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#), [Cytomegalovirus](#), [Opportunistic Infection](#), [Retina](#)

Cytopenia

A lower-than-normal number of blood cells, including red blood cells, white blood cells, or platelets.

Cytotoxic

Having the ability to kill cells.

Cytotoxic T Lymphocyte

SEE: [CD8 T Lymphocyte](#)

D

D/M-Tropic Virus

SEE: [Dual/Mixed Tropic Virus](#)

Data and Safety Monitoring Board (DSMB)

Synonym(s): Data and Safety Monitoring Committees (DSMCs), Data Monitoring Committee (DMC)

A committee of clinical research experts, such as physicians and statisticians, and patient advocates who monitor the progress of a clinical trial and review safety and effectiveness data while the trial is ongoing. This committee is independent of the people, organizations, and institutions conducting the clinical trial. Data and Safety Monitoring Boards (DSMBs) can recommend that a trial be stopped early because of concerns about participant safety or because the main research question has been answered.

Related Term(s): [Clinical Trial](#)

Data and Safety Monitoring Committee (DSMC)

SEE: [Data and Safety Monitoring Board \(DSMB\)](#)

Data Monitoring Committee (DMC)

SEE: [Data and Safety Monitoring Board \(DSMB\)](#)

Definitive

For certain; without a doubt. An initial positive HIV antibody test must be confirmed by a second test for a person to receive a definitive diagnosis of HIV.

Related Term(s): [Presumptive](#)

Dendritic Cell

A type of antigen-presenting cell found in many tissues throughout the body. Dendritic cells capture antigens with their threadlike tentacles and present the antigens to T lymphocytes (T cells), stimulating an immune response.

Related Term(s): [Antigen-Presenting Cell](#)

Dendritic Cell Vaccine

An experimental vaccine that uses dendritic cells to boost the immune system. Dendritic cell vaccines are currently being studied as a possible way to treat people with HIV.

Related Term(s): [Dendritic Cell](#)

Deoxyribonucleic Acid (DNA)

One of two types of genetic material found in all living cells and many viruses. (The other type of genetic material is RNA.) Deoxyribonucleic acid (DNA) carries the genetic instructions for the development and function of an organism. DNA allows for the transmission of genetic information from one generation to the next.

Related Term(s): [Ribonucleic Acid](#)

Depression

A mood disorder characterized by sadness, inactivity, and inability to take pleasure or interest in usual activities. The changes in mood can interfere with daily life and normal functioning. Use of some antiretroviral (ARV) drugs may cause depression.

Desensitization

Preventing or reducing a hypersensitivity (allergic) reaction to a drug by administering a low dose of the drug and then gradually increasing the dose.

Related Term(s): [Hypersensitivity](#), [Rechallenge](#)

Desert Fever

SEE: [Coccidioidomycosis](#)

Desert Rheumatism

SEE: [Coccidioidomycosis](#)

Desiccant

A drying agent. A desiccant absorbs moisture from the air and may be used inside the container of a drug product to protect medicine from damage due to moisture and humidity. Desiccants placed inside medicine containers may come in different shapes and sizes, including small packets (sachets) or cylindrical canisters. Desiccants inside medicine containers should not be removed and should not be ingested.

Diabetes

Synonym(s): Diabetes Mellitus

A group of diseases characterized by high levels of blood sugar (glucose). Type 1 diabetes occurs when the body fails to produce insulin, which is a hormone that regulates blood sugar. Type 2 diabetes occurs when the body either does not produce enough insulin or does not use insulin normally (insulin resistance). Common symptoms of diabetes include frequent urination, unusual thirst, and extreme hunger. Use of some antiretroviral (ARV) drugs may increase the likelihood of developing type 2 diabetes.

Related Term(s): [Hyperglycemia](#), [Insulin Resistance](#)

Diabetes Mellitus

SEE: [Diabetes](#)

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).

Related Term(s): [Self-Administered Therapy](#)

Disseminated

When an infection or disease has widely dispersed in a tissue, an organ, or the entire body.

Distal Sensory Polyneuropathy (DSP)

A type of peripheral neuropathy that can occur in people with HIV. Symptoms of distal sensory polyneuropathy (DSP) include tingling, numbness, or burning pain that normally begins in the legs and feet and may spread to the hands. There are two types of DSP: HIV-DSP, which is due to HIV infection itself, and antiretroviral (ARV)-DSP, which is caused by certain ARV drugs.

Related Term(s): [Peripheral Neuropathy](#)

Division of Acquired Immunodeficiency Syndrome (DAIDS)

Synonym(s): Division of AIDS

A division of the National Institute of Allergy and Infectious Diseases (NIAID) that develops and supports global research to prevent and treat HIV, its related coinfections, and comorbidities.

Related Term(s): [National Institute of Allergy and Infectious Diseases](#)

Division of AIDS

SEE: [Division of Acquired Immunodeficiency Syndrome](#)

Dorsocervical Fat Pad

Synonym(s): Buffalo Hump

An accumulation of fat on the back of the neck between the shoulders. A dorsocervical fat pad may be due to use of some antiretroviral (ARV) drugs.

Related Term(s): [Lipodystrophy Syndrome](#)

Dosage

The administration of individual doses of a medication as part of a medication regimen, usually expressed as quantity per unit of time. For example, a prescribed dosage might consist of 25 mg of a medication given 3 times a day for 6 days.

Related Term(s): [Dose](#)

Dosage Form

(Figure 30)

The physical form in which a drug is manufactured or administered. Examples of dosage forms include tablets, capsules, powders, and oral and injectable solutions. A drug may be available in multiple dosage forms.

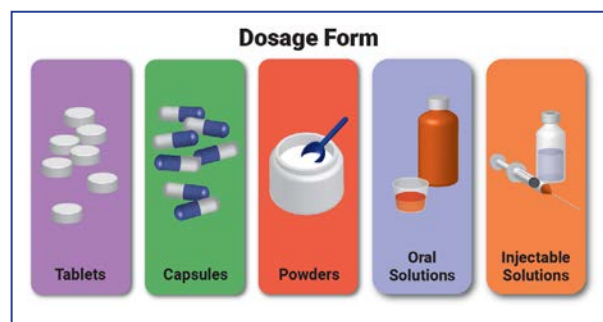


Figure 30

Dose

The quantity of a medication to be given at one time, or the total quantity of a medication administered during a specified period of time. For example, a patient might receive an initial medication dose of 50 mg, and, during the entire course of treatment, receive a total medication dose of 500 mg.

Related Term(s): [Dosage](#)

Dose-Ranging Trial

A type of clinical trial. In dose-ranging trials, different doses of a drug are tested. Trial results are compared to determine which dose is most safe and effective.

Related Term(s): [Clinical Trial](#)

Dose-Response Relationship

The association between the dose of a drug and the body's corresponding response to that dose.

Double-Blind Study

Synonym(s): Double-Masked Study

A type of clinical trial in which neither the participants nor the research team know which treatment a specific participant is receiving. This helps prevent bias or expectations from influencing the results of the study.

Related Term(s): [Clinical Trial](#), [Control Arm](#), [Single-Blind Study](#)

Double-Masked Study

SEE: [Double-Blind Study](#)

DRESS

SEE: [Hypersensitivity Syndrome](#)

Drug Antagonism

Synonym(s): Drug Opposition

An interaction between two or more drugs that have opposite effects on the body. Drug antagonism may block or reduce the effectiveness of one or more of the drugs.

Related Term(s): [Drug Synergism](#)

Drug Class

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

Related Term(s): [Capsid Inhibitor\(s\)](#), [CCR5 Antagonist](#), [Fusion Inhibitor](#), [Integrase Strand Transfer Inhibitor](#), [Life Cycle](#), [Non-Nucleoside Reverse Transcriptase Inhibitor](#), [Nucleoside Reverse Transcriptase Inhibitor](#), [Postattachment Inhibitor](#), [Protease Inhibitor](#)

Drug Concentration

Synonym(s): Concentration

The amount of a drug in a given volume of blood plasma, measured as the number of micrograms per milliliter.

Drug-Drug Interaction

(Figure 31)

A change in a drug's effect on the body when the drug is taken together with a second drug. A drug-drug interaction can delay, decrease, or enhance absorption of either drug. This can decrease or increase the action of either or both drugs or cause adverse effects.

Related Term(s): [Drug Antagonism](#), [Drug Interaction](#), [Drug Synergism](#)

Drug-Food Interaction

(Figure 32)

A change in a drug's effect on the body when the drug is taken together with certain foods (or beverages). Not all drugs are affected by food, and some drugs are affected by only certain foods. A drug-food interaction can delay, decrease, or enhance absorption of a drug. This can decrease or increase the action of the drug or cause adverse effects.

Related Term(s): [Drug Interaction](#)

Drug Formulation

SEE: [Formulation](#)

Drug Holiday

SEE: [Structured Treatment Interruption](#)

Drug Hypersensitivity Syndrome

SEE: [Hypersensitivity Syndrome](#)

Drug Interaction

(Figure 33)

A reaction between two (or more) drugs or between a drug and a food or supplement. An existing medical condition can also cause a drug interaction. A drug interaction can decrease or increase the action of the drug(s) or cause adverse effects.

Related Term(s): [Drug-Drug Interaction](#), [Drug-Food Interaction](#)

Drug Label

SEE: [Package Insert](#)

Drug Opposition

SEE: [Package Insert](#)

Drug Reaction With Eosinophilia and Systemic Symptoms

SEE: [Hypersensitivity Syndrome](#)

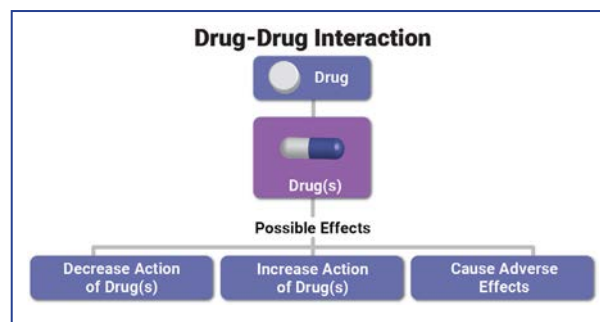


Figure 31

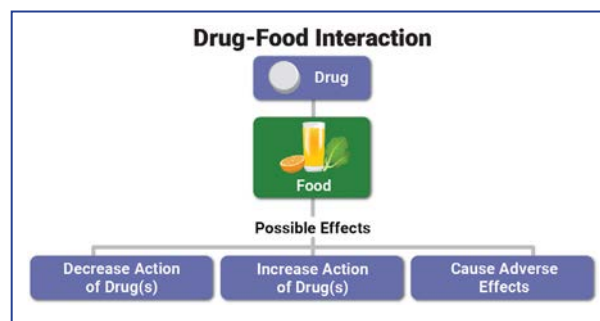


Figure 32

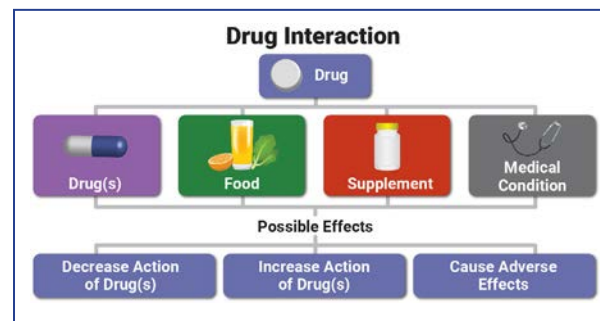


Figure 33

Drug Resistance

Synonym(s): Resistance

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

Related Term(s): [Acquired Resistance](#), [Drug-Susceptible HIV](#), [Transmitted Resistance](#), [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.

Related Term(s): [Drug Resistance](#)

Drug Synergism

Synonym(s): Synergism, Synergy

An interaction between two or more drugs that causes the total effect of the drugs to be greater than the sum of the individual effects of each drug. A synergistic effect can be beneficial or harmful.

Related Term(s): [Drug Antagonism](#)

Drug Toxicity

SEE: [Toxicity](#)

Dual Energy X-Ray Absorptiometry (DXA, DEXA)

Synonym(s): Bone Density Test

A test that uses low-dose x-rays to measure bone mineral density, including calcium content, in a section of bone. Dual energy x-ray absorptiometry (DXA) scans are used to detect osteoporosis and predict the risk of bone fracture.

Related Term(s): [Osteoporosis](#)

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.

Related Term(s): [CCR5](#), [CXCR4](#), [Dual-Tropic Virus](#), [Mixed-Tropic HIV](#), [R5-Tropic Virus](#), [X4-Tropic Virus](#)

Dual-Tropic Virus

(Figure 34)

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).

Related Term(s): [CCR5](#), [CD4 T Lymphocyte](#), [CXCR4](#), [Dual/Mixed Tropic Virus](#), [R5-Tropic Virus](#), [X4-Tropic Virus](#)

Dyslipidemia

Abnormal levels of lipids (fats), including cholesterol and triglycerides, in the blood. Dyslipidemia can refer to either decreased or elevated levels of lipids. Dyslipidemia may be an adverse effect of some antiretroviral (ARV) drugs.

Related Term(s): [Hyperlipidemia](#)

Dysplasia

Abnormal growth or development of cells, tissues, or organs.

Dyspnea

Difficult or labored breathing or shortness of breath.

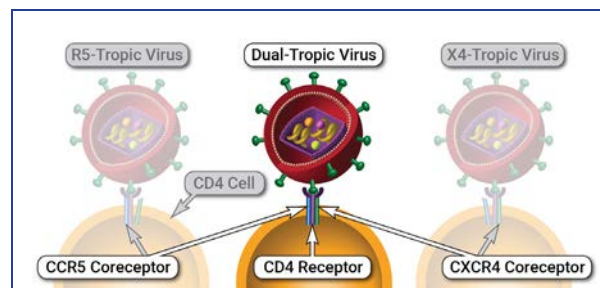


Figure 34

E

Ecchymosis

A blue or purplish bruise that results from bleeding under the skin.

Edema

Abnormal swelling caused by excess accumulation of fluid in tissues or body cavities.

Efficacy

Effectiveness of a drug or other medical intervention under ideal conditions, such as during a clinical trial. Drugs are tested for efficacy to ensure they produce the desired effect on the disease or condition being treated.

Related Term(s): [Clinical Trial](#)

Eligibility Criteria

Synonym(s): Exclusion/Inclusion Criteria, Inclusion/Exclusion Criteria

Factors used to determine whether a person is eligible (inclusion criteria) or not eligible (exclusion criteria) to participate in a clinical trial. Eligibility criteria may include disease type and stage, other medical conditions, previous treatment history, age, and sex.

Related Term(s): [Clinical Trial](#), [Protocol](#)

Elite Controllers

A small subset of people 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.

Related Term(s): [Long-Term Nonprogressors](#), [Viral Load](#)

Embryo

In humans, an infant developing in the uterus (womb) from conception until about two months after conception.

Empiric Therapy

Synonym(s): Empirical Therapy, Empirical Treatment

Treatment given based on experience, without precise knowledge of the cause or nature of a disorder. Emergency conditions sometimes require empirical treatment, such as when a dangerous infection by an unknown organism is treated with a broad-spectrum antibiotic while waiting for the results of bacterial culture and other tests.

Empirical Therapy

SEE: [Empiric Therapy](#)

Empirical Treatment

SEE: [Empiric Therapy](#)

Encephalitis

Inflammation of the brain, usually caused by a viral infection. Encephalitis can also be caused by a bacterial infection, toxin, or autoimmune process. Symptoms of encephalitis range from mild, such as flu-like symptoms, to severe, such as seizures. In people with HIV, encephalitis may be due to HIV or opportunistic infections, such as *Toxoplasma gondii* infection.

Endemic

When a disease occurs frequently and at a predictable rate in a specific location or population. For example, HIV-2 is endemic to West Africa.

Endpoint

SEE: [Clinical Endpoint](#)

End-Stage Liver Disease (ESLD)

The most severe stage of liver disease, at which point the liver is barely functioning, if at all. The treatment for end-stage liver disease (ESLD) is a liver transplant.

Related Term(s): [Liver](#)

End-Stage Renal Disease (ESRD)

The most severe stage of kidney (renal) disease, at which point the kidneys are barely functioning, if at all. The treatment for end-stage renal disease (ESRD) is dialysis or a kidney transplant.

Related Term(s): [Kidneys](#)

Enteric

Pertaining to the intestines. Certain bacterial enteric infections are more common or more severe in people with HIV than in people with healthy immune systems.

Enteric-Coated (EC)

When a tablet or capsule is coated with a substance that prevents the medication from being released until it reaches the small intestine, where it can then be absorbed.

Enteritis

Inflammation of the small intestine.

Entry Inhibitor

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

Related Term(s): [CCR5 Antagonist](#), [Fusion Inhibitor](#), [Postattachment Inhibitor](#)

Env

A major HIV gene that encodes the Env glycoprotein gp160. The Env glycoprotein gp160 is broken down into two smaller HIV glycoproteins (gp120 and gp41) that form the envelope of HIV. In addition to referring to the gene, Env can also refer to the glycoproteins produced by the gene. Env glycoproteins are important for HIV binding and fusion.

Related Term(s): [Binding](#), [Envelope](#), [Fusion](#), [Gene](#), [Glycoprotein](#), [Life Cycle](#)

Envelope

(Figure 35)

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.

Related Term(s): [Capsid](#), [Enzyme](#), [Glycoprotein](#), [Human Immunodeficiency Virus](#), [Ribonucleic Acid](#)

Enzyme

A molecule, usually a protein, that catalyzes (increases the rate of) chemical reactions in the body. Enzymes are essential to all body functions. HIV requires specific enzymes, such as reverse transcriptase or integrase, to replicate.

Related Term(s): [Integrase](#), [Reverse Transcriptase](#)

Enzyme Immunoassay

SEE: [Enzyme-Linked Immunosorbent Assay](#)

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.

Related Term(s): [Antibody](#), [Western Blot](#)

Eosinophilia

An abnormal increase of eosinophils (a type of white blood cell) in the blood, tissues, or organs. Eosinophilia is often a response to infection or allergens (substances that cause an allergic reaction).

Eosinophilic Folliculitis (EF)

A rare, severe type of folliculitis (inflammation of hair follicles) characterized by itchy bumps or pus-filled sores on the face, chest, back, or arms. Eosinophilic folliculitis (EF) is mainly associated with advanced HIV.

Epidemic

A widespread outbreak of a disease in a large number of individuals over a particular period of time either in a given area or among a specific group of people.

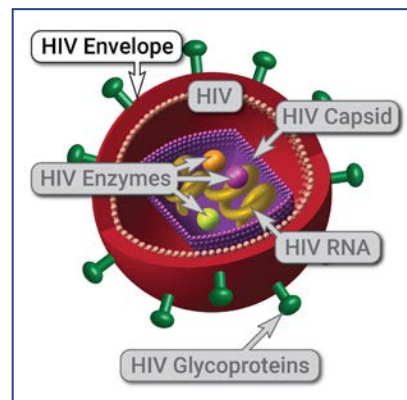


Figure 35

Epidemiology

The study of the distribution, causes, and clinical characteristics of disease or health status in a population.

Epithelium

A protective tissue consisting of one or more layers of cells that line the internal surface of organs and glands and cover the outer surface of the body. In addition to enclosing and protecting body surfaces, certain types of epithelial cells produce mucus or use tiny hairs called cilia to help remove foreign substances.

Epitope

A specific area on the surface of an antigen that interacts with and binds to specific antibodies. Generally, an antigen has several different epitopes.

Related Term(s): [Antibody](#), [Antigen](#)

Epstein-Barr Virus (EBV)

Synonym(s): HHV-4, Human Herpesvirus 4

A type of herpesvirus that infects B lymphocytes (B cells). Epstein-Barr virus (EBV) infection is usually asymptomatic but may cause mononucleosis ("mono"). In people with suppressed immune systems, EBV is strongly associated with certain cancers, including Burkitt lymphoma, oral hairy leukoplakia, and nasopharyngeal carcinoma.

Related Term(s): [Burkitt Lymphoma](#), [Herpesviruses](#)

Eradication

The total elimination of a pathogen, such as a bacterium, from the body. Eradication can also refer to the complete elimination of a disease from the world, such as the global eradication of smallpox.

Erythema

Redness of the skin.

Erythema Multiforme

A type of allergic reaction usually triggered by infections, most often herpes simplex infection. Use of some antiretroviral (ARV) drugs can also cause erythema multiforme.

Erythrocyte

SEE: [Red Blood Cell](#)

Etiology

The cause of a disease or condition. Etiology may also refer to the branch of medical science that studies the causes of diseases.

Excipient Hyperbilirubinemia

SEE: [Kernicterus](#)

Exclusion/Inclusion Criteria

SEE: [Eligibility Criteria](#)

Expanded Access

Synonym(s): Compassionate Use

Legal use of an investigational drug outside of a clinical trial to treat a person who has a serious or immediately life-threatening disease and who has no approved treatment options. The U.S. Food and Drug Administration (FDA) regulates expanded access to investigational drugs on a case-by-case basis for an individual patient or groups of patients who do not meet criteria to participate in a clinical trial. Drug companies must have FDA permission to make an investigational drug available for expanded access.

Related Term(s): [Investigational Drug](#), [U.S. Food and Drug Administration](#)

Experimental Arm

In a clinical trial, the group of participants that is given the experimental intervention being studied. Outcomes in the experimental arm are compared with those in the control arm to determine any differences, for example, in safety and effectiveness.

Related Term(s): [Clinical Trial](#), [Control Arm](#)

Experimental Drug

SEE: [Investigational Drug](#)

Extensively Drug-Resistant Tuberculosis (XDR-TB)

A relatively rare type of multidrug-resistant tuberculosis (MDR-TB). Extensively drug-resistant tuberculosis (XDR-TB) occurs when a *Mycobacterium tuberculosis* strain becomes resistant to the first-line anti-TB drugs isoniazid and rifampin, plus any fluoroquinolone and at least one of the three second-line injectable drugs. XDR-TB progresses more rapidly and is more severe in people who have both XDR-TB and HIV than in people who have only XDR-TB.

Related Term(s): [Multidrug-Resistant Tuberculosis](#), [Mycobacterium tuberculosis](#), [Tuberculosis](#)

F

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.

Related Term(s): [False Positive](#)

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.

Related Term(s): [False Negative](#)

Fanconi Syndrome

A hereditary or acquired kidney disorder that impairs the reabsorption of electrolytes, glucose, amino acids, and other nutrients into the bloodstream when blood passes through the kidneys. Acquired Fanconi syndrome may be caused by use of certain antiretroviral (ARV) drugs.

Related Term(s): [Kidneys](#)

Fatty Liver

SEE: [Hepatic Steatosis](#)

Fetus

In humans, an infant developing in the uterus (womb) from about the end of the second month of pregnancy until birth.

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.

Related Term(s): [Treatment-Naive](#)

Fixed-Dose Combination (FDC)

(Figure 36)

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.

Related Term(s): [Adherence](#), [Drug Class](#), [Regimen Simplification](#)

Formulation

Synonym(s): Drug Formulation

The composition of a drug product that contains the active ingredient and other inactive ingredients.

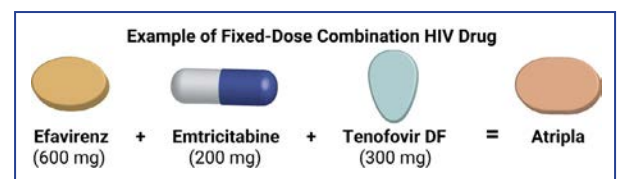


Figure 36

Functional Monotherapy

The addition of a single new drug to a regimen that is not producing complete viral suppression. Functional monotherapy is generally not recommended.

Fungus

A group of organisms that feeds off a living host organism or dead or decaying material. Examples of fungi include mushrooms, yeast, and mold. People with weakened immune systems, including people with HIV, are more likely to develop fungal infections than people with healthy immune systems.

Fusin

SEE: [CXCR4](#)

Fusion

(Figure 37, Figure 38)

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.

Related Term(s): [Fusion Inhibitor](#), [Life Cycle](#)

Fusion Inhibitor

(Figure 37, Figure 39)

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.

Related Term(s): [Drug Class](#), [Envelope](#), [Fusion](#)

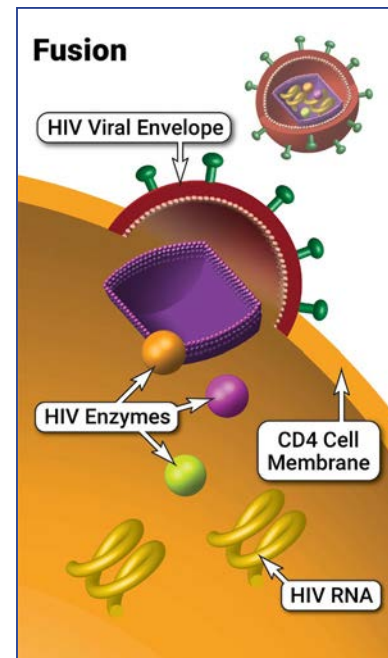


Figure 37

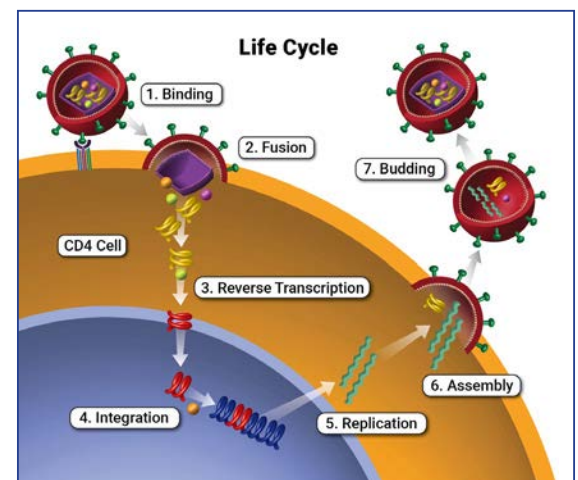


Figure 38

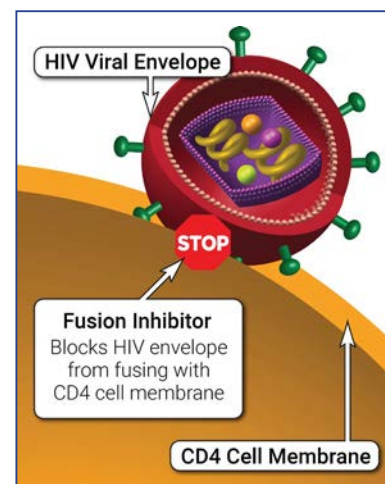


Figure 39

G

Gag

A major HIV gene that encodes the Gag polyprotein (a long protein chain). The Gag polyprotein is broken down into four structural proteins of HIV, including the matrix and core proteins. In addition to referring to the gene, Gag can also refer to the proteins produced by the gene. Gag proteins are important for HIV assembly, budding, and maturation.

Gamma Globulin

A group of proteins found in blood plasma. Injections of gamma globulin, which contain high levels of antibodies, can be given to boost a person's immune system.

Related Term(s): [Antibody](#)

Gamma-Glutamyl Transferase

SEE: [Gamma-Glutamyl Transpeptidase](#)

Gamma-Glutamyl Transpeptidase (GGT)

Synonym(s): Gamma-Glutamyl Transferase

An enzyme found in many organs in the body, including the liver. Gamma-glutamyl transpeptidase may be measured as part of a liver function test.

Related Term(s): [Liver Function Test](#)

Gastroenteritis

Inflammation of the stomach and intestinal tract.

Gastrointestinal (GI)

Pertaining to the stomach and intestinal tract. Gastrointestinal (GI) symptoms, such as nausea, vomiting, and diarrhea, may be caused by HIV, opportunistic infections, or some antiretroviral (ARV) drugs.

Gene

The basic physical unit of inheritance. A gene is a short segment of DNA (or in the case of some viruses, RNA) that contains instructions for making proteins.

Related Term(s): [Deoxyribonucleic Acid](#), [Genome](#), [Protein](#), [Ribonucleic Acid](#)

Gene Therapy

Manipulating genes to treat or prevent disease. Gene therapy techniques being researched include replacing a defective gene with a healthy copy of the gene, repairing an abnormal gene, inactivating an improperly functioning gene, and introducing a new disease-fighting gene.

Related Term(s): [Gene](#)

Generic Drug

A drug that has the same active ingredients, dosage, formulation, safety, strength, route of administration, quality, effectiveness, and intended use as a brand-name drug. For example, ibuprofen is a generic drug that has several manufacturers and brand names, including Advil and Motrin. Generic drugs are usually less expensive than brand-name drugs.

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.

Related Term(s): [Deoxyribonucleic Acid](#), [Ribonucleic Acid](#)

Genital Ulcer Disease

Any of several diseases that are characterized by genital sores. Genital ulcer diseases are usually sexually transmitted infections, including genital herpes, syphilis, and chancroid. Genital ulcer diseases increase the likelihood of sexual transmission of HIV.

Related Term(s): [Chancroid](#), [Herpes Simplex Virus 1 \(HSV-1\) Infection](#), [Herpes Simplex Virus 2 \(HSV-2\) Infection](#), [Sexually Transmitted Infection](#), [Syphilis](#)

Genital Warts

Synonym(s): Condyloma Acuminatum, Venereal Warts

A sexually transmitted infection caused by the human papillomavirus (HPV). Genital warts appear as raised pink or flesh-colored bumps on the surface of or the tissue surrounding the vagina, cervix, tip of the penis, or anus.

Related Term(s): [Human Papillomavirus](#), [Sexually Transmitted Infection](#)

Genitourinary System

SEE: [Genitourinary Tract](#)

Genitourinary Tract

Synonym(s): Genitourinary System, Urogenital System, Urogenital Tract

All organs involved in the production and excretion of urine plus all organs involved with reproduction. Organs of the genitourinary tract include the kidneys, bladder, fallopian tubes, and penis.

Genome

The complete genetic material of an organism, including all of its genes. The genome is contained in a set of chromosomes in humans and in a DNA or RNA molecule in viruses. The HIV genome consists of an RNA molecule and includes nine genes.

Related Term(s): [Deoxyribonucleic Acid](#), [Gene](#), [Ribonucleic Acid](#)

Genotypic Antiretroviral Resistance Test (GART)**Synonym(s):** Genotypic Assay

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).

Related Term(s): [Phenotypic Antiretroviral Resistance Test](#), [Resistance Testing](#)**Genotypic Assay****SEE:** [Genotypic Antiretroviral Resistance Test](#)**Glucose****Synonym(s):** Blood Sugar, Sugar

Blood sugar. Glucose, the main source of fuel for the body, is formed when foods are broken down in the digestive system. After digestion, glucose is absorbed into the bloodstream and then used for cell growth and energy.

Related Term(s): [Diabetes](#), [Hyperglycemia](#), [Insulin Resistance](#)**Glycoprotein (gp)**

A molecule that consists of a protein plus one or more carbohydrates.

Glycoprotein 41**SEE:** [gp41](#)**Glycoprotein 120****SEE:** [gp120](#)**Glycoprotein 160****SEE:** [gp160](#)**Gonorrhea****Synonym(s):** The Clap

A sexually transmitted infection caused by the bacterium *Neisseria gonorrhoeae*. A pregnant woman with gonorrhea may also pass the infection to the 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 likelihood of sexual transmission of HIV.

Related Term(s): [Sexually Transmitted Infection](#)**gp41****Synonym(s):** Glycoprotein 41, Viral Envelope Glycoprotein 41

A glycoprotein on the HIV envelope. HIV enters a host cell by using gp41 to fuse the HIV envelope with the host cell membrane.

Related Term(s): [Fusion](#), [Glycoprotein](#), [Life Cycle](#)**gp120****Synonym(s):** Glycoprotein 120, Viral Envelope Glycoprotein 120

A glycoprotein on the HIV envelope. gp120 binds to a CD4 receptor on a host cell, such as a CD4 T lymphocyte (CD4 cell). This starts the process by which HIV fuses its viral membrane with the host cell membrane and enters the host cell.

Related Term(s): [Envelope](#), [Fusion](#), [Glycoprotein](#), [Life Cycle](#)**gp160****Synonym(s):** Glycoprotein 160, Viral Envelope Glycoprotein 160

An HIV glycoprotein. gp160 is a precursor of the HIV envelope glycoproteins gp41 and gp120.

Related Term(s): [Glycoprotein](#), [gp41](#), [gp120](#), [Life Cycle](#)**Granulocyte**

A type of white blood cell that includes neutrophils, eosinophils, and basophils. Granulocytes help the body fight infection.

Related Term(s): [White Blood Cell](#)**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.

Related Term(s): [Granulocyte](#), [White Blood Cell](#)**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.

Related Term(s): [Granulocyte](#), [White Blood Cell](#)**Granulocytopenia**

A deficiency or abnormal decrease in the number of granulocytes, a type of white blood cell. Granulocytopenia may be caused by certain bone marrow diseases, chemotherapy, or certain drugs used to treat HIV and opportunistic infections.

Related Term(s): [Granulocyte](#)

Guillain-Barré Syndrome (GBS)

Synonym(s): Acute Inflammatory Demyelinating Polyneuropathy

A rare acute neurological disorder in which the immune system mistakenly attacks part of the peripheral nervous system. Guillain-Barré syndrome (GBS) primarily destroys the myelin that covers the peripheral nerves, causing the nerve signals to slow down. This damage can result in weakness and sometimes paralysis of the legs, arms, face, and breathing muscles. GBS is often preceded by a bacterial or viral infection and can occur early in the course of HIV.

Related Term(s): [Myelin](#), [Peripheral Nervous System](#)

Gynecomastia

Development of larger-than-normal breasts in males.

Gynecomastia is due to excess growth of breast tissue, not fat tissue. Gynecomastia is sometimes caused by natural hormonal changes, but it can also be due to use of certain medications, including antiretroviral (ARV) drugs.

Related Term(s): [Body Habitus Changes](#)



Half-Life ($t_{1/2}$) (Figure 40)

The time it takes a drug to lose half its original concentration or activity after being introduced into the body. Drug half-life is considered when determining drug dosing.

Hct

SEE: [Hematocrit](#)

Health Care Financing Administration

SEE: [Centers for Medicare and Medicaid Services](#)

Health Resources and Services Administration (HRSA)

The primary federal agency for improving access to health care services for people who are uninsured, isolated, or disproportionately affected by medical issues. 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 care.

Related Term(s): [Ryan White HIV/AIDS Program](#)

HELLP Syndrome

A rare but life-threatening complication of pregnancy that is characterized by **H**emolysis (breakdown of red blood cells), **E**levated **L**iver enzyme levels, and a **L**ow **P**latelet count. HELLP develops late in pregnancy, or sometimes after birth.

Helper T Cell

SEE: [CD4 T Lymphocyte](#)

Hematocrit (Hct)

Synonym(s): Hct

A laboratory test that measures the percentage of the volume of red blood cells in whole blood. Hematocrit is normally ordered as part of a complete blood count.

Related Term(s): [Complete Blood Count](#)

Hematotoxic

Poisonous to the blood and to the organs and tissues involved in the production of blood, such as the bone marrow.

Hematuria

Blood in the urine.

Hemoglobin

Synonym(s): Hgb

A protein in red blood cells that carries oxygen from the lungs to the tissues of the body. Hemoglobin also refers to the hemoglobin test, which is normally ordered as part of a complete blood count.

Related Term(s): [Complete Blood Count](#)

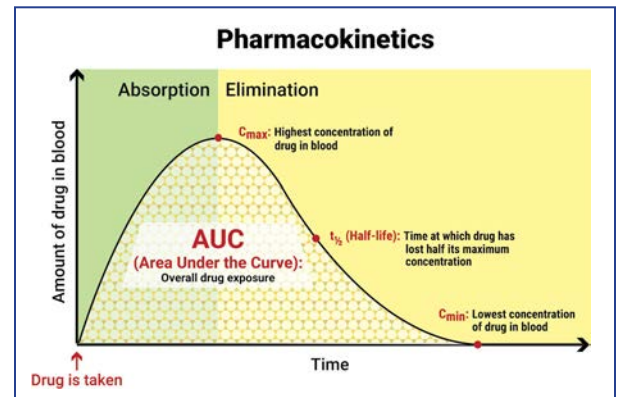


Figure 40

Hemolysis

Destruction of red blood cells. Hemolysis occurs as part of the natural life cycle of red blood cells, or it may be caused by certain conditions or drugs.

Related Term(s): [Red Blood Cell](#)

Hemophilia

A rare blood clotting disorder that is usually inherited and most often affects males. The main symptom of hemophilia is prolonged bleeding either spontaneously or after an injury or accident.

Hemorrhage

The loss of blood from a blood vessel. A hemorrhage, which may be internal or external, is often caused by injury or surgical complications or from advanced disease. The use of certain antiretroviral (ARV) drugs may cause internal hemorrhage.

Hepatic

Pertaining to the liver.

Related Term(s): [Liver](#)

Hepatic Necrosis

Death of liver cells. Hepatic necrosis may be caused by certain HIV-related drugs.

Related Term(s): [Liver](#)

Hepatic Steatosis

Synonym(s): Fatty Liver

Excessive accumulation of triglycerides and other fats in liver cells. Use of certain antiretroviral (ARV) drugs may cause hepatic steatosis.

Related Term(s): [Liver](#)

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).

Related Term(s): [Hepatitis B Virus Infection](#), [Hepatitis C Virus Infection](#), [Jaundice](#), [Liver](#)

Hepatitis A Virus Infection (HAV)

A highly contagious, acute liver infection caused by the hepatitis A virus (HAV). It is usually transmitted by contact with the feces of a person with hepatitis A, such as by eating contaminated food or drinking contaminated water, or by person-to-person contact. People with HIV and who have underlying liver disease have a higher likelihood of developing severe HAV than people who have HAV infection alone.

Related Term(s): [Hepatitis](#)

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.

Related Term(s): [Coinfection](#), [Hepatitis](#), [Opportunistic Infection](#)

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.

Related Term(s): [Coinfection](#), [Hepatitis](#), [Opportunistic Infection](#)

Hepatomegaly

Abnormal enlargement of the liver.

Related Term(s): [Liver](#)

Hepatotoxicity

Toxic damage to the liver. Drugs, including antiretroviral (ARV) drugs, can cause hepatotoxicity.

Related Term(s): [Liver](#)

Herpes Simplex Virus (HSV)

A highly contagious virus that causes lifelong herpes infection. HSV is categorized into two types—herpes simplex virus type 1 (HSV-1) and herpes simplex virus type 2 (HSV-2). HSV-1 is mainly transmitted by oral-to-oral contact and causes oral herpes, which affects areas in or around the mouth. HSV-1 can also be transmitted through oral-to-genital contact (oral sex) and causes genital herpes, which affects the genital or anal area. HSV-2 is transmitted by genital-to-genital sexual contact and causes genital herpes. In people who are immunocompromised, including people with HIV, the symptoms of HSV can be more severe and recurrent outbreaks can be more frequent than in people with healthy immune systems. People who have both HIV and genital herpes are more likely to transmit HIV to a partner who does not have HIV during sexual contact.

Related Term(s): [Herpes Simplex Virus 1 \(HSV-1\) Infection](#), [Herpes Simplex Virus 2 \(HSV-2\) Infection](#), [Herpesviruses](#)

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 likelihood of transmission. People who have both HIV and HSV-1 are more likely to transmit HIV to a partner who does not have HIV during sexual contact.

Related Term(s): [Herpesviruses](#), [Opportunistic Infection](#)

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 likelihood of transmission. People who have both HIV and HSV-2 are more likely to transmit HIV to a partner who does not have HIV during sexual contact.

Related Term(s): [Herpesviruses](#), [Opportunistic Infection](#)

Herpes Zoster

SEE: [Varicella Zoster Virus](#)

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).

Related Term(s): [Epstein-Barr Virus](#), [Herpes Simplex Virus 1 \(HSV-1\) Infection](#), [Herpes Simplex Virus 2 \(HSV-2\) Infection](#), [Kaposi Sarcoma-Associated Herpesvirus](#), [Varicella Zoster Virus](#)

Hgb

SEE: [Hemoglobin](#)

HHV-4

SEE: [Epstein-Barr Virus](#)

High Blood Pressure

SEE: [Hypertension](#)

Highly Active Antiretroviral Therapy (HAART)

SEE: [Antiretroviral Therapy](#)

Histiocyte

SEE: [Macrophage](#)

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.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#)

HIV-1

One of the two types of HIV, the virus that causes AIDS. AIDS is the most advanced stage of HIV. 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. HIV-1 is responsible for the majority of HIV cases worldwide. In the United States, unless otherwise noted, the term "HIV" primarily refers to HIV-1.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [HIV-2](#)

HIV-2

One of the two types of HIV, the virus that causes AIDS. AIDS is the most advanced stage of HIV. HIV-2 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. HIV-2 generally takes longer to progress to symptomatic HIV or AIDS than HIV-1.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [HIV-1](#)

HIV-Associated Adult-Onset Nematode Myopathy

SEE: [Nematode Rod Myopathy](#)

HIV-Associated Dementia (HAD)

SEE: [AIDS Dementia Complex](#)

HIV-Associated Nephropathy (HIVAN)

Kidney disease associated with HIV. 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.

Related Term(s): [Kidneys](#)

HIV-Associated Neurocognitive Disorders (HAND)

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

Related Term(s): [AIDS Dementia Complex](#)

HIV Care Continuum

SEE: [HIV Continuum of Care](#)

HIV Continuum of Care

(Figure 41)

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 viral 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.

Related Term(s): [HIV Navigation](#)

HIV Encephalopathy

SEE: [AIDS Dementia Complex](#)

HIV Gingivitis

SEE: [Linear Gingival Erythema](#)

HIV Navigation

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

Related Term(s): [HIV Continuum of Care](#), [Navigator](#)

HIV Prevention Trials Network (HPTN)

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

Related Term(s): [Clinical Trial](#)

HIV Preventive Vaccine

SEE: [Preventive HIV Vaccine](#)

HIV Progression

(Figure 42)

The course of HIV. HIV infection progresses in three stages: acute HIV, chronic HIV, and AIDS. During acute HIV, the virus multiplies rapidly. As acute HIV progresses to chronic HIV, HIV multiplies less rapidly and HIV levels drop. However, as chronic HIV 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.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [Acute HIV Infection](#), [Antiretroviral Therapy](#), [Chronic HIV Infection](#)

HIV Therapeutic Vaccine

SEE: [Therapeutic HIV Vaccine](#)

HIV Treatment Cascade

SEE: [HIV Continuum of Care](#)

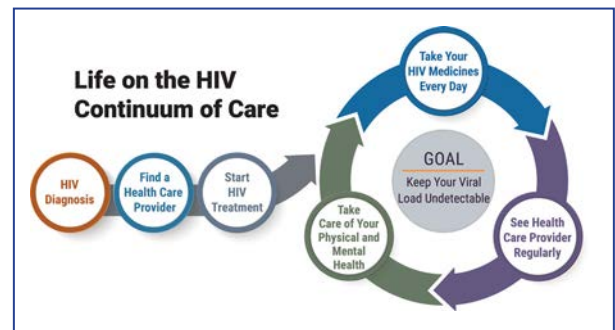


Figure 41

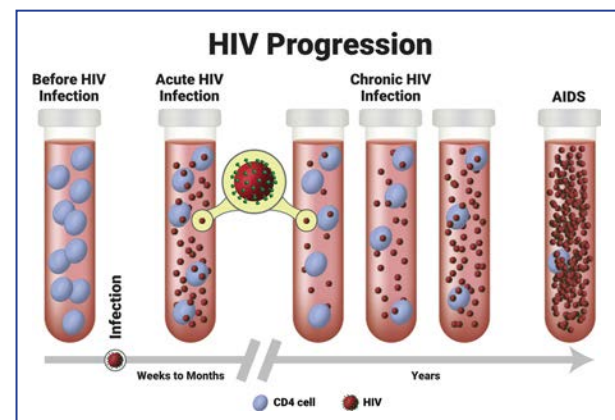


Figure 42

HIV Vaccine Trials Network (HVTN)

A federally funded international clinical trials network that works toward 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 vaccines and associated research methods.

Related Term(s): [Clinical Trial](#), [Preventive HIV Vaccine](#)

HIV Viral Core

SEE: [Capsid](#)

HIV Viral Envelope

SEE: [Envelope](#)

Hives

SEE: [Urticaria](#)

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.

Related Term(s): [Human Leukocyte Antigen Complex](#)

HLA-B*5701 Testing

SEE: [HLA-B*5701 Test](#)

HLA Complex

SEE: [Human Leukocyte Antigen Complex](#)

HMG-CoA Reductase Inhibitor

SEE: [Statin](#)

Hodgkin Disease

SEE: [Hodgkin Lymphoma](#)

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.

Related Term(s): [AIDS-Related Cancer](#), [Lymphoma](#)

Horizontal Transmission

SEE: [Secondary Transmission](#)

Hormone

A chemical messenger produced by the body and carried by the blood to tissues and organs. Hormones regulate many different body processes, including growth and development, metabolism, sexual function, reproduction, and mood. HIV can affect the production of hormones, such as testosterone.

Host

The animal or plant (or specific part of an animal or plant) in which another organism or microorganism lives. For example, CD4 cells infected with HIV are called host cells.

Related Term(s): [CD4 T Lymphocyte](#)

Human Growth Hormone (hGH)

A hormone that is produced by the pituitary gland and stimulates the growth of bones, muscles, and other organs. A synthetic version of human growth hormone (hGH) is approved by the U.S. Food and Drug Administration (FDA) for the treatment of AIDS-related wasting syndrome.

Related Term(s): [Wasting Syndrome](#)

Human Herpesvirus 3

SEE: [Varicella Zoster Virus](#)

Human Herpesvirus 4

SEE: [Epstein-Barr Virus](#)

Human Herpesvirus 8

SEE: [Kaposi Sarcoma-Associated Herpesvirus](#)

Human Herpesviruses

SEE: [Herpesviruses](#)

Human Immunodeficiency Virus (HIV)

(Figure 43)

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.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [HIV-1](#), [HIV-2](#), [Retrovirus](#)

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 Leukocyte Antigen System

SEE: [Human Leukocyte Antigen Complex](#)

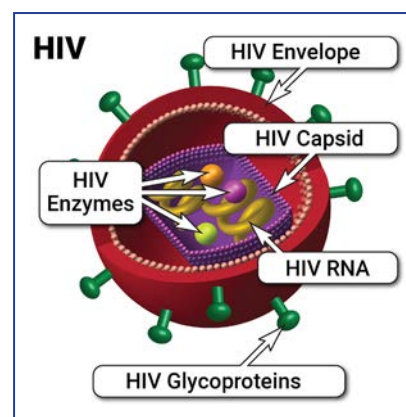


Figure 43

Human Papillomavirus (HPV)

The virus that causes human papillomavirus (HPV) infection, the most common sexually transmitted infection. 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.

Related Term(s): [AIDS-Defining Condition](#), [Cervical Cancer](#), [Opportunistic Infection](#), [Sexually Transmitted Infection](#)

Human Subjects Protection Review Board

SEE: [Institutional Review Board](#)

Human T-Cell Lymphotropic Virus Type 1 (HTLV-1)

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 the child when giving birth or through breastfeeding. 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.

Related Term(s): [Retrovirus](#)

Humoral Immune Response

SEE: [Humoral Immunity](#)

Humoral Immunity

Synonym(s): Humoral Immune Response

Type of immune response that is mediated by antibodies.

Related Term(s): [Antibody](#), [Cell-Mediated Immunity](#)

Hyperadiposity

SEE: [Lipohypertrophy](#)

Hypergammaglobulinemia

A higher-than-normal level of gamma globulin in the blood. Gamma globulins are a group of blood proteins that includes proteins that act as antibodies. Hypergammaglobulinemia may occur with chronic infections, including HIV.

Hyperglycemia

Abnormally high blood sugar (glucose) level. Use of some antiretroviral (ARV) drugs may cause hyperglycemia.

Hyperlipidemia

Excess lipids (cholesterol, triglycerides, or both) in the blood. Hyperlipidemia increases the risk of heart disease and stroke. Hyperlipidemia may be caused by HIV or use of some antiretroviral (ARV) drugs.

Hyperplasia

An increase in the number of cells in a tissue or organ. Hyperplasia may be due to a normal, increased demand for cells or may be a sign of precancerous changes.

Hypersensitivity

Synonym(s): Hypersensitivity Reaction

An exaggerated immune response to a specific antigen or drug. Hypersensitivity reactions, including allergic reactions, can be life-threatening. Use of some antiretroviral (ARV) drugs may cause a hypersensitivity reaction.

Hypersensitivity Reaction

SEE: [Hypersensitivity](#)

Hypersensitivity Syndrome

Synonym(s): DRESS, Drug Hypersensitivity Syndrome, Drug Reaction With Eosinophilia and Systemic Symptoms

A life-threatening allergic reaction to a drug. Hypersensitivity syndrome is characterized by fever, rash, organ involvement (most frequently the liver), and high blood levels of eosinophils (a type of white blood cell). Use of certain antiretroviral (ARV) drugs may cause hypersensitivity syndrome.

Hypertension

Synonym(s): High Blood Pressure

Persistently elevated blood pressure. Blood pressure is the force of blood pushing against the walls of the arteries. Hypertension can harm the arteries and increase the risk of stroke, heart attack, and kidney failure.

Hypertriglyceridemia

Excessive accumulation of triglycerides (a type of fat) in the blood. Hypertriglyceridemia increases the risk of high blood pressure, heart disease, and stroke. Use of some antiretroviral (ARV) drugs can cause hypertriglyceridemia.

Related Term(s): [Triglycerides](#)

Hyperuricemia

Much higher-than-normal levels of uric acid in the blood. Hyperuricemia may be an adverse effect of some antiretroviral (ARV) drugs.

Hypogammaglobulinemia

Abnormally low levels of gamma globulin in the blood. Gamma globulins are a group of blood proteins that includes proteins that act as antibodies. People with hypogammaglobulinemia have a higher likelihood of infections. Hypogammaglobulinemia may be due to certain genetic diseases or to acquired diseases such as HIV.

Related Term(s): [Gamma Globulin](#)

Hypogonadism

Condition in which the sex glands produce little or no hormones. Hypogonadism commonly occurs in people with HIV.

Related Term(s): [Hormone](#)

Hypoxia

An insufficient supply of oxygen to the cells and tissues of the body.

I

Idiopathic

Occurring spontaneously or from an unknown cause.

Idiopathic Thrombocytopenic Purpura

SEE: [Immune Thrombocytopenia](#)

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.

Related Term(s): [Antigen](#)

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 are still under investigation and have not been approved by the U.S. Food and Drug Administration (FDA) for patient use.

Related Term(s): [Immune Response](#), [Immune System](#), [Investigational Drug](#)

Immune Reconstitution Inflammatory Syndrome (IRIS)

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

In HIV, 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 Reconstitution Syndrome

SEE: [Immune Reconstitution Inflammatory Syndrome](#)

Immune Response

Actions of the immune system to defend the body against bacteria, viruses, or other substances that the body recognizes as foreign and harmful.

Related Term(s): [Immune System](#)

Immune Restoration Disease

SEE: [Immune Reconstitution Inflammatory Syndrome](#)

Immune Serum Globulin

SEE: [Intravenous Immunoglobulin](#)

Immune System

(Figure 44)

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 gradually destroys the immune system.

Related Term(s): [Granulocyte](#), [Lymph Nodes](#), [Macrophage](#), [T Lymphocyte](#)

Immune Thrombocytopenia (ITP)

Synonym(s): Autoimmune Thrombocytopenic Purpura, Idiopathic Thrombocytopenic Purpura, Immune Thrombocytopenic Purpura

An autoimmune disorder in which the immune system destroys platelets. The destruction of platelets leads to abnormal blood clotting and easy or excessive bruising and bleeding. In most cases, an autoimmune response is thought to cause immune thrombocytopenia (ITP). The disorder may also develop with a viral infection, including HIV.

Related Term(s): [Platelet](#)

Immune Thrombocytopenic Purpura

SEE: [Immune Thrombocytopenia](#)

Immunity

(Figure 45)

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.

Related Term(s): [Acquired Immunity](#), [Innate Immunity](#)

Immunization

SEE: [Vaccination](#)

Immunocompetent

When the body is able to produce a normal immune response.

Related Term(s): [Immune Response](#)

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.

Related Term(s): [Immune Response](#)

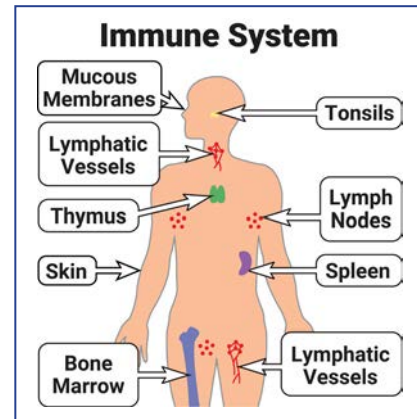


Figure 44

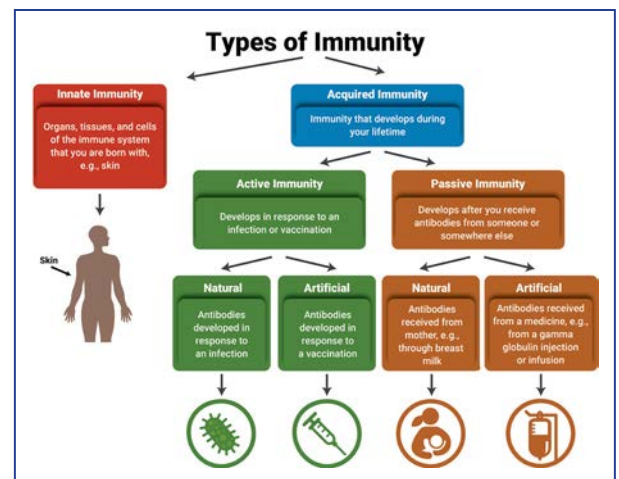


Figure 45

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.

Related Term(s): [Acquired Immunodeficiency Syndrome](#), [Immune Response](#)

Immunogenicity

The ability or the extent to which a substance is able to stimulate an immune response.

Related Term(s): [Immune Response](#)

Immunoglobulin

SEE: [Antibody](#)

Immunologic

Pertaining to the immune system.

Related Term(s): [Immune System](#)

Immunomodulators

SEE: [Immune Modulators](#)

Immunomodulatory Therapy

SEE: [Immunotherapy](#)

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.

Related Term(s): [Immune Response](#)

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.

Related Term(s): [Immune System](#)

Implant

Long-acting dosage forms that provide continuous release of a drug, often for an extended period of time. Implants are usually placed under the skin or in a specific region of the body.

In Utero

In the uterus (womb). *In utero* also refers to the length of time that a fetus is in the uterus of the pregnant female.

In Vitro*(Figure 46)*

In an artificial environment outside the body, such as in a test tube or petri dish in a laboratory.

Related Term(s): [In Vivo](#)

In Vitro Fertilization (IVF)

A medical procedure used to help a woman become pregnant. *In vitro* fertilization (IVF) involves removing mature eggs from a woman's ovary, fertilizing the eggs with sperm in a laboratory, and then introducing the resulting embryo into a woman's uterus.

In Vivo*(Figure 46)*

In the living body of a plant, animal, or human.

Related Term(s): [In Vitro](#)

Incidence

The number of new cases of a condition, symptom, death, or injury that develops in a specific area during a specific time period.

Related Term(s): [Prevalence](#)

Inclusion/Exclusion Criteria

SEE: [Eligibility Criteria](#)

Incubation Period

The time between infection with a pathogen and the onset of disease symptoms.

Related Term(s): [Pathogen](#)

Indian Health Service (IHS)

A federal agency responsible for providing federal health services to American Indians and Alaska Natives. The Indian Health Service (IHS) delivers preventive, curative, and community health care to American Indians and Alaska Natives in hospitals, clinics, and other settings throughout the United States.

Indication

A sign, symptom, or medical condition that leads to the recommendation of a treatment, test, or procedure. For example, HIV infection is an indication to start antiretroviral therapy (ART).

Infection

Invasion and growth of an infectious microorganism, such as a bacterium or virus, in the body. Infection can also refer to the disease caused by the infectious microorganism. For example, HIV infection is caused by the human immunodeficiency virus (HIV).

Infectious

Capable of causing infection.

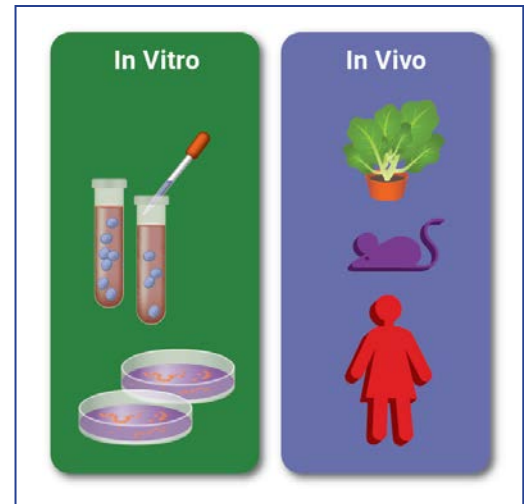


Figure 46

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.

Related Term(s): [Contagious Disease](#)

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.

Infusion

Administration of a substance, such as a drug or glucose in solution, typically into a vein (intravenous). Infusions can also be administered into bone (intraosseous), muscle (intramuscular), and the space that surrounds the spinal cord (epidural).

Injection Drug Use

A method of illicit drug use. The drugs are injected directly into the body—into a vein, into a muscle, or under the skin—with a needle and syringe. Blood-borne viruses, including HIV and hepatitis, can be transmitted via shared needles or other drug injection equipment.

Injection Site Reaction

An adverse reaction, such as rash or redness, at the site of an injection.

Related Term(s): [Adverse Event](#)

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.

Related Term(s): [Immunity](#)

Inoculation

SEE: [Vaccine](#)

Institutional Review Board (IRB)

Synonym(s): Human Subjects Protection Review Board

An independent committee of medical, scientific, and nonscientific members established to review, approve, and monitor research involving human participants. An institutional review board (IRB) protects the rights and welfare of human participants by assuring that a clinical trial is well designed, does not involve undue risks, and includes safeguards for participants. Most, but not all, clinical trials in the United States are approved and monitored by an IRB.

Related Term(s): [Clinical Trial](#)

Insulin

A hormone that is secreted by the pancreas and controls the amount of glucose in the blood. Glucose is the body's main source of energy. Insulin stimulates cells to absorb and use glucose for energy. Without insulin, cells starve for energy and glucose builds up in the blood (hyperglycemia). Insulin also refers to the laboratory-made drug.

Related Term(s): [Diabetes](#), [Glucose](#), [Pancreas](#)

Insulin Resistance

The body's decreasing ability to respond to and use the insulin it produces. As a result, excess glucose builds up in the blood (hyperglycemia). Insulin resistance increases the risk of developing prediabetes and type 2 diabetes. Use of certain antiretroviral (ARV) drugs may cause insulin resistance.

Related Term(s): [Diabetes](#), [Insulin](#)

Insulin Resistance Syndrome

SEE: [Metabolic Syndrome](#)

Insulin Sensitivity

The degree to which the body's cells respond to insulin and take up glucose from the blood.

Related Term(s): [Insulin](#)

Integrase

(Figure 47)

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).

Related Term(s): [Enzyme](#), [Integrase Strand Transfer Inhibitor](#), [Integration](#), [Life Cycle](#), [Provirus](#)

Integrase Inhibitor

SEE: [Integrase Strand Transfer Inhibitor](#)

Integrase Strand Transfer Inhibitor (INSTI)

(Figure 47, Figure 48)

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.

Related Term(s): [Drug Class](#), [Integrase](#)

Integration

(Figure 47, Figure 49)

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.

Related Term(s): [Integrase](#), [Integrase Strand Transfer Inhibitor](#), [Life Cycle](#), [Provirus](#)

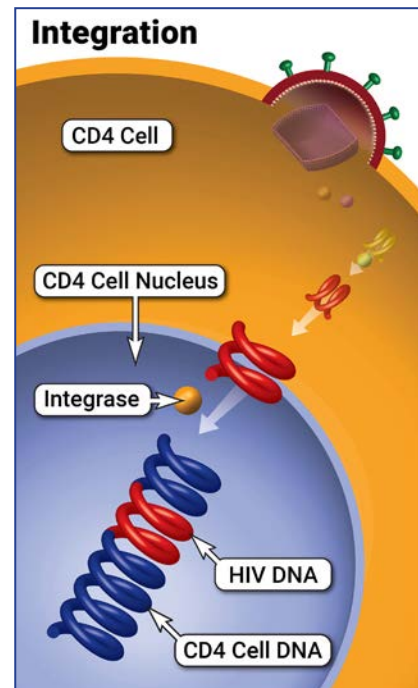


Figure 47

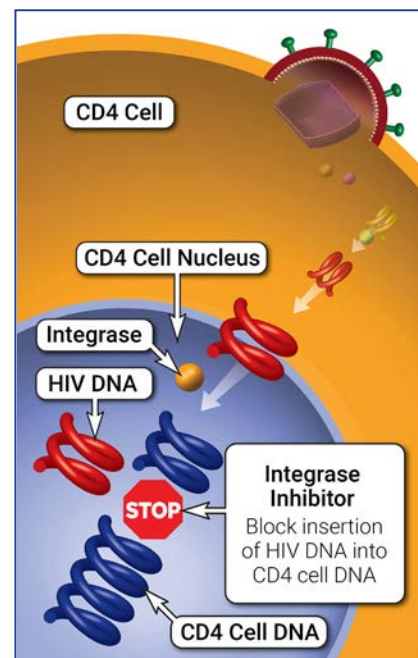


Figure 48

Interferon (IFN)

Cytokines secreted by certain cells in response to an antigen, usually a virus. Interferon signals neighboring cells into action and inhibits the growth of malignant cells. There are three types of interferons: alpha, beta, and gamma. Laboratory-made interferons are used to treat certain cancers and opportunistic infections.

Related Term(s): [Antigen](#), [Cytokine](#)

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.

Related Term(s): [Cytokine](#)

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.

Related Term(s): [Cytokine](#)

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 and its consequences in infants, children, adolescents, and pregnant/postpartum women.

Related Term(s): [Clinical Trial](#), [Pediatric AIDS Clinical Trials Group](#)

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

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

Related Term(s): [Clinical Trial](#)

Interstitial Nephritis

A kidney disorder in which the spaces between the kidney tubules (tiny urine-collecting tubes) become swollen. Interstitial nephritis can impair kidney function, including a kidney's ability to filter waste and extra fluid from the body.

Related Term(s): [Kidneys](#)

Intervention

A measure taken to prevent or treat disease or to improve health in other ways. The term is used to describe the process or action that is the focus of a clinical trial. Examples of interventions include vaccines, drugs, medical devices, and palliative care.

Interventional Study

SEE: [Interventional Trial](#)

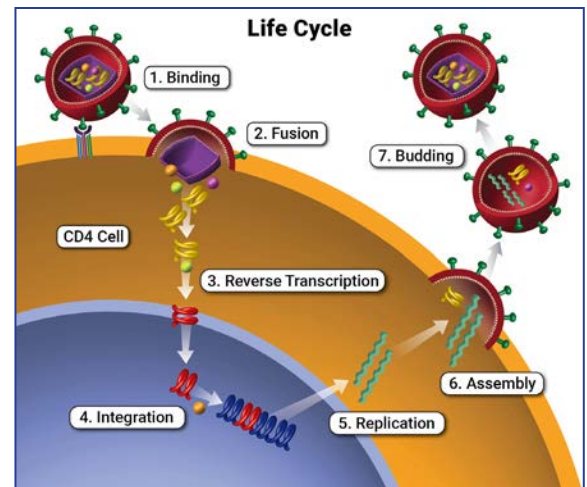


Figure 49

Interventional Trial

Synonym(s): Interventional Study

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.

Related Term(s): [Clinical Trial](#)

Intra-Abdominal Fat

SEE: [Visceral Adipose Tissue](#)

Intracytoplasmic Sperm Injection (ICSI)

A type of *in vitro* (outside the body) fertilization that is used to overcome male infertility. Intracytoplasmic sperm injection (ICSI) involves injecting a single sperm into an egg that has been removed from a woman's ovary. The fertilized egg can then be returned to the woman's uterus. ICSI, which is always combined with sperm washing, can be considered as a reproductive option for an HIV-serodifferent couple. ICSI is considered when the male partner has HIV and insemination with donor sperm from a man who does not have HIV is not an option.

Related Term(s): [Serodifferent Couple](#), [Sperm Washing](#)

Intradermal

Within or between the layers of the skin. Some drugs are given as intradermal injections.

Intramuscular (IM)

Situated or occurring inside a muscle. An intramuscular (IM) injection is an injection given directly into a muscle.

Intrapartum

(Figure 50)

The time period spanning childbirth, from the onset of labor through delivery of the placenta. Intrapartum can refer to both the woman and the fetus.

Related Term(s): [Antepartum](#), [Postpartum](#)

Intrauterine Insemination (IUI)

Synonym(s): Artificial Insemination

A medical procedure used to help a woman become pregnant. Intrauterine insemination (IUI) involves placing sperm directly in a woman's uterus after ovulation.

Related Term(s): [Serodifferent Couple](#)

Intravaginal

Within or introduced into the vagina.



Figure 50

Intravaginal Ring (IVR)

Synonym(s): Vaginal Ring

A flexible ring-shaped drug delivery product worn inside the vagina that women can insert and remove themselves. An IVR provides sustained and controlled drug release within the vagina over an extended period of time. IVRs are being studied as a potential delivery device for microbicides to protect women against HIV. IVRs are also being investigated as a way to deliver multipurpose prevention technologies, which can simultaneously protect women against HIV, other sexually transmitted infections (STIs), and unintended pregnancy.

Intravenous (IV)

Situated or occurring inside a vein. An intravenous (IV) injection is an injection given directly into a vein.

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 U.S. Food and Drug Administration (FDA) for use in children with HIV to reduce the risk of serious bacterial infections.

Related Term(s): [Antibody](#)

Invasive

Pertaining to an infection or disease that spreads to surrounding tissues or to other parts of the body. Invasive can also refer to a medical procedure that involves entering a part of the body, such as through an incision.

Investigational Drug

Synonym(s): Experimental Drug

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

Related Term(s): [U.S. Food and Drug Administration](#)

Investigational New Drug (IND) Application

(Figure 51)

A drug sponsor’s request to the U.S. 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.

Related Term(s): [Investigational Drug](#), [U.S. Food and Drug Administration](#)

Ischemia

A decrease in blood flow to an organ or tissue of the body, usually due to a blocked artery.

Isosporiasis

SEE: [Cystoisosporiasis](#)

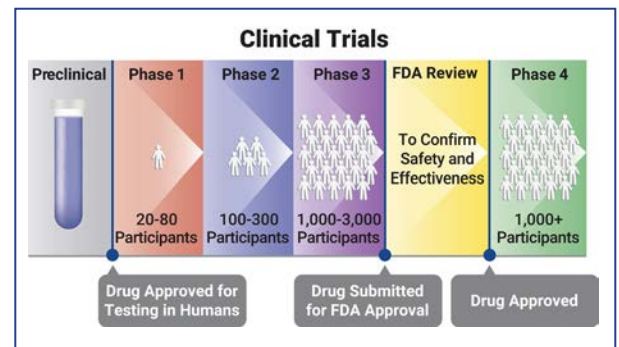


Figure 51

J

Jaundice

Yellowing of the skin, whites of the eyes, or mucous membranes. Jaundice is a sign that the blood contains too much bilirubin, a substance produced when the liver breaks down red blood cells. It usually indicates liver dysfunction. Jaundice may be caused by liver diseases, such as hepatitis and cirrhosis; blood diseases; infections; or blocked bile ducts (gallbladder disease). Jaundice may also be caused by certain antiretroviral (ARV) drugs.

Related Term(s): [Bilirubin](#), [Liver](#)

K

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.

Related Term(s): [AIDS-Defining Condition](#), [Kaposi Sarcoma-Associated Herpesvirus](#)

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.

Related Term(s): [Herpesviruses](#), [Kaposi Sarcoma](#)

Karnofsky Performance Status (KPS)

Synonym(s): Karnofsky Score

A way to rate a person's ability to perform activities of daily living. The Karnofsky Performance Status is used to evaluate whether a person should receive a therapy, whether a therapy should be adjusted or discontinued, and whether a person may participate in a clinical trial. The scores range from 0 to 100, with a higher score indicating that a person is better able to perform daily activities.

Karnofsky Score

SEE: [Karnofsky Performance Status](#)

Kernicterus

Synonym(s): Exipient Hyperbilirubinemia

A rare type of brain damage associated with high levels of bilirubin. Kernicterus is usually seen only in infants with untreated jaundice, and it very rarely occurs in adults. Some antiretroviral (ARV) drugs are not approved for use in infants because of the risk of kernicterus.

Related Term(s): [Bilirubin](#), [Jaundice](#)

Kick and Kill Strategy

SEE: [Shock and Kill Strategy](#)

Kick-Kill Strategy

SEE: [Shock and Kill Strategy](#)

Kidneys

A pair of bean-shaped organs located in the abdomen, near the middle of the back. The kidneys filter the blood to remove waste products and extra water. The wastes and water become urine, which is eliminated from the body. The kidneys also release hormones, which help with regulating blood pressure, stimulating the body to produce red blood cells, and maintaining a normal chemical balance in the body.

Killer T Cell

SEE: [CD8 T Lymphocyte](#)

L

Lactic Acid

Acid formed by the breakdown of glucose when oxygen levels in the body are low. The body uses lactic acid for energy.

Related Term(s): [Lactic Acidosis](#)

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 or use of certain antiretroviral (ARV) drugs.

Latency-Reversing Agents

One of the main obstacles to curing HIV 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 U.S. Food and Drug Administration (FDA).

Related Term(s): [CD4 T Lymphocyte](#), [Investigational Drug](#), [Latent HIV Reservoir](#)

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. 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.

Related Term(s): [Viral Latency](#)

Latent Tuberculosis Infection (LTBI)

A condition in which *Mycobacterium tuberculosis* is present in the body, but the person does not have tuberculosis (TB) disease. Because the bacteria are inactive, the person does not feel sick and does not have any symptoms of TB. A person with latent TB cannot spread TB to others. Without treatment, latent TB can advance to TB disease, especially in people with weakened immune systems.

Related Term(s): [Tuberculosis](#), [Tuberculosis Disease](#)

Leishmaniasis

A disease caused by the protozoan *Leishmania*, which is usually transmitted by the bites of infected sand flies. There are three major types of leishmaniasis: cutaneous, mucocutaneous, and visceral. Visceral leishmaniasis affects internal organs and is characterized by fever, weight loss, enlargement of the spleen and liver, and a drop in blood cell production with possible anemia. In people with AIDS, visceral leishmaniasis is the most common type, and, if left untreated, it is nearly always fatal.

Related Term(s): [Opportunistic Infection](#)

Lentivirus

A subgroup of retroviruses, which includes HIV.

Related Term(s): [Retrovirus](#)

Lesion

Damage or an abnormal structural change to a tissue, organ, or body part because of injury or disease. Examples of a lesion include a wound or an infected or diseased patch of skin.

Leukocyte

SEE: [White Blood Cell](#)

Leukocytosis

An increase in the number of white blood cells. Leukocytosis often occurs during acute infection or inflammation.

Related Term(s): [White Blood Cell](#)

Leukopenia

A low or reduced number of white blood cells.

Related Term(s): [White Blood Cell](#)

Life Cycle

(Figure 52)

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.

Related Term(s): [Assembly](#), [Binding](#), [Budding](#), [Fusion](#), [Integration](#), [Replication](#), [Reverse Transcription](#)

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 in people with HIV.

Lipid

Fat or fat-like substances found in the blood and body tissues. Lipids serve as building blocks for cells and as a source of energy for the body. Cholesterol and triglycerides are types of lipids.

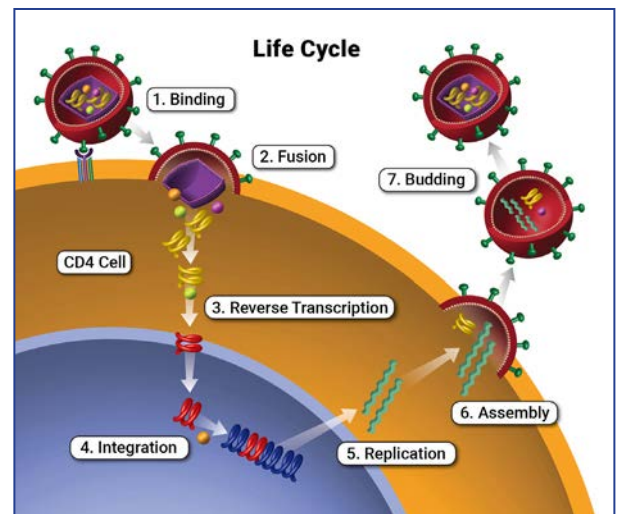


Figure 52

Lipid-Lowering Agent

SEE: [Statin](#)

Lipid Profile

Synonym(s): Coronary Risk Profile

A group of blood tests that measure cholesterol and triglyceride levels. Test results are used to determine a person's risk for heart disease or stroke. High lipid levels may be associated with use of some antiretroviral (ARV) drugs.

Lipoatrophy

Loss of fat from specific areas of the body, especially from the face, arms, legs, and buttocks. Lipoatrophy may be linked to HIV or use of certain antiretroviral (ARV) drugs.

Related Term(s): [Lipodystrophy Syndrome](#)

Lipodystrophy Syndrome

The changes in body fat (loss and/or gain of body fat) and associated metabolic disturbances that occur in some people with HIV. Lipodystrophy syndrome may be linked to HIV or use of certain antiretroviral (ARV) drugs.

Related Term(s): [Dorsocervical Fat Pad](#), [Lipoatrophy](#), [Lipohypertrophy](#), [Lipoma](#), [Wasting Syndrome](#)

Lipohypertrophy

Synonym(s): Hyperadiposity

Abnormal accumulation of fat, particularly within the abdominal cavity, the upper back (buffalo hump), and subcutaneous tissue (peripheral lipomatosis). Lipohypertrophy may be linked to HIV or use of certain antiretroviral (ARV) drugs.

Related Term(s): [Lipodystrophy Syndrome](#)

Lipoma

Benign (not cancerous) lumps of fat that develop under the skin. Lipomas can develop as a result of lipodystrophy, which may be linked to HIV or use of certain antiretroviral (ARV) drugs.

Related Term(s): [Lipodystrophy Syndrome](#)

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.

Related Term(s): [Vaccine](#)

Liver

An organ of the digestive system that is located on the right side of the upper abdomen. Major functions of the liver include converting food into energy, producing bile (a liquid that helps with digestion), processing drugs and alcohol, removing toxins from the body, filtering blood, and producing blood cells and blood-clotting components.

Related Term(s): [Hepatitis](#)

Liver Function Test

A group of blood tests used to detect, evaluate, and monitor liver disease or damage. A liver function test measures enzymes, proteins, and other substances that are produced or excreted by the liver, such as alanine aminotransferase (ALT), alkaline phosphatase (ALP), aspartate aminotransferase (AST), gamma-glutamyl transpeptidase (GGT), bilirubin, and albumin.

Related Term(s): [Alanine Aminotransferase](#), [Albumin](#), [Aspartate Aminotransferase](#), [Bilirubin](#), [Gamma-Glutamyl Transpeptidase](#), [Hepatotoxicity](#), [Liver](#)

Localized

Affecting only a specific or limited part of the body rather than the entire body.

Related Term(s): [Systemic](#)

Log

SEE: [Log10](#)

Log10

Synonym(s): Common Logarithm, Log, Logarithm

A mathematical term used to describe changes in viral load (HIV RNA). For example, if the viral load is 20,000 copies/mL, then a 1-log increase equals a tenfold (10 times) increase, or 200,000 copies/mL. A 2-log increase equals a hundredfold increase, or 2,000,000 copies/mL.

Related Term(s): [Viral Load](#), [Viral Load Test](#)

Logarithm

SEE: [Log10](#)

Long-Term Nonprogressors (LTNP)

(Figure 53)

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/mm³ indicates that a person has AIDS. In general, long-term nonprogressors do not develop AIDS or may do so very slowly.

Related Term(s): [Elite Controllers](#)

Lumbar Puncture

SEE: [Spinal Tap](#)

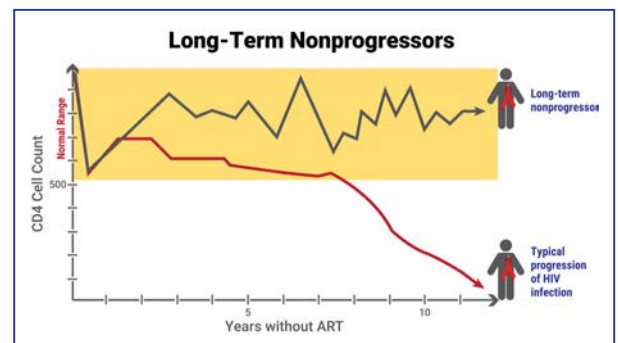


Figure 53

Lymph

A clear-to-yellowish fluid that circulates throughout the body. In addition to its fluid component, lymph consists of white blood cells (especially lymphocytes) and a small concentration of red blood cells and proteins. As lymph circulates, it picks up unwanted materials, such as bacteria and dead cells, which are then filtered through the lymph nodes. Lymph also supplies mature lymphocytes to the blood.

Related Term(s): [Lymph Nodes](#)

Lymph Nodes

Very small organs of the lymphatic system. Lymph nodes are located in many areas of the body, mainly in the neck, under the arms, and in the groin. Lymph nodes play a crucial role in the immune system. When lymph is filtered through the lymph nodes, foreign substances are trapped and destroyed by the lymphocytes that line the walls of the lymph nodes.

Related Term(s): [Lymph](#), [Lymphatic System](#), [Lymphocyte](#)

Lymphadenopathy

Abnormal enlargement of lymph nodes, usually associated with an infection or disease.

Lymphadenopathy may also occur as part of a hypersensitivity reaction to certain antiretroviral (ARV) drugs.

Related Term(s): [Hypersensitivity](#), [Lymph Nodes](#)

Lymphatic System

A network of organs, nodes, ducts, and vessels that produce and transport lymph from the body's tissues to the bloodstream. The lymphatic system helps to maintain fluid balance in the tissues and blood; to supply nutrients, oxygen, and hormones to cells; to transport fats, proteins, and white blood cells to the blood; and to fight infections and filter out foreign organisms and waste products.

Related Term(s): [Lymph Nodes](#)

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.

Related Term(s): [White Blood Cell](#)

Lymphocyte Proliferation Assay

A laboratory test that measures the ability of lymphocytes to replicate (proliferate) when exposed to an antigen.

Related Term(s): [Antigen](#)

Lymphocytic Interstitial Pneumonitis

SEE: [Lymphoid Interstitial Pneumonitis](#)

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 infection. Symptoms include genital or rectal ulcers. LGV may increase the likelihood for sexual transmission of HIV.

Related Term(s): [Sexually Transmitted Infection](#)

Lymphoid Interstitial Pneumonia

SEE: [Lymphoid Interstitial Pneumonitis](#)

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 younger than age 13.

Related Term(s): [AIDS-Defining Condition](#)

Lymphoma

A type of cancer that starts in the tissues of the lymphatic system, including the lymph nodes, spleen, and bone marrow. In people who have HIV, certain lymphomas, such as Burkitt lymphoma, are AIDS-defining conditions.

Related Term(s): [AIDS-Defining Condition](#), [Lymphatic System](#)

Lymphopenia

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

Related Term(s): [Lymphocyte](#)

Lymphoproliferative Response

An immune system response that stimulates lymphocytes (a type of white blood cell) to multiply rapidly.

Related Term(s): [Lymphocyte](#)

Lysis

The breakdown or destruction of cells. Lysis may be caused by chemical or physical damage, such as by drugs or injury, or infection.

M

M-Tropic Virus

SEE: [R5-Tropic Virus](#)

Macrophage

Synonym(s): Histiocyte

A type of white blood cell that fights infection by ingesting foreign substances, such as microorganisms and dead cells. Macrophages also act as antigen-presenting cells to stimulate other immune cells to fight infection.

Related Term(s): [Antigen-Presenting Cell](#), [White Blood Cell](#)

Macrophage-Tropic Virus

SEE: [R5-Tropic Virus](#)

Magnetic Resonance Imaging (MRI)

Synonym(s): Nuclear Magnetic Resonance

A noninvasive procedure that uses magnetic fields and radio waves to produce three-dimensional computerized images of areas inside the body.

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 from advancing to AIDS.

Related Term(s): [Primary Prophylaxis](#)

Malabsorption Syndrome

A group of symptoms that occur when the small intestine cannot absorb nutrients properly. Symptoms include abdominal pain, bloating, gas, and diarrhea. Malabsorption syndrome may be caused by certain diseases, infections, or drugs.

Malaise

A general feeling of discomfort, illness, or lack of well-being.

Malaria

A potentially life-threatening disease caused by four strains of protozoa called *Plasmodium*. Malaria is typically spread by the bite of a mosquito infected with the protozoa. Malaria is endemic in parts of Asia, Africa, Central and South America, Oceania, and certain Caribbean islands. Symptoms of malaria can include extreme exhaustion, chills, profuse sweating, fever, vomiting, diarrhea, other flu-like symptoms, and jaundice. Both malaria and HIV cause substantial morbidity and mortality worldwide, particularly in sub-Saharan Africa. Research has shown important interactions between malaria and HIV.

Related Term(s): [Opportunistic Infection](#)

Male Circumcision

Surgical removal of the foreskin of the penis. Male circumcision is performed for potential health benefits and for cultural or religious reasons. Possible health benefits of male circumcision include a lower risk of urinary tract infections, penile cancer, and sexually transmitted infections. Circumcised men are less likely than uncircumcised men to get HIV from female partners, but circumcision is less effective than other HIV prevention options.

Malignant

Threatening to health or life, such as a malignant disease. Malignant may also refer to the uncontrolled, invasive growth of cells, such as in a malignant tumor.

Mantoux Tuberculin Skin Test

SEE: [Tuberculin Skin Test](#)

Mast Cell

Synonym(s): Mastocyte

A type of white blood cell found in almost all tissues, particularly in the skin. Mast cells help the body fight infection by triggering an inflammatory response to an antigen.

Related Term(s): [Antigen](#), [White Blood Cell](#)

Mastocyte

SEE: [Mast Cell](#)

Maternal-Child Transmission

SEE: [Perinatal Transmission](#)

Maturation Inhibitor (MI)

Maturation inhibitors (MIs) are a class of drugs that act during the last stage of the HIV life cycle. MIs bind to a long HIV protein chain called Gag and prevent the HIV protease enzyme from breaking up the Gag protein chain. By blocking protease activity, MIs prevent immature HIV from becoming a mature virus that can infect other CD4 cells. Currently, MIs are still under clinical investigation, and there are no MIs approved by the U.S. Food and Drug Administration (FDA).

Medication Event Monitoring System (MEMS)

A device used to monitor medication adherence. The medication event monitoring system (MEMS) is a cap that fits on standard medicine bottles and records the time and date each time the bottle is opened and closed.

Related Term(s): [Adherence](#)

MEDLINE

A federal database that contains journal citations and abstracts for biomedical literature from around the world. Most of the publications are scholarly journals. Some of the listings include a link to the free full text of the article. MEDLINE is a service of the U.S. National Library of Medicine.

Related Term(s): [National Library of Medicine](#)

MedlinePlus

A health website produced by the U.S. National Library of Medicine. The website offers patients and their families and friends reliable, up-to-date information about diseases, conditions, and wellness issues. The information is written in easy-to-understand language and includes videos and illustrations.

Related Term(s): [National Library of Medicine](#)

Memory Cell

SEE: [Memory Lymphocyte](#)

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.

Related Term(s): [Antigen](#), [B Lymphocyte](#), [Lymphocyte](#), [T Lymphocyte](#)

Meningitis

Inflammation of the meninges, which are three layers of tissue that cover and protect the brain and spinal cord. Meningitis may be caused by a bacterial, fungal, or viral infection; drug allergies; cancer; or other diseases. Symptoms may include fever, headache, vomiting, malaise, and stiff neck. If left untreated, meningitis can lead to convulsions, coma, and death.

Messenger RNA (mRNA)

A type of RNA that carries the genetic information needed to make a protein.

Related Term(s): [Protein](#), [Ribonucleic Acid](#)

Metabolic

Pertaining to metabolism.

Related Term(s): [Metabolism](#)

Metabolic Syndrome

Synonym(s): Insulin Resistance Syndrome, Metabolic Syndrome X, Syndrome X

A combination of risk factors that increase the risk for heart disease, diabetes, and stroke. To be diagnosed with metabolic syndrome, a person must have at least three of the following metabolic risk factors: high blood pressure, abdominal obesity, high triglyceride levels, low levels of high-density lipoprotein (HDL) cholesterol, or high fasting blood sugar levels. Use of some antiretroviral (ARV) drugs may cause or worsen risk factors associated with metabolic syndrome.

Metabolic Syndrome X

SEE: [Metabolic Syndrome](#)

Metabolism

All of the physical and chemical processes that produce or use energy within the body. Drug metabolism refers to the breakdown of drugs in the body.

Microbe

SEE: [Microorganism](#)

Microbicide

A drug, chemical, or other substance used to kill microorganisms. The term is used specifically for substances that prevent or reduce the transmission of sexually transmitted infections, such as HIV.

Related Term(s): [Microbicide Trials Network](#), [Microorganism](#)

Microbicide Trials Network (MTN)

A federally funded HIV clinical trials network that was established in 2006 and closed its operations in 2021. Many Microbicide Trials Network (MTN) trials focused on evaluating microbicides and other promising HIV prevention approaches.

Related Term(s): [Clinical Trial](#), [Microbicide](#)

Microorganism**Synonym(s):** Microbe

An organism that can be seen only through a microscope. Microorganisms include bacteria, protozoans, and fungi. Although viruses are not considered living organisms, they are sometimes classified as microorganisms.

Microsporidiosis

An infection caused by several species of the protozoan parasite microsporidia. Microsporidia usually infect the gastrointestinal tract but may also infect other parts of the body, such as the eyes, respiratory tract, or brain. The most common symptoms are chronic diarrhea and wasting, but symptoms vary greatly depending on the site of infection. Microsporidiosis occurs primarily in people with weakened immune systems, especially people with HIV or people who have undergone organ transplants.

Related Term(s): [Opportunistic Infection](#)**Mitochondria**

A small structure within cells that produces energy through a process called cellular respiration.

Related Term(s): [Mitochondrial Toxicity](#)**Mitochondrial Toxicity**

Damage to mitochondria. Mitochondrial toxicity may affect different parts of the body, including the heart, nerves, muscles, pancreas, kidneys, and liver. Conditions resulting from mitochondrial toxicity can include muscle weakness, inflammation of the pancreas (pancreatitis), high levels of lactic acid in the blood (lactic acidosis), changes in distribution and amount of body fat (lipodystrophy), and fatty liver (hepatic steatosis). Use of certain antiretroviral (ARV) drugs may cause mitochondrial toxicity.

Related Term(s): [Mitochondria](#)**Mixed-Status Couple****SEE:** [Serodifferent Couple](#)**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.

Related Term(s): [CCR5](#), [CXCR4](#), [R5-Tropic Virus](#), [X4-Tropic Virus](#)**Modified Directly Observed Therapy (m-DOT)**

A variation of directly observed therapy (DOT). Modified-DOT (m-DOT) is when a health care professional watches a person take some, but not all, medication doses.

Related Term(s): [Directly Observed Therapy](#)**Molluscum Contagiosum**

A common, usually mild skin disease caused by the molluscum contagiosum virus. The disease causes small bumps that can appear anywhere on the body. Molluscum contagiosum can spread from one part of the body to another or from one person to another (including via sexual contact). In people with weakened immune systems, such as people with HIV, the bumps of molluscum contagiosum may grow very large, spread rapidly, and be harder to treat.

Monoinfection

When a person has only one infection.

Related Term(s): [Coinfection](#)**Mononeuropathy**

Neuropathy that damages only one nerve, resulting in symptoms that are linked specifically to the affected nerve.

Related Term(s): [Neuropathy](#)**Monotherapy**

Using only one drug to treat an infection or disease. Monotherapy for the treatment of HIV is not recommended outside of a clinical trial. The optimal regimen for initial treatment of HIV includes three antiretroviral (ARV) drugs from at least two different HIV drug classes.

Related Term(s): [Antiretroviral Therapy](#)**Morbidity**

Disease state or symptom. Morbidity rate is a measure of the frequency of occurrence of disease among a defined population during a specified time period.

Mortality

The state of being mortal (subject to death). Mortality rate is a measure of the frequency of occurrence of death among a defined population during a specified time period.

Mother-to-Child Transmission (MTCT)**SEE:** [Perinatal Transmission](#)

Mpox

A disease caused by infection with the mpox virus. The mpox virus can be spread from person to person through close contact, including sexual contact, with someone who has the mpox virus or through perinatal transmission during pregnancy. The virus can also be transmitted by touching materials that have been used by someone who has mpox. In addition, the mpox virus can spread from infected animals to people through close contact. Signs and symptoms of mpox may include rash or mucosal lesions, fever, chills, swollen lymph nodes, fatigue, muscle aches, headaches, and respiratory symptoms. Most people with mpox, including people with well-controlled HIV, recover without medical treatment; however, some people can develop severe mpox. Mpox disproportionately affects people with HIV. People with HIV who are significantly immunocompromised have a higher likelihood of severe mpox and death if they get the mpox virus.

Related Term(s): [Immunocompromised](#), [Mpox Virus](#), [Opportunistic Infection](#), [Perinatal Transmission](#)

Mpox Virus

A DNA virus species belonging to the group (or genus) *Orthopoxvirus*. Other viral species belonging to the *Orthopoxvirus* genus include the variola virus (which causes smallpox), vaccinia virus, and cowpox virus. Two distinct mpox virus clades exist: Clade I and Clade II. Infection with the mpox virus causes mpox.

Related Term(s): [Mpox](#)

MSM

Acronym for men who have sex with men.

MSMW

Acronym for men who have sex with men and women.

Mucocutaneous

Pertaining to the mucous membranes and skin. Mucocutaneous areas of the body include the mouth, eyes, vagina, and anus.

Multicenter AIDS Cohort Study (MACS)

Started in 1984, the study collects biological specimens and medical and behavioral data on men who have sex with men (MSM) to study the natural and treated history of HIV. The Multicenter AIDS Cohort Study (MACS) has significantly contributed to the understanding of HIV, AIDS, and the effects of antiretroviral therapy (ART).

Multicentric Castleman Disease (MCD)

A rare disorder that is characterized by noncancerous growths in many groups of lymph nodes and related lymphatic tissue throughout the body. MCD symptoms range from mild to very severe and might include enlarged lymph nodes, infection, fever, weight loss, nausea, rash, an enlarged liver or spleen, and anemia. MCD can be caused by human herpesvirus-8 (HHV-8) infection and is called HHV-8-associated MCD. HHV-8-associated MCD most often occurs in individuals who are immunocompromised, such as people with HIV. The cause of MCD may also be unknown and is called HHV-8 negative MCD or idiopathic MCD. People with MCD are more likely than those without MCD to develop lymphoma.

Multidrug-Resistant HIV (MDR-HIV)

HIV that contains mutations causing reduced susceptibility to multiple antiretroviral (ARV) drugs. MDR-HIV can cause treatment failure.

Multidrug-Resistant Tuberculosis (MDR-TB)

A form of tuberculosis (TB) that is resistant to at least the two most effective TB drugs (isoniazid and rifampin). People who have multidrug-resistant TB (MDR-TB) have a high likelihood of treatment failure. They also may develop further drug resistance, which can lead to extensively drug-resistant tuberculosis (XDR-TB), a life-threatening disease.

Related Term(s): [Drug Resistance](#), [Extensively Drug-Resistant Tuberculosis](#), [Tuberculosis](#)

Multipurpose Prevention Technology (MPT)

A product designed to simultaneously protect against multiple sexual and reproductive health issues, such as HIV and other sexually transmitted infections and unintended pregnancy. A variety of MPT products are under development, including vaginal rings, vaginal and rectal gels, oral pills, implants, and long-acting injectables.

Multivalent Vaccine

SEE: [Polyvalent Vaccine](#)

Mutagenic

Causing a mutation, which is a permanent change in the genetic material of a cell or microorganism. A mutation may alter a trait or characteristic of a person or may cause disease. Mutations can be inherited or can occur spontaneously. Before being approved, drugs, including antiretroviral (ARV) drugs, are tested to assess their potential for mutagenic effects.

Related Term(s): [Mutation](#)

Mutation

A permanent change in the genetic material of a cell or microorganism. Some mutations can be transmitted when the cell or microorganism replicates. Some HIV mutations cause the virus to become resistant to certain antiretroviral (ARV) drugs.

Related Term(s): [Drug Resistance](#)

Myalgia

Synonym(s): Myoneuroalgia, Myodynia

Muscle pain.

***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 it 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.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#)

***Mycobacterium kansasii* Infection**

An infection caused by the bacteria *Mycobacterium kansasii*. The bacteria can be found in water, dirt, and food. *Mycobacterium kansasii* usually infects the lungs, but it can also infect other organs (disseminated). Most people with healthy immune systems are not affected by the bacteria. In people with HIV, *Mycobacterium kansasii* infection that is outside of the lungs (extrapulmonary) or that has disseminated is an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#)

Mycobacterium tuberculosis

The bacterium that causes tuberculosis (TB). *Mycobacterium tuberculosis* usually infects the lungs, but it can also infect other parts of the body, such as the kidneys, spine, and brain. *Mycobacterium tuberculosis* is spread when a person with active TB (called TB disease) coughs, sneezes, speaks, or sings, and a person nearby breathes in the bacteria.

Related Term(s): [Tuberculosis](#), [Tuberculosis Disease](#)

Mycosis

An infection with or disease caused by a fungus.

Related Term(s): [Fungus](#)

Myelin

A whitish, fatty substance that forms an insulating layer around nerves. Myelin helps nerve signals transmit quickly and efficiently along nerve cells.

Myelosuppression

Synonym(s): Bone Marrow Suppression

Impaired bone marrow function. Myelosuppression reduces bone marrow production of red blood cells, white blood cells, and platelets.

Related Term(s): [Bone Marrow](#)

Myocardial Infarction

A heart attack. Heart attacks occur when blood flow to the heart is reduced or interrupted, causing damage or death to the heart muscle (myocardium). Use of some antiretroviral (ARV) drugs may increase the risk for a myocardial infarction.

Myodynia

SEE: [Myalgia](#)

Myoneuroalgia

SEE: [Myalgia](#)

Myopathy

A disease of muscle tissue. Use of certain antiretroviral (ARV) drugs may cause myopathy.

N

Nadir

The lowest point. For example, a person's nadir CD4 count is the person's lowest CD4 count.

Related Term(s): [CD4 Count](#)

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. NCI is part of the National Institutes of Health.

Related Term(s): [National Institutes of Health](#)

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. The National Center for Complementary and Integrative Health is part of the National Institutes of Health.

Related Term(s): [Complementary and Alternative Medicine](#), [National Institutes of Health](#)

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; other infectious diseases, such as influenza and tuberculosis (TB); and allergy, immunology, and transplantation. The National Institute of Allergy and Infectious Diseases is part of the National Institutes of Health.

Related Term(s): [National Institutes of Health](#)

National Institutes of Health (NIH)

A federal agency that is the largest biomedical research agency in the world. The National Institutes of Health 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. NLM is part of the National Institutes of Health (NIH).

Related Term(s): [National Institutes of Health](#)

National Prevention Information Network

SEE: [Centers for Disease Control and Prevention–National Prevention Information Network \(CDC–NPIN\)](#)

Natural History Study

A type of medical research study. In natural history studies, researchers examine how a disease or medical condition develops over time. Researchers follow participants who have risk factors for or have a specific disease or condition to determine how specific factors, such as family history, age, and occupational exposure, affect the development or progression of the disease or condition. Data collected during a natural history study also provide information on how best to treat a condition or disease.

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.

Related Term(s): [Lymphocyte](#), [White Blood Cell](#)

Navigator

A trained professional who helps people and their families access and understand medical and social services. Navigators can include social workers, case managers, community health workers, or patient navigators.

Related Term(s): [HIV Navigation](#), [PrEP Navigation](#)

Negative Test Result

SEE: [Nonreactive Test Result](#)

Nemaline Rod Myopathy (NM)

Synonym(s): HIV-Associated Adult-Onset Nemaline Myopathy, Rod Body Disease

A rare neuromuscular disorder characterized by the presence of rod-like structures (nemaline bodies) in the muscle fibers and by muscle weakness. Muscle weakness can occur throughout the body but is typically most severe in the neck, face, and limbs. Nemaline rod myopathy (NM) in its most severe form can be life-threatening. NM can occur as a complication of HIV.

Neonatal

Pertaining to an infant during the first 28 days after birth.

Neoplasm

New abnormal growth of tissue. Neoplasms may be benign (not cancerous) or malignant (cancerous). Neoplasms are commonly called tumors.

Nephritis

Inflammation of the kidney.

Related Term(s): [Kidneys](#)

Nephrolithiasis

Calculi (stones) in the kidney. Use of some antiretroviral (ARV) drugs may cause nephrolithiasis.

Related Term(s): [Kidneys](#)

Nephrotoxic

Toxic or destructive to the kidneys. Certain antiretroviral (ARV) drugs can have nephrotoxic effects.

Related Term(s): [Kidneys](#)

Neuralgia

Sharp, shooting pain along a nerve or group of nerves.

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.

Related Term(s): [AIDS Dementia Complex](#), [Central Nervous System](#), [Neuropathy](#), [Peripheral Nervous System](#), [Vacuolar Myelopathy](#)

Neuropathy

Damage or degeneration of the nerves, especially the peripheral nerves. Symptoms of neuropathy depend on which nerves are affected and can include pain, tingling, numbness, or weakness. HIV-related neuropathy may be due to the virus or the use of certain antiretroviral (ARV) drugs.

Related Term(s): [Peripheral Nervous System](#)

Neutropenia

Lower-than-normal number of neutrophils (a type of white blood cell) in the blood. Moderate to severe neutropenia can increase the risk of bacterial and fungal infections. Neutropenia may occur as a result of HIV or use of some antiretroviral (ARV) drugs.

Related Term(s): [Neutrophil](#)

Neutrophil

A type of white blood cell that fights infection by engulfing and killing foreign substances, such as bacteria.

Related Term(s): [White Blood Cell](#)

New Drug Application (NDA)

(Figure 54)

A drug sponsor's request to the U.S. 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 an NDA is based on laboratory and animal preclinical studies and testing in humans (Phase 1–4 clinical trials).

Related Term(s): [U.S. Food and Drug Administration](#)

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.

Related Term(s): [Non-Nucleoside Reverse Transcriptase Inhibitor](#)

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.

Related Term(s): [AIDS-Defining Condition](#), [Lymphoma](#)

Noninferiority Trial

A clinical trial designed to show that a new drug (or other intervention) is at least as effective as the drug to which it is compared.

Related Term(s): [Superiority Trial](#)

Non-Nucleoside Analogue Reverse Transcriptase Inhibitor

SEE: [Non-Nucleoside Reverse Transcriptase Inhibitor](#)

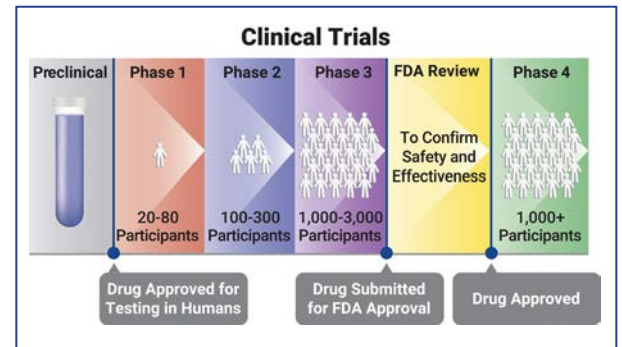


Figure 54

Non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI)

(Figure 55, Figure 56)

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.

Related Term(s): [Drug Class](#), [Reverse Transcriptase](#), [Reverse Transcription](#)

Nonoccupational Postexposure 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). Nonoccupational 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 nonoccupational postexposure prophylaxis (nPEP) is to reduce the likelihood of infection.

Related Term(s): [Occupational Postexposure Prophylaxis](#), [Postexposure Prophylaxis](#)

Nonreactive Test Result

Synonym(s): Negative Test Result

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

Related Term(s): [False Negative](#), [Reactive Test Result](#)

Nonsteroidal Anti-Inflammatory Drug (NSAID)

A drug used to control pain and inflammation. Common nonsteroidal anti-inflammatory drugs (NSAIDs) include aspirin and ibuprofen.

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 use these drugs in future treatment regimens.

Related Term(s): [Nucleoside Reverse Transcriptase Inhibitor](#)

Nuclear Magnetic Resonance (NMR)

A noninvasive procedure that uses magnetic fields and radio waves to produce three-dimensional computerized images of areas inside the body.

Nucleic Acid

A family of molecules found in all living cells and viruses. Nucleic acids, which include DNA and RNA, control cellular function and heredity.

Related Term(s): [Deoxyribonucleic Acid](#), [Ribonucleic Acid](#)

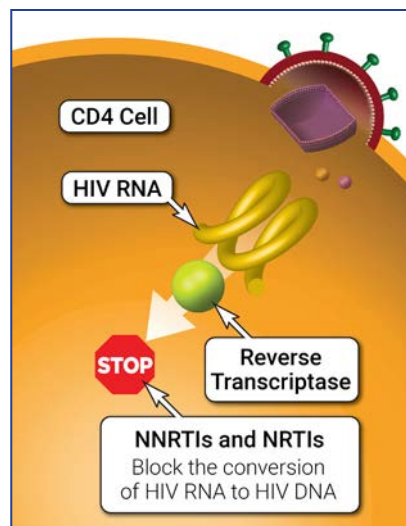


Figure 55

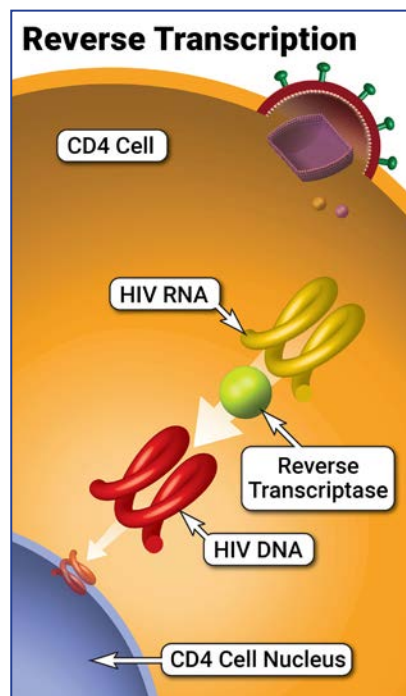


Figure 56

Nucleic Acid Amplification Test

SEE: [Nucleic Acid Test](#)

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).

Related Term(s): [Viral Load Test](#)

Nucleoside

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

Related Term(s): [Nucleic Acid](#), [Nucleotide](#)

Nucleoside Analogue Reverse Transcriptase Inhibitor

SEE: [Nucleoside Reverse Transcriptase Inhibitor](#)

Nucleoside Reverse Transcriptase Inhibitor (NRTI)

(Figure 57, Figure 58)

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.

Related Term(s): [Drug Class](#), [Nucleotide Reverse Transcriptase Inhibitor](#), [Reverse Transcriptase](#), [Reverse Transcription](#)

Nucleotide

A building block of nucleic acids. DNA and RNA are nucleic acids.

Related Term(s): [Deoxyribonucleic Acid](#), [Ribonucleic Acid](#)

Nucleotide Analogue Reverse Transcriptase Inhibitor

SEE: [Nucleotide Reverse Transcriptase Inhibitor](#)

Nucleotide Reverse Transcriptase Inhibitor (NtRTI)

(Figure 57, Figure 58)

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.

Related Term(s): [Drug Class](#), [Nucleoside Reverse Transcriptase Inhibitor](#), [Reverse Transcriptase](#), [Reverse Transcription](#)

Nucleus

A membrane-bound structure containing a cell's chromosomes. All eukaryotes (all organisms except bacteria and viruses) have a nucleus.

Related Term(s): [Chromosome](#)

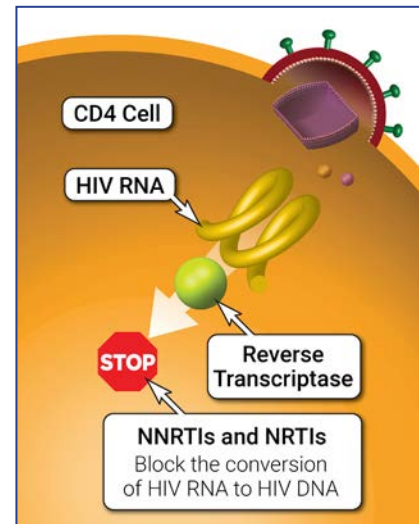


Figure 57

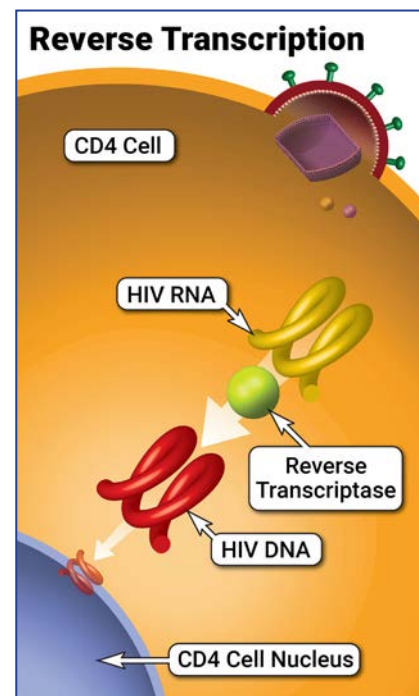


Figure 58

O

Observational Trial

A type of clinical trial. In observational trials, researchers do not assign participants to a treatment or other intervention. Instead, the researchers observe participants or measure certain outcomes to determine health outcomes.

Related Term(s): [Clinical Trial](#)

Occupational Exposure

Contact with a potentially harmful physical, chemical, or biological agent as a result of one's work. For example, a health care professional may be exposed to HIV or another infectious agent through a needlestick injury.

Occupational Postexposure 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 postexposure prophylaxis (oPEP) is to reduce the likelihood of infection.

Related Term(s): [Nonoccupational Postexposure Prophylaxis](#), [Occupational Exposure](#), [Postexposure Prophylaxis](#)

Off-Label Use

The legal, prescribed use of a drug in a manner different from that described on the U.S. Food and Drug Administration (FDA)-approved drug label. Off-label use can include using a drug for a different disease or medical condition or giving a drug at a different dose or via a different route of administration than approved by FDA.

Related Term(s): [U.S. Food and Drug Administration](#)

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 research program.

Related Term(s): [National Institutes of Health](#)

Office of Minority Health (OMH)

A federal office whose primary responsibility is to improve the health of minoritized racial and ethnic populations, including African Americans, Hispanic Americans, American Indians, Alaska 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 minoritized populations, including those specifically affected by HIV.

On-Label Use

Using a drug in the way described on the U.S. Food and Drug Administration (FDA)-approved drug label. Approved drug labels include information on the specific diseases and conditions that a drug is approved to treat or prevent and how to use the drug to treat or prevent those specific diseases and conditions.

Related Term(s): [Off-Label Use](#), [U.S. Food and Drug Administration](#)

Open-Label Trial

A type of clinical trial. In open-label trials, both the researchers and participants know which drug (or other intervention) is being given to participants.

Related Term(s): [Clinical Trial](#), [Double-Blind Study](#)

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.

Related Term(s): [Candidiasis](#), [Toxoplasma gondii Encephalitis](#), [Vulvovaginal Candidiasis](#)

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 success.

Oral Hairy Leukoplakia (OHL)

A disease of the mucous membranes that occurs mostly in people with HIV. Oral hairy leukoplakia (OHL) is characterized by white or gray lesions that usually develop on the tongue or the inside of the cheek. The lesions have a ribbed, fuzzy appearance. OHL is caused by the Epstein-Barr virus (EBV), a type of herpesvirus.

Related Term(s): [Epstein-Barr Virus](#)

Osteonecrosis

Death of bone tissue.

Osteopenia

Lower-than-normal bone mass and bone mineral density. Osteopenia often precedes more severe bone loss (osteoporosis). Osteopenia may be caused by the use of certain antiretroviral (ARV) drugs.

Related Term(s): [Osteoporosis](#)

Osteoporosis

Progressive loss of bone mass and bone mineral density, resulting in an increased risk of fractures.

Related Term(s): [Osteopenia](#)

Outcome Measure

SEE: [Clinical Endpoint](#)

P

p24

A major protein contained in HIV's viral core.

Related Term(s): [Capsid](#)

Package Insert

Synonym(s): Drug Label, Prescribing Information, Prescription Drug Labeling, Product Label

Drug prescribing information prepared by the drug manufacturer and approved by the U.S. Food and Drug Administration (FDA). The package insert includes details and directions that health care providers need to prescribe a drug properly, including approved uses for the drug, contraindications, potential adverse reactions, available formulations and dosage, and how to administer the drug. The package insert is included with drug packaging and is used to develop any promotional or labeling materials.

Related Term(s): [U.S. Food and Drug Administration](#)

Palliative Care

Synonym(s): Comfort Care, Supportive Care, Symptom Management

Care to alleviate the physical and psychological symptoms of disease or the undesirable effects of treatment. The goal of palliative care is not to cure disease but to make the person more comfortable and improve their quality of life. Palliative care may be given at any stage of a disease.

Pancreas

A gland located behind the stomach. The pancreas secretes enzymes that aid in digestion and produces several hormones, including insulin and glucagon, which regulate blood sugar levels.

Related Term(s): [Insulin](#)

Pancreatitis

Inflammation of the pancreas. Symptoms of acute and chronic pancreatitis are similar and can include pain, nausea and vomiting, and a swollen abdomen. Gallstones are the most common cause of acute pancreatitis. Chronic, heavy alcohol use is a common cause of both acute and chronic pancreatitis. Pancreatitis may also be caused by use of certain antiretroviral (ARV) drugs or an opportunistic infection.

Related Term(s): [Pancreas](#)

Pancytopenia

Lower-than-normal levels of blood cells (red blood cells and white blood cells) and platelets.

Pandemic

An epidemic of disease, or other health condition, that occurs over a widespread area (multiple countries or continents) and usually affects a sizeable part of the population.

Related Term(s): [Epidemic](#)

Pap Smear

Synonym(s): Pap Test, Papanicolaou Test

A procedure in which cells and secretions are collected from inside and around the cervix for examination under a microscope. Pap smear also refers to the laboratory test used to detect potentially precancerous or cancerous cells in the cervical cells obtained from a Pap smear. A Pap smear may also identify other conditions, such as infections or inflammation.

Related Term(s): [Cervix](#)

Pap Test

SEE: [Pap Smear](#)

Papanicolaou Test

SEE: [Pap Smear](#)

Papilloma

A benign (not cancerous) growth, such as a wart, on the skin or mucous membrane.

Parasite

Any organism that lives on or in another living organism (the host) and gets its food from or at the expense of the host. Many parasites cause disease in humans. People with weakened immune systems, including people with HIV, are more likely to have parasitic infections than people with healthy immune systems.

Parenteral

When a substance, such as a drug or solution, is introduced into the body through a route other than the gastrointestinal (GI) tract. (The GI tract extends from the mouth to the anus.) For example, a parenteral drug may be given through the veins (intravenous), into the muscles (intramuscular), or through the skin (subcutaneous). Parenteral nutrition refers to feeding a person intravenously.

Paresthesia

Abnormal touch sensations, such as burning, prickling, or tingling, that occur spontaneously. Paresthesia usually occurs in the hands, arms, legs, or feet, but it can occur in other parts of the body. Chronic paresthesia may be due to underlying neurological disease, traumatic nerve damage, or peripheral neuropathy. Paresthesia may also be caused by use of certain antiretroviral (ARV) drugs.

Related Term(s): [Peripheral Neuropathy](#)

Passive Immunity

(Figure 59)

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 antibodies through the placenta or the mother's 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.

Related Term(s): [Acquired Immunity](#), [Active Immunity](#), [Antibody](#)

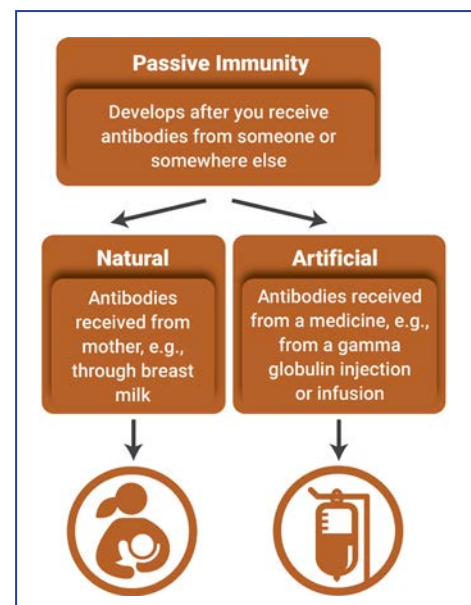


Figure 59

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 fight an infection or disease. Passive immunotherapy using antibodies is often used in cancer treatment.

Related Term(s): [Immunotherapy](#)

Pathogen

Any disease-causing microorganism, such as a bacterium or virus.

Pathogenesis

The origin and development of a disease. Pathogenesis includes the specific processes that occur during the development of a disease.

PCP

SEE: [Pneumocystis jirovecii Pneumonia](#)

Peak Concentration

SEE: C_{max}

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 to prevent perinatal 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.

Related Term(s): [International Maternal Pediatric Adolescent AIDS Clinical Trials Group](#)

Pediatric AIDS Clinical Trials Group 076 (PACTG 076)

A federally funded study that determined that the risk of perinatal transmission of HIV could be reduced by nearly 70 percent 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 perinatal transmission of HIV.

Related Term(s): [Perinatal Transmission](#)

Pelvic Inflammatory Disease (PID)

Infection and inflammation of the female upper genital tract, including the uterus and fallopian tubes. Pelvic inflammatory disease (PID) is usually due to bacterial infection, including some sexually transmitted infections, such as chlamydia and gonorrhea. Symptoms, if any, include pain in the lower abdomen, fever, smelly vaginal discharge, irregular bleeding, or pain during intercourse. PID can lead to serious complications, including infertility, ectopic pregnancy (a pregnancy in the fallopian tube or elsewhere outside of the womb), and chronic pelvic pain.

Penicilliosis

SEE: [Talaromyces marneffeii Infection](#)

Penicillium marneffeii Infection

SEE: [Talaromyces marneffeii Infection](#)

People With AIDS

SEE: [People With HIV](#)

People With HIV

Synonym(s): People With AIDS, People With HIV/AIDS

Infants, children, adolescents, and adults who have HIV.

People With HIV/AIDS

SEE: [People With HIV](#)

Peptide

Amino acids that are chemically linked to one another. Proteins are made of peptides.

Related Term(s): [Amino Acids](#), [Protein](#)

Perianal

Pertaining to the area around the anus.

Perinatal

The time period that extends from approximately 22 weeks into pregnancy until about 4 weeks after birth. Perinatal transmission of HIV refers to the passage of HIV from mother to child during pregnancy, labor and delivery, or breastfeeding.

Related Term(s): [Perinatal Transmission](#)

Perinatal Transmission

(Figure 60)

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

When a woman with HIV passes the virus to the infant during pregnancy, labor and delivery, or breastfeeding. Antiretroviral (ARV) drugs are given to women with HIV during pregnancy and to their infants after birth to reduce the likelihood of perinatal transmission of HIV. ARV drugs also protect the health of women with HIV during pregnancy and after delivery.

Related Term(s): [Prevention of Perinatal Transmission](#), [Secondary Transmission](#)

Peripheral Blood Mononuclear Cell (PBMC)

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

Related Term(s): [White Blood Cell](#)

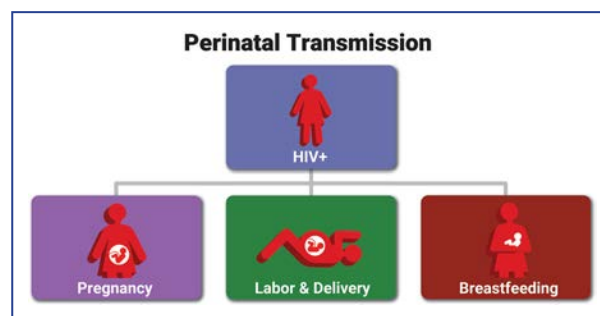


Figure 60

Peripheral Nervous System (PNS)

The part of the nervous system that is made up of the nerves outside of the brain and spinal cord. The peripheral nervous system (PNS) transmits information from the brain and spinal cord to the rest of the body; it also transmits sensory information back to the brain and spinal cord. HIV infection or use of certain antiretroviral (ARV) drugs can cause damage to the PNS.

Related Term(s): [Peripheral Neuropathy](#)

Peripheral Neuropathy

Damage to the peripheral nervous system, which includes the nerves outside of the brain and spinal cord. Symptoms include pain, numbness, tingling, swelling, and muscle weakness. Peripheral neuropathy may be due to injury, infection, disease (such as diabetes), autoimmune diseases (such as chronic inflammatory demyelinating polyneuropathy), or certain antiretroviral (ARV) drugs.

Related Term(s): [Neuropathy](#), [Peripheral Nervous System](#)

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 and with certain opportunistic infections.

Related Term(s): [Lymph Nodes](#)

Pharmacokinetic Enhancers

(Figure 61)

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.

Related Term(s): [Boosting](#), [Drug Class](#)

Pharmacokinetics

(Figure 62)

The processes by which a drug is absorbed, distributed, metabolized, and eliminated by the body.

Related Term(s): [Pharmacology](#)

Pharmacology

The study of drugs. Pharmacology includes the study of a drug's composition, pharmacokinetics, therapeutic use, and toxicity.

Related Term(s): [Pharmacokinetics](#)

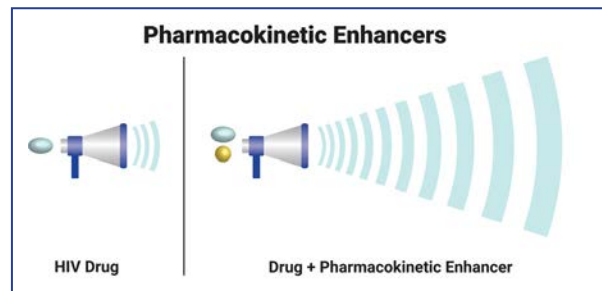


Figure 61

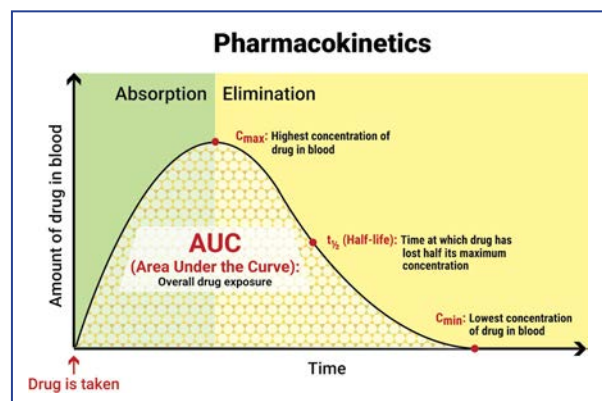


Figure 62

Phase 1 Trial

(Figure 63)

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.

Related Term(s): [Clinical Trial](#), [Pharmacokinetics](#), [Phase 2 Trial](#), [Phase 3 Trial](#), [Phase 4 Trial](#), [Preclinical](#)

Phase 2 Trial

(Figure 63)

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.

Related Term(s): [Clinical Trial](#), [Phase 1 Trial](#), [Phase 3 Trial](#), [Phase 4 Trial](#), [Preclinical](#)

Phase 3 Trial

(Figure 63)

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 U.S. Food and Drug Administration (FDA) reviews results from Phase 3 trials when considering a drug for approval.

Related Term(s): [Clinical Trial](#), [Phase 1 Trial](#), [Phase 2 Trial](#), [Phase 4 Trial](#), [Preclinical](#), [U.S. Food and Drug Administration](#)

Phase 4 Trial

(Figure 63)

Testing in humans that occurs after a drug (or other treatment) has been approved by the U.S. 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.

Related Term(s): [Clinical Trial](#), [Phase 1 Trial](#), [Phase 2 Trial](#), [Phase 3 Trial](#), [Preclinical](#), [U.S. Food and Drug Administration](#)

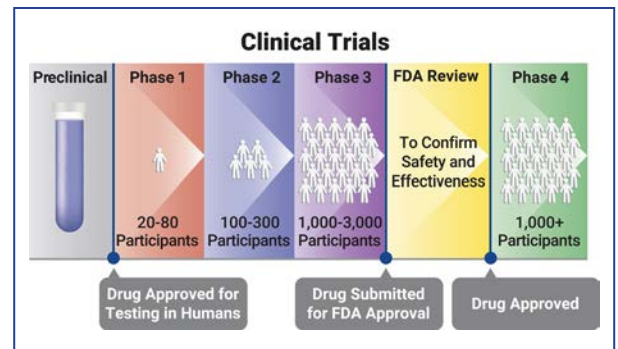


Figure 63

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).

Related Term(s): [Genotypic Antiretroviral Resistance Test](#), [Resistance Testing](#)**Phenotypic Assay****SEE:** [Phenotypic Antiretroviral Resistance Test](#)**Phenylalanine Hydroxylase Deficiency****SEE:** [Phenylketonuria](#)**Phenylketonuria****Synonym(s):** Phenylalanine Hydroxylase Deficiency

A rare inherited disorder that causes an amino acid called phenylalanine to build up in the body. Phenylketonuria is caused by a defect in the gene that makes the enzyme needed to break down phenylalanine. Symptoms range from mild to severe and may include a musty body odor, seizures, skin rash, skin and hair discoloration, heart defects, microcephaly (small head size), intellectual disability, and behavioral problems. In addition to being found in many foods, some medicines (including certain HIV medicines) may contain phenylalanine as part of the artificial sweetener aspartame.

Photosensitivity

Abnormal sensitivity to light. Symptoms may include reddening and blistering of the skin.

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.

Related Term(s): [Protease Inhibitor](#)**Pill Burden**

The number of tablets, capsules, or other dosage forms that a person takes on a regular basis. A high pill burden can make it difficult to adhere to an HIV treatment regimen.

Related Term(s): [Adherence](#)**Pink Eye****SEE:** [Conjunctivitis](#)**PJP****SEE:** [Pneumocystis jirovecii Pneumonia \(PJP\)](#)**Placebo****Synonym(s):** Sham, Sugar Pill

An inactive drug (or other intervention) that is identical in appearance to a therapeutically active drug. In some clinical trials, researchers compare the effects of a placebo with those of an active drug under investigation to determine if the active investigational drug is effective.

Related Term(s): [Placebo-Controlled Trial](#), [Placebo Effect](#)**Placebo-Controlled Trial**

A type of clinical trial. In placebo-controlled trials, one group of participants (the control arm) receives an inactive drug (or other intervention), called a placebo, while another group of participants (the experimental arm) receives the active drug being tested. The two groups are compared to see if the drug is more effective than the placebo.

Related Term(s): [Arm](#), [Placebo](#)**Placebo Effect**

An effect (usually, but not necessarily, beneficial) that arises from an expectation that the given drug (or other intervention) will have an effect. In a clinical trial, placebo effect can refer to an effect experienced by either a participant or a researcher.

Related Term(s): [Placebo](#)**Placenta**

The round or oval-shaped organ that develops in the uterus during pregnancy. The placenta provides the fetus with oxygen and nutrients and takes away wastes, such as carbon dioxide, via the umbilical cord.

Plasma

The clear, yellowish liquid part of blood. Plasma carries red blood cells, white blood cells, and platelets throughout the body.

Platelet

Blood cell fragments that cause blood clots to form, which helps prevent bleeding.

Pneumocystis carinii Pneumonia**SEE:** [Pneumocystis jirovecii Pneumonia](#)

***Pneumocystis jirovecii* Pneumonia (PJP)**

Synonym(s): PCP, PJP, *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, cancer treatments, or organ transplants. In people with HIV, *Pneumocystis jirovecii* pneumonia is an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#)

Pneumocystis Pneumonia (PCP)

SEE: [Pneumocystis jirovecii Pneumonia](#)

Pneumocystosis

SEE: [Pneumocystis jirovecii Pneumonia](#)

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.

Related Term(s): [AIDS-Defining Condition](#)

Pol

A major HIV gene that encodes the Pol polyprotein (a long protein chain). The Pol polyprotein is broken down into four HIV enzymes: reverse transcriptase (RT), protease, RNase H, and integrase. In addition to referring to the gene, Pol can also refer to the enzymes produced by the gene. Pol enzymes are important for HIV reverse transcription, integration, budding, and maturation.

Related Term(s): [Budding](#), [Enzyme](#), [Gene](#), [Integrase](#), [Integration](#), [Life Cycle](#), [Protease](#), [Reverse Transcription](#)

Polymerase Chain Reaction (PCR)

A laboratory technique used to produce large amounts of a specific DNA fragment from a sample that contains very tiny amounts of that DNA. Polymerase chain reaction (PCR) is used for genetic testing and to diagnose disease.

Polyneuritis

Inflammation of several peripheral nerves at the same time.

Related Term(s): [Peripheral Nervous System](#)

Polyneuropathy

Damage or degeneration of several nerves.

Related Term(s): [Neuropathy](#)

Polyvalent Vaccine

Synonym(s): Multivalent Vaccine

A vaccine that immunizes against more than one strain of an antigen. For example, the polyvalent pneumococcal vaccine protects against several strains of the pneumococcal bacteria.

Related Term(s): [Antigen](#), [Vaccine](#)

Positive Test Result

SEE: [Reactive Test Result](#)

Postattachment Inhibitor

Postattachment 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. Postattachment inhibitors are part of a larger group of HIV drugs called entry inhibitors.

Related Term(s): [CCR5](#), [CD4 Receptor](#), [Coreceptor](#), [CXCR4](#), [Entry Inhibitor](#), [Investigational Drug](#)

Postexposure 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 postexposure prophylaxis (PEP) is to reduce the likelihood of infection.

Related Term(s): [Nonoccupational Postexposure Prophylaxis](#), [Occupational Postexposure Prophylaxis](#), [Pre-Exposure Prophylaxis](#)

Postnatal

The time period after birth. Postnatal refers to the newborn.

Postpartum

(Figure 64)

The time period after childbirth. Postpartum refers to the mother.

Related Term(s): [Antepartum](#), [Intrapartum](#), [Postnatal](#)

Preclinical

(Figure 65)

Preliminary testing of an investigational drug (or other intervention) in laboratory (in a test tube, for example) and animal studies. Preclinical studies take place before any testing in humans is done.

Related Term(s): [Clinical Trial](#), [Phase 1 Trial](#), [Phase 2 Trial](#), [Phase 3 Trial](#), [Phase 4 Trial](#)



Figure 64

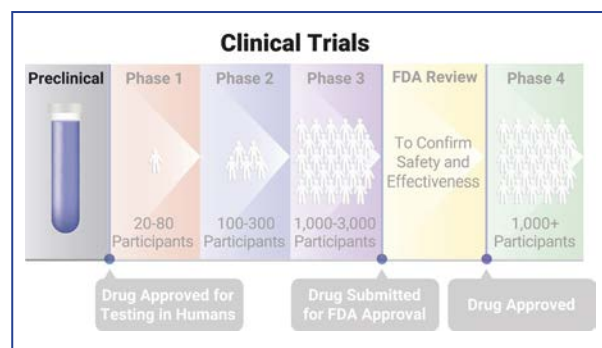


Figure 65

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 can improve maternal and infant outcomes. For women with HIV, preconception care includes counseling on the risks and benefits of antiretroviral (ARV) drugs to prevent perinatal transmission 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.

Related Term(s): [Perinatal Transmission](#)

Pre-Exposure Prophylaxis (PrEP)

An HIV prevention method for people who do not have HIV but have a high likelihood of getting the virus. Pre-exposure prophylaxis (PrEP) involves using a specific HIV medicine on a regular dosing schedule. PrEP is even more effective when it is combined with condoms and other prevention tools.

Prenatal

Synonym(s): Antenatal

The time period from conception up to birth. Prenatal can refer to both the woman and the fetus.

PrEP Navigation

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

Related Term(s): [Pre-Exposure Prophylaxis](#), [Navigator](#)

Prescribing Information

SEE: [Package Insert](#)

Prescription Drug Labeling

SEE: [Package Insert](#)

President's Emergency Plan for AIDS Relief (PEPFAR)

The U.S. government global initiative to combat the HIV epidemic. The President's Emergency Plan for AIDS Relief (PEPFAR) works with governmental and nongovernmental 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 men who have sex with men, adolescent girls and women, and children.

Presumptive

Based on a reasonable assumption. In infants who are not breastfed 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.

Related Term(s): [Definitive](#)

Prevalence

The number or proportion of people with a particular disease or condition in a given population and at a specific time.

Related Term(s): [Incidence](#)

Prevention of Mother-to-Child Transmission (PMTCT)

SEE: [Prevention of Perinatal Transmission](#)

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. Strategies include antiretroviral (ARV) prophylaxis for the mother during pregnancy and labor and delivery, scheduled cesarean delivery, ARV prophylaxis for the newborn infant, and shared decision-making on appropriate infant feeding methods with their health care provider.

Related Term(s): [Perinatal Transmission](#), [Transmission](#)

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.

Related Term(s): [Therapeutic HIV Vaccine](#), [Vaccine](#)

Primary Effusion Lymphoma (PEL)

A rare and fast-growing form of non-Hodgkin's lymphoma that most often occurs in immunocompromised patients, such as people with HIV. PEL is associated with human herpesvirus-8 (HHV-8) infection or Epstein-Barr virus and is characterized by malignant effusions (abnormal collections of fluid) in body cavities.

Related Term(s): [Epstein-Barr Virus \(EBV\)](#), [Human Herpesvirus 8](#), [Lymphoma](#)

Primary HIV Infection

SEE: [Acute HIV Infection](#)

Primary Prevention

SEE: [Primary Prophylaxis](#)

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 from developing opportunistic infections, such as toxoplasmosis.

Related Term(s): [Maintenance Therapy](#)

Primary Resistance

SEE: [Transmitted Resistance](#)

Primary Varicella Infection

Synonym(s): Chickenpox, Varicella

A highly contagious, acute infection caused by the varicella-zoster virus (VZV or HHV-3). Primary varicella infection is commonly known as chickenpox. Chickenpox usually occurs during childhood, although adults can also get it. Symptoms can include blister-like rash, itching, fever, loss of appetite, headache, and fatigue. People who are immunocompromised, such as people with HIV, are at risk of having a more severe case of chickenpox than people who are immunocompetent.

Related Term(s): [Herpesviruses](#), [Varicella Zoster Virus](#)

Proctitis

Inflammation of the anus and rectum.

Prodrome

An early symptom that indicates the onset of a disease.

Product Label

SEE: [Package Insert](#)

Programmed Cell Death

SEE: [Apoptosis](#)

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.

Related Term(s): [AIDS-Defining Condition](#), [Central Nervous System](#), [Myelin](#), [Opportunistic Infection](#)

Progressive Outer Retinal Necrosis (PORN)

Synonym(s): Varicella Zoster Virus Retinitis (VZVR)

An infection of the retina of the eye caused most often by the varicella zoster virus (VZV). PORN is characterized by necrosis (tissue death) of the outer layers of the retina, with the presence of a minimal amount of inflammation in the eye. Symptoms can include eye floaters and flashes, loss of visual clarity, blurred vision, or a narrowed visual field. Eye pain and light sensitivity are usually absent. The condition progresses very rapidly to involve the entire retina and often leads to retinal detachment, vision loss, and blindness if untreated. PORN generally occurs in people who are severely immunocompromised, such as people with AIDS.

Related Term(s): [Acute Retinal Necrosis](#), [Retinal Detachment](#), [Varicella Zoster Virus](#)

Prophylactic

SEE: [Condom](#)

Prophylaxis

Prevention or protection against disease.

Related Term(s): [Maintenance Therapy](#), [Postexposure Prophylaxis](#), [Pre-Exposure Prophylaxis](#), [Primary Prophylaxis](#)

Protease

(Figure 66)

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.

Related Term(s): [Budding](#), [Life Cycle](#), [Protease Inhibitor](#)

Protease Inhibitor (PI)

(Figure 66, Figure 67)

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.

Related Term(s): [Drug Class](#), [Protease](#)

Protein

A large molecule made up of a series of peptides—one or more chains of amino acids. The specific sequence of the amino acids determines the protein's structure and function. Proteins are essential to all living organisms.

Related Term(s): [Amino Acids](#)

Proteinuria

Synonym(s): Albuminuria, Urine Albumin

Excess protein in the urine. Proteinuria is a sign of chronic kidney disease, which can result from diabetes, high blood pressure, and diseases that cause inflammation in the kidneys. Proteinuria can also occur if antiretroviral (ARV) drugs damage the kidneys.

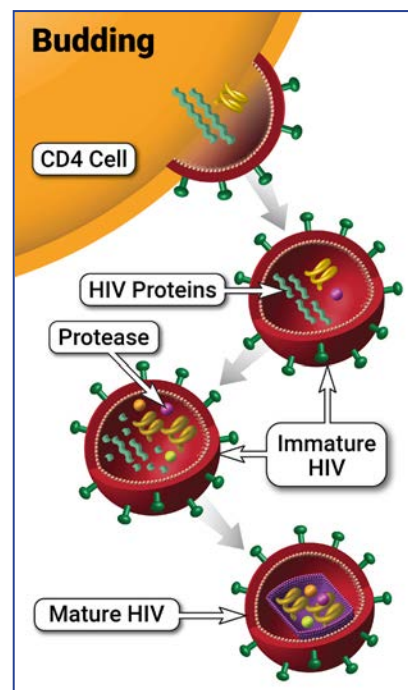


Figure 66

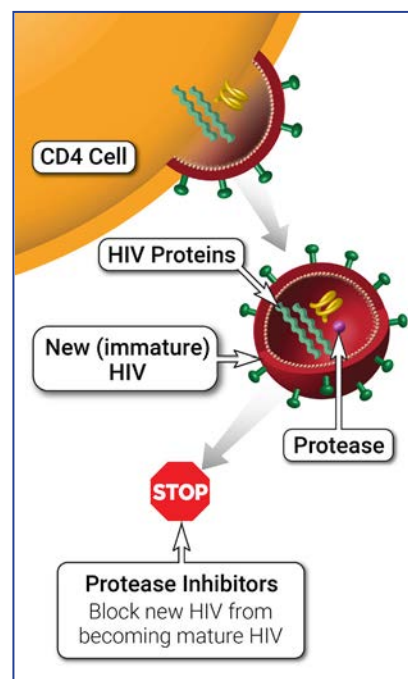


Figure 67

Protocol

The detailed plan for conducting a clinical trial. The protocol is carefully designed to safeguard the health of participants and to answer specific research questions. The protocol describes the purpose of the trial, how the trial will be carried out, and who is eligible to take part in the trial. Each person participating in a clinical trial must agree to the rules set out by the protocol.

Related Term(s): [Clinical Trial](#), [Eligibility Criteria](#)

Protozoan

A single-celled microorganism. Some protozoans can cause disease in humans, including *Toxoplasma gondii* (causes toxoplasmosis), the group *Plasmodium* (causes malaria), and the group *Cryptosporidium* (causes cryptosporidiosis). People with weakened immune systems, including people with HIV, are more likely to have protozoan infections than people with healthy immune systems.

Related Term(s): [Cryptosporidiosis](#), [Cryptosporidium](#), [Malaria](#), [Toxoplasmosis](#)

Proviral DNA

SEE: [Provirus](#)

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.

Related Term(s): [Integration](#)

Pruritus

An intense itching sensation that produces the urge to rub or scratch the skin to obtain relief. Common causes of pruritus include allergic reactions, insect bites, and reactions to medications.

PubMed

A service of the U.S. National Library of Medicine that provides free access to an extensive database of citations and abstracts for biomedical literature, life science journals, and online books. Citations may include links to full-text content and to related resources.

Related Term(s): [National Library of Medicine](#)

Pulmonary

Pertaining to the lungs.

Purified Protein Derivative Test

SEE: [Tuberculin Skin Test](#)

Q

q.d., qd

SEE: [QD](#)

q.i.d., qid

SEE: [QID](#)

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, guide treatment choices, and monitor response to antiretroviral therapy (ART).

Related Term(s): [Viral Load Test](#)

Quantitative Branched DNA Assay (bDNA)

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

Related Term(s): [Viral Load Test](#)

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 can control HIV replication and the development of quasispecies.

Related Term(s): [Mutation](#)

R

R5-Tropic Virus

(Figure 68)

Synonym(s): M-Tropic Virus, Macrophage-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) in the early stages, but the virus may later switch to using either only CXCR4 (X4tropic) 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.

Related Term(s): [CCR5](#), [CCR5 Antagonist](#), [CD4 Receptor](#), [CD4 T Lymphocyte](#), [CXCR4](#), [Dual-Tropic Virus](#), [X4-Tropic Virus](#)

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 sex, 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.

Related Term(s): [Clinical Trial](#), [Control Arm](#)

Rapid Test

A type of HIV antibody test used to screen for HIV. 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.

Related Term(s): [Antibody](#), [Definitive](#), [Enzyme-Linked Immunosorbent Assay](#), [Western Blot](#)

Reactive Test Result

Synonym(s): Positive Test Result

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

Related Term(s): [False Positive](#), [Nonreactive Test Result](#)

Rebound

SEE: [Viral Rebound](#)

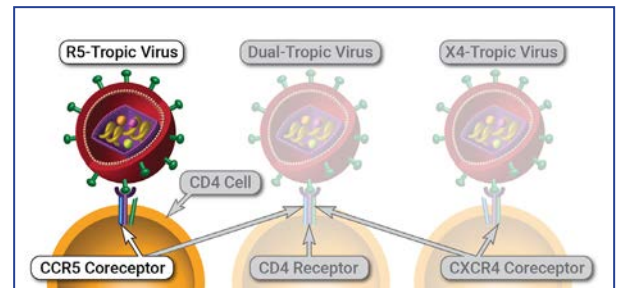


Figure 68

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.

Related Term(s): [CD4 Receptor](#)

Rechallenge

Restarting a drug that was stopped because it was considered the likely cause of an adverse effect. When the drug is restarted, the person is closely monitored for any signs of the adverse effect.

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.

Related Term(s): [Genetic Engineering](#)

Red-Band Gingivitis

SEE: [Linear Gingival Erythema](#)

Red Blood Cell

Synonym(s): Erythrocyte, Red Blood Corpuscle

Blood cells that carry oxygen to all parts of the body. Red blood cells have a high concentration of hemoglobin, a protein that binds to oxygen from the lungs and that gives blood its red color.

Red Blood Corpuscle

SEE: [Red Blood Cell](#)

Red Eye

SEE: [Conjunctivitis](#)

Refractory

Resistant to treatment. For example, a refractory disease or condition does not respond to treatment.

Regimen

SEE: [Treatment Regimen](#)

Regimen Simplification

(Figure 69)

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.

Related Term(s): [Adherence](#)

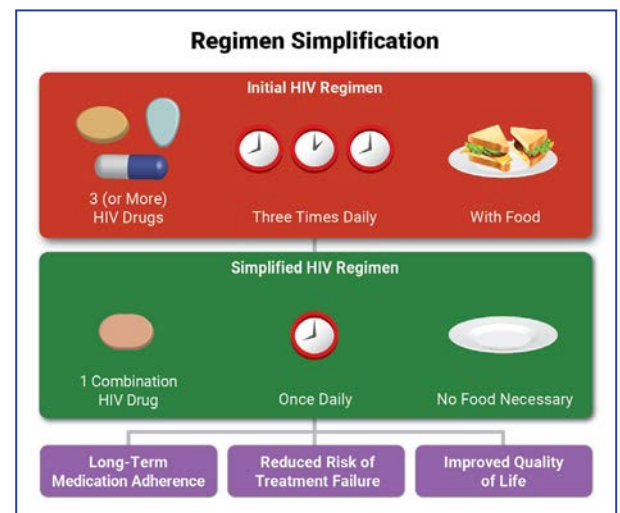


Figure 69

Regulatory T CellSEE: [Regulatory T Lymphocyte](#)**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 overactive during an immune response and from attacking normal cells.

Related Term(s): [T Lymphocyte](#)**Relapse**

The recurrence of a disease after a period of remission or apparent recovery.

Related Term(s): [Remission](#)**Relative Contraindication**

When a particular treatment or procedure should be used with caution. The risk of using the treatment or procedure is acceptable because the benefits outweigh the risks.

Related Term(s): [Contraindication](#)**Remission**

The period during which symptoms of a disease diminish or disappear.

Related Term(s): [Relapse](#)**Renal**

Pertaining to the kidneys.

Replicate

To produce a copy or duplicate. The HIV life cycle describes the seven-step process by which HIV replicates.

Related Term(s): [Life Cycle](#)**Replication***(Figure 70, Figure 71)***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.

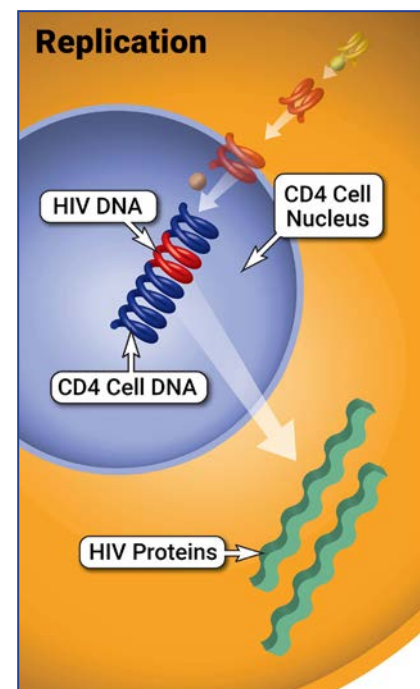
Related Term(s): [Life Cycle](#)**Replication Cycle**SEE: [Life Cycle](#)**Rescue Therapy**SEE: [Salvage Therapy](#)**Reservoir**SEE: [Latent HIV Reservoir](#)**Resistance**SEE: [Drug Resistance](#)

Figure 70

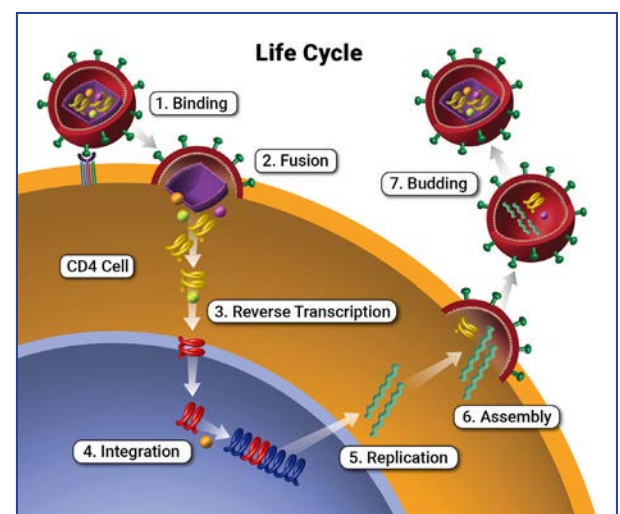


Figure 71

Resistance Assay

SEE: [Resistance Testing](#)

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).

Related Term(s): [Drug Resistance](#), [Genotypic Antiretroviral Resistance Test](#), [Phenotypic Antiretroviral Resistance Test](#)

Retina

The light-sensitive membrane that lines the inside of the eye and sends visual messages through the optic nerve to the brain.

Retinal Detachment

Separation of the retina from its supporting tissue. Retinal detachment must be treated promptly to avoid permanent vision loss. Retinal detachment can be a complication of cytomegalovirus (CMV) retinitis, which is a viral infection that can occur in people with weakened immune systems, including people with HIV.

Related Term(s): [Cytomegalovirus Retinitis](#), [Retina](#)

Retinitis

Inflammation of the retina.

Related Term(s): [Retina](#)

Retrospective Study

A type of medical research study. Retrospective studies look back in time to compare a group of people with a particular disease or condition to a group of people who do not have the disease or condition. Researchers study the medical and lifestyle histories of the people in each group to learn what factors may be associated with the disease or condition.

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.

Related Term(s): [Life Cycle](#)

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 U.S. Food and Drug Administration (FDA).

Related Term(s): [Investigational Drug](#), [Protein](#), [Replicate](#)

Reverse Transcriptase (RT)

(Figure 72)

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. Non-nucleoside reverse transcriptase inhibitors (NNRTIs) prevent HIV from replicating by blocking RT.

Related Term(s): [Life Cycle](#), [Non-Nucleoside Reverse Transcriptase Inhibitor](#), [Reverse Transcription](#)

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

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

Related Term(s): [Viral Load Test](#)

Reverse Transcription

(Figure 72, Figure 73)

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.

Related Term(s): [Life Cycle](#), [Non-Nucleoside Reverse Transcriptase Inhibitor](#), [Nucleoside Reverse Transcriptase Inhibitor](#), [Reverse Transcriptase](#)

Rhabdomyolysis

Breakdown or death of muscle tissue, often with release of muscle fiber contents into the bloodstream and sometimes leading to acute renal failure. Rhabdomyolysis may be caused by HIV, opportunistic infections, or some antiretroviral (ARV) drugs.

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.

Related Term(s): [Deoxyribonucleic Acid](#), [Messenger RNA](#)

Rigors

Shivering that is caused by a chill.

Rod Body Disease

SEE: [Nemaline Rod Myopathy](#)

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. The program's services are available in all 50 states, the District of Columbia, and U.S. territories.

Related Term(s): [Health Resources and Services Administration](#)

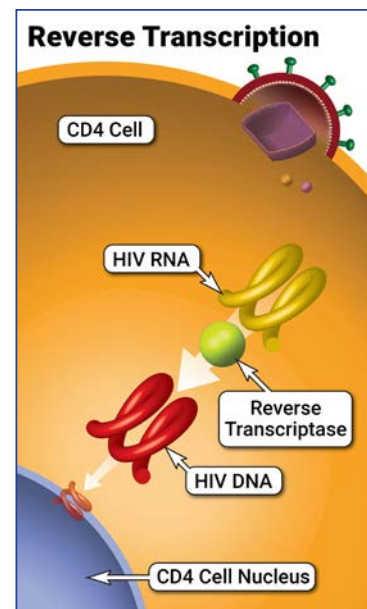


Figure 72

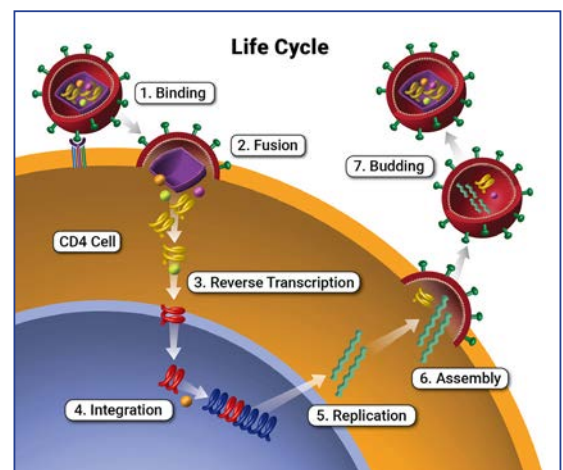


Figure 73

S

Salmonella

A group of bacteria. *Salmonella* is among the most common causes of foodborne illnesses in the United States. Infection with *Salmonella* can cause diarrhea, nausea, fever, and headache. In people with weakened immune systems, including people with HIV, the symptoms of *Salmonella* infection are more severe than in people with healthy immune systems.

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.

Related Term(s): [AIDS-Defining Condition](#), [Salmonella](#)

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.

Related Term(s): [Drug Resistance](#), [Treatment Failure](#)

San Joaquin Valley Fever

SEE: [Coccidioidomycosis](#)

Seborrheic Dermatitis

A noncontagious inflammatory skin condition characterized by flaky, white to yellowish scales on various areas of the body, including the scalp, eyebrows, eyelids, ears, and trunk. Seborrheic dermatitis can occur with or without redness. The exact cause of seborrheic dermatitis is unknown, but it may be due to an overproduction of skin oil combined with irritation from a yeast. Factors that might increase the risk of seborrheic dermatitis include family history, stress, fatigue, use of alcohol-containing lotions, skin disorders, obesity, HIV, and certain neurologic conditions.

Secondary Prophylaxis

SEE: [Maintenance Therapy](#)

Secondary Resistance

SEE: [Acquired Resistance](#)

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 perinatal transmission.)

Related Term(s): [Sexual Transmission](#)

Self-Administered Therapy (SAT)

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

Related Term(s): [Directly Observed Therapy](#)

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.

Seminal Fluid

SEE: [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 enzyme-linked 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.

Related Term(s): [Specificity](#), [True Positive](#)

Sepsis

An overwhelming, life-threatening immune response to infection. Sepsis causes a systemic reaction that includes fever, chills, rapid heart rate, increased breathing rate, and possibly shock. Sepsis can also cause body organs, such as the kidneys or lungs, to fail. Sepsis is more likely to occur in people with weakened immune systems, including people with HIV, than in people with healthy immune systems.

Seroconcordant Couple

(Figure 74)

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

Related Term(s): [Serodifferent Couple](#), [Sexually Transmitted Infection](#)

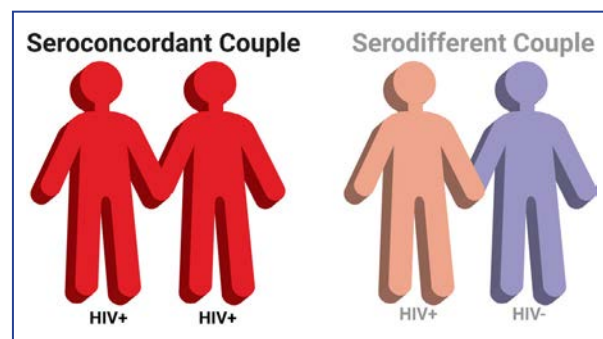


Figure 74

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.

Related Term(s): [Window Period](#)

Serodifferent Couple

(Figure 75)

Synonym(s): Mixed-Status Couple

A couple in which one partner has a sexually transmitted infection (STI), such as HIV, while the other partner does not.

Related Term(s): [Seroconcordant Couple](#), [Sexually Transmitted Infection](#)

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.

Related Term(s): [Antibody](#), [Antigen](#)

Serum

The clear, yellowish liquid part of blood that remains after clotting. Serum is used for various laboratory tests.

Serum Glutamate Pyruvate Transaminase (SGPT)

SEE: [Alanine Aminotransferase](#)

Serum Glutamic-Oxaloacetic Transaminase

SEE: [Alanine Aminotransferase](#)

Set Point

Synonym(s): Viral Set Point

The viral load (HIV RNA) that the body settles at within a few weeks to months after HIV infection. 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.

Related Term(s): [Viral Load](#)

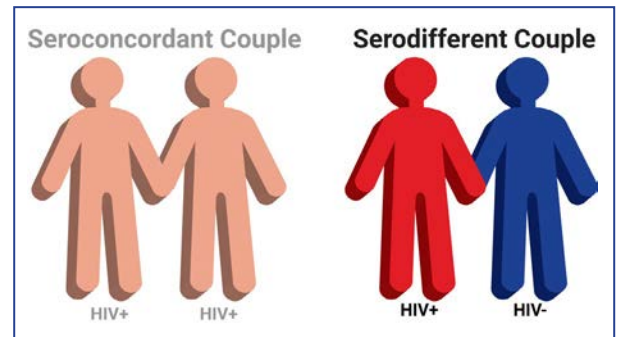


Figure 75

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 and opportunistic infections.

Sexual Transmission

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

Related Term(s): [Secondary Transmission](#)

Sexually Transmitted Disease (STD)

SEE: [Sexually Transmitted Infection](#)

Sexually Transmitted Infection (STI)

Synonym(s): Sexually Transmitted Disease (STD)

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

Sham

SEE: [Placebo](#)

Shigellosis

An enteric (intestinal) infection caused by a group of bacteria called *Shigella*. *Shigella* bacteria are typically transmitted through contact with contaminated human feces. Symptoms usually include watery or bloody diarrhea, abdominal pain, nausea, and fever. Certain bacterial enteric infections, including shigellosis, occur at a much higher rate in people with HIV than in people with healthy immune systems.

Related Term(s): [Opportunistic Infection](#)

Shingles

A noncontagious disease caused by the varicella zoster virus (VZV or HHV-3). VZV is the same virus that causes chickenpox. The virus remains in the nervous system of people who have had chickenpox, and it can become active years later to cause shingles. Symptoms of shingles can include numbness, itching, and severe pain that is followed by a rash of blister-like lesions along one side of the body. The pain can persist for weeks, months, or years after the rash heals. People with HIV are more likely to develop shingles than people with healthy immune systems.

Related Term(s): [Herpesviruses](#), [Varicella Zoster Virus](#)

Shock and Kill Strategy

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

An experimental strategy to cure HIV 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.

Related Term(s): [Latency-Reversing Agents](#), [Latent HIV Reservoir](#)

Shock-Kill Strategy

SEE: [Shock and Kill Strategy](#)

Simian Immunodeficiency Virus (SIV)

An HIV-like virus that can infect monkeys and apes and can cause a disease similar to AIDS. Because HIV and simian immunodeficiency virus (SIV) are closely related viruses, researchers study SIV as a way to learn more about HIV. However, SIV cannot infect humans, and HIV cannot infect monkeys.

Related Term(s): [Human Immunodeficiency Virus](#)

Single-Blind Study

Synonym(s): Single-Masked Study

A type of clinical trial in which only the investigators know which treatment (or other intervention) the participants are receiving.

Related Term(s): [Clinical Trial](#), [Double-Blind Study](#)

Single-Masked Study

SEE: [Single-Blind Study](#)

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.

Related Term(s): [Sensitivity](#), [True Negative](#)

Sperm Washing

A laboratory procedure used to separate semen (the fluid part of ejaculate) from sperm. Sperm washing can be considered as a reproductive option for an HIV-serodifferent couple in which the man has HIV. Because the seminal fluid contains the highest concentration of HIV, the “washed” sperm contains little, if any, HIV. However, because sperm washing has not been proven completely effective, couples using the procedure should be counseled regarding the potential likelihood of HIV transmission.

Related Term(s): [Serodifferent Couple](#)

Spermicide

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

Spinal Tap

Synonym(s): Lumbar Puncture

A procedure in which a needle is inserted into the lower region of the spinal cord to collect cerebrospinal fluid (CSF). The CSF is examined in a laboratory to diagnose and monitor certain infections. A spinal tap may also be performed to inject drugs or to reduce spinal fluid pressure.

Related Term(s): [Cerebrospinal Fluid](#)

Spleen

An organ of the lymphatic system. The spleen is located on the left side of the body, above the stomach. The spleen helps fight infection, keeps body fluids in balance, stores blood, and destroys old and damaged cells.

Related Term(s): [Lymphatic System](#)

Splenomegaly

Abnormal enlargement of the spleen.

Related Term(s): [Spleen](#)

Sputum Analysis

Synonym(s): Sputum Culture

Laboratory evaluation of sputum to detect certain infections, such as bacterial pneumonia and tuberculosis (TB). Sputum is the mucus-containing material produced by the cells lining the lungs and airways (bronchial tubes). The sputum used for analysis is collected when a person coughs or spits.

Sputum Culture

SEE: [Sputum Analysis](#)

Standard Medical Care

SEE: [Standard of Care](#)

Standard of Care

Synonym(s): Best Practice, Standard Medical Care, Standard Therapy

Treatment that experts agree is appropriate, accepted, and widely used for a given disease or condition.

Standard Therapy

SEE: [Standard of Care](#)

Statin

Synonym(s): HMG-CoA Reductase Inhibitor, Lipid-Lowering Agent

Any of a group of drugs used to lower the amount of cholesterol in the blood. Statins block a key liver enzyme involved in making cholesterol.

Related Term(s): [Cholesterol](#)

Stem Cells

Unspecialized cells from which other types of cells develop. When a stem cell divides, each new cell has the potential either to remain a stem cell or to become a specialized cell with a distinct function, such as a muscle cell or blood cell. Stem cells serve as a repair system for the body, replacing old and damaged cells. Stem cell transplants are used in cancer treatment. Research on using stem cells to treat other diseases is currently underway.

Stevens-Johnson Syndrome (SJS)

A severe and sometimes fatal form of skin rash characterized by red, blistered spots on the skin; blisters in the mouth, eyes, genitals, or other moist areas of the body; peeling skin that results in painful sores; and fever, headache, and other flu-like symptoms. Internal organs may also be affected. Stevens-Johnson syndrome (SJS) may occur as a severe reaction to certain drugs, including some antiretroviral (ARV) HIV drugs.

Stigma

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

Stomatitis

Inflammation of the mucous membranes of the mouth, such as the gums or lips. The causes of stomatitis vary and can include injury to the mouth, allergy, and infection.

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.

Related Term(s): [Mutation](#)

Streptococcus pneumoniae Infection

Infection caused by the bacterium *Streptococcus pneumoniae*, which is spread through contact with respiratory droplets from a person who is carrying the bacteria. The bacteria are a major cause of common illnesses, such as inflammation of the sinuses (sinusitis), but can also result in life-threatening infections, including meningitis and pneumonia. People with weakened immune systems, including people with HIV, are more likely to develop bacterial pneumonia, including *Streptococcus pneumoniae* infection, than people with healthy immune systems.

Related Term(s): [Opportunistic Infection](#), [Pneumonia](#)

Stroke

Synonym(s): Brain Attack

An interruption of blood flow to the brain, caused by a broken or blocked blood vessel. A stroke results in sudden loss of brain function, such as loss of consciousness, paralysis, or changes in speech. Stroke is a medical emergency and can be life-threatening.

Structured Treatment Interruption

Synonym(s): Drug Holiday

A planned break from treatment, during which a person stops taking antiretroviral therapy (ART). Structured treatment interruptions may be used to reduce toxic effects of medications, to enhance a medication's effectiveness when restarted, or as a step toward stopping treatment altogether. Structured interruption of HIV treatment is not recommended outside of controlled clinical trials.

Related Term(s): [Analytical Treatment Interruption](#)

Subclinical Infection

An infection that has no symptoms or noticeable signs. A subclinical infection may be an early stage of an infection or a very mild infection.

Subcutaneous (SC, Sub-Q)

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

Subcutaneous Adipose Tissue (SAT)

Fat tissue located right under the skin. HIV-associated lipodystrophy can include changes in subcutaneous adipose tissue (SAT), which may be related to HIV itself or use of certain antiretroviral (ARV) drugs.

Related Term(s): [Lipodystrophy Syndrome](#), [Visceral Adipose Tissue](#)

Suboptimal Immunologic Response

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

Related Term(s): [CD4 Count](#), [Treatment Failure](#), [Viral Suppression](#)

Substance Abuse and Mental Health Services Administration (SAMHSA)

The lead federal agency for reducing the impact of substance use disorder and mental health conditions in the United States. The Substance Abuse and Mental Health Services Administration (SAMHSA) provides grant funding to address issues of HIV, AIDS, and viral hepatitis.

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.

Sugar

SEE: [Glucose](#)

Sugar Pill

SEE: [Placebo](#)

Sulfa Drugs

SEE: [Sulfa Medicine\(s\)](#)

Sulfa Medicine(s)

Synonym(s): Sulfa Drugs, Sulfonamides

Any medicine that contains a chemical group called a sulfonamide as part of its structure. Sulfa medicines include certain antibiotic drugs (classified as sulfonamides) and nonantibiotic drugs. People with HIV are more likely to experience allergic reactions to sulfa medicines than people without HIV.

Related Term(s): [Hypersensitivity](#)

Sulfonamides

SEE: [Sulfa Medicine\(s\)](#)

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.

Related Term(s): [Drug Resistance](#)

Superiority Trial

A clinical trial designed to show that a new drug (or other intervention) is more effective than the drug to which it is compared.

Related Term(s): [Noninferiority Trial](#)

Supportive Care

SEE: [Palliative Care](#)

Suppressor T Cell

SEE: [Regulatory T Lymphocyte](#)

Suppressor T Lymphocyte

SEE: [Regulatory T Lymphocyte](#)

Surrogate Endpoint

Synonym(s): Surrogate Marker

Substitute measure for a clinical endpoint. Because it can be difficult to measure clinical endpoints in studies running for several years, researchers often use surrogate endpoints as substitute measures for clinical endpoints. For example, in HIV-related clinical trials, HIV viral load (VL) and CD4 T lymphocyte (CD4) count are surrogate endpoints for HIV disease progression.

Related Term(s): [Clinical Endpoint](#), [Clinical Trial](#)

Surrogate Marker

SEE: [Surrogate Endpoint](#)

Symptom Management

SEE: [Palliative Care](#)

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.

Syndrome

A group of symptoms or conditions that occur together and are collectively associated with a specific disease or with the risk of developing a specific disease.

Syndrome X

SEE: [Metabolic Syndrome](#)

Synergism

SEE: [Drug Synergism](#)

Synergy

SEE: [Drug Synergism](#)

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 pregnant woman to 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 likelihood of sexual transmission of HIV.

Related Term(s): [Opportunistic Infection](#), [Sexually Transmitted Infection](#)

Systemic

Pertaining to the entire body. A systemic infection affects the whole body. Systemic drug therapy involves giving a drug that travels through the bloodstream and affects cells throughout the body.

T

T Cell

SEE: T Lymphocyte

T-Cell Depletion

SEE: [T-Cell Exhaustion](#)

T-Cell Exhaustion

Synonym(s): T-Cell Depletion

The gradual decrease in T-cell function that can occur with chronic infections and cancers. T-cell exhaustion weakens the immune system, making it difficult for the body to fight off infections or kill cancer-causing cells.

t.i.d., tid

SEE: [TID](#)

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.

Related Term(s): [CD4 T Lymphocyte](#), [CD8 T Lymphocyte](#), [Lymphocyte](#)

T-Tropic Virus

SEE: [X4-Tropic Virus](#)

Tachycardia

Abnormal rapid heartbeat. In adults, a rate over 100 beats per minute is usually considered tachycardia.

Tachypnea

Abnormal increased rate of breathing.

Talaromyces marneffe Infection

Synonym(s): Penicilliosis, *Penicillium marneffe* Infection, Talaromycosis

A disease caused by the fungus *Talaromyces marneffe*, which only affects people who live in or visit Southeast Asia, southern China, or eastern India. Symptoms include fever, anemia, weight loss, and skin lesions. *Talaromyces marneffe* infection occurs mostly in people with weakened immune systems, such as people with HIV. Without timely antifungal treatment, the disease can be fatal.

Related Term(s): [Opportunistic Infection](#)

Talaromycosis

SEE: [Talaromyces marneffe](#) Infection

Tanner Staging

SEE: [Sexual Maturity Rating](#)

Teratogenic

Pertaining to birth defects and developmental malformations.

Testosterone

A type of sex hormone. Testosterone is necessary for developing and maintaining certain male sex characteristics, and it helps maintain muscle mass and bone density. Testosterone deficiency is common with HIV and may result in a decrease in muscle mass, an increase in body fat, or erectile dysfunction.

The Clap

SEE: [Gonorrhea](#)

Therapeutic Drug Monitoring (TDM)

Measuring the concentration of a drug in the blood at scheduled intervals. Therapeutic drug monitoring (TDM) is used to determine the dose at which a drug will be the most safe and effective. Although TDM is not recommended for routine use in HIV treatment, it may be considered in some situations.

Related Term(s): [Therapeutic Index](#)

Therapeutic HIV Vaccine

Synonym(s): HIV Therapeutic Vaccine

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

Related Term(s): [Preventive HIV Vaccine](#), [Vaccine](#)

Therapeutic Index (TI)

(Figure 76)

A ratio that compares the blood concentration at which a drug becomes toxic and the concentration at which the drug is effective. The larger the therapeutic index (TI), the safer the drug is. If the TI is small (the difference between the two concentrations is very small), the drug must be dosed carefully and the person receiving the drug should be monitored closely for any signs of drug toxicity.

Related Term(s): [Therapeutic Drug Monitoring](#)

Thrombocytopenia

A lower-than-normal number of blood platelets.

Related Term(s): [Platelet](#)

Thymus

An organ of the lymph system where T lymphocytes (T cells) develop and mature. The thymus is important for normal immune system development early in life and is at its largest size at puberty. The thymus declines in size and function during adult life, eventually being replaced by fat.

Related Term(s): [Lymphatic System](#), [T Lymphocyte](#)

TID

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

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

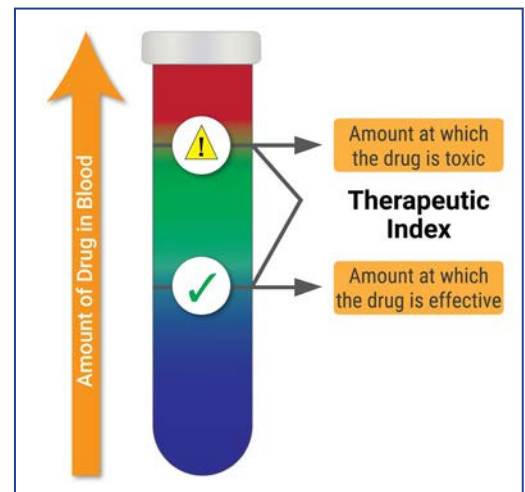


Figure 76

Titer

A laboratory measurement of the concentration of a substance in a solution. For example, an antibody titer measures the presence and amount of antibodies in the blood.

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.

Related Term(s): [Investigational Drug](#)

Topical

Pertaining to a drug or treatment applied to the outer surface of the body, such as the skin or mucous membranes.

Torulosis

SEE: [Cryptococcosis](#)

Toxic Epidermal Necrolysis (TEN)

A severe form of Stevens-Johnson syndrome involving at least 30 percent of the total body skin area.

Related Term(s): [Stevens-Johnson Syndrome](#)

Toxicity

Synonym(s): Drug Toxicity

The extent to which a drug causes adverse effects. Drug toxicity is one of the factors considered when selecting antiretroviral (ARV) drugs to include in an HIV treatment regimen.

Related Term(s): [Adverse Event](#)

***Toxoplasma gondii* Encephalitis**

Synonym(s): Toxoplasmic Encephalitis (TE)

Brain inflammation associated with toxoplasmosis, an infection caused by the parasite *Toxoplasma gondii*. Symptoms of *Toxoplasma gondii* encephalitis can include headache, confusion, muscle weakness, fever, seizures, and coma. *Toxoplasma gondii* encephalitis is a common complication of toxoplasmosis in people who are severely immunocompromised, including people with AIDS. In people with HIV, *Toxoplasma gondii* encephalitis is an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#), [Encephalitis](#), [Opportunistic Infection](#), [Toxoplasmosis](#)

Toxoplasmic Encephalitis (TE)

SEE: [Toxoplasma gondii Encephalitis](#)

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 woman who is pregnant to her child. 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.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#), [Toxoplasma gondii Encephalitis](#)

Transcription and Translation

SEE: [Replication](#)

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 transmitted from a pregnant woman to her child during pregnancy, labor or delivery, or breastfeeding. HIV medicines reduce the likelihood of HIV transmission.

Related Term(s): [Perinatal Transmission](#), [Secondary Transmission](#)

Transmitted Resistance

Synonym(s): Primary Resistance

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

Related Term(s): [Acquired Resistance](#), [Drug Resistance](#)

Transplacental

Passage through or across the placenta. Transplacental usually refers to the exchange of nutrients, waste products, drugs, infectious organisms, or other substances between a woman who is pregnant and the fetus.

Treatment as Prevention (TasP)

A term that describes the reduced likelihood 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 a pregnant woman to child during pregnancy, birth, and breastfeeding.

Related Term(s): [Transmission](#), [Undetectable Viral Load](#)

Treatment-Experienced

(Figure 77)

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

Related Term(s): [Treatment-Naive](#)

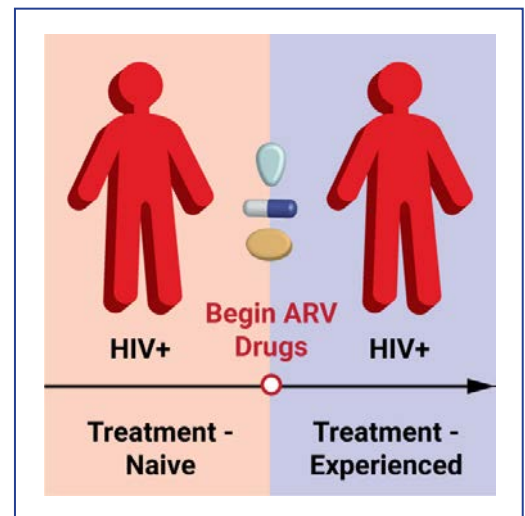


Figure 77

Treatment Failure

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

Related Term(s): [Antiretroviral Therapy](#), [Suboptimal Immunologic Response](#), [Virologic Failure](#)

Treatment-Naive

(Figure 78)

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

Related Term(s): [Treatment-Experienced](#)

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.

Related Term(s): [Drug Class](#)

Treatment Simplification

SEE: [Regimen Simplification](#)

Triglycerides

A type of fat in blood and adipose (fat) tissue.

Triple-Class Experienced

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

Related Term(s): [Drug Class](#)

Tropism

SEE: [Viral Tropism](#)

Trough Concentration

SEE: C_{min}

Trough Level

SEE: C_{min}

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.

Related Term(s): [False Negative](#)

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.

Related Term(s): [False Positive](#)

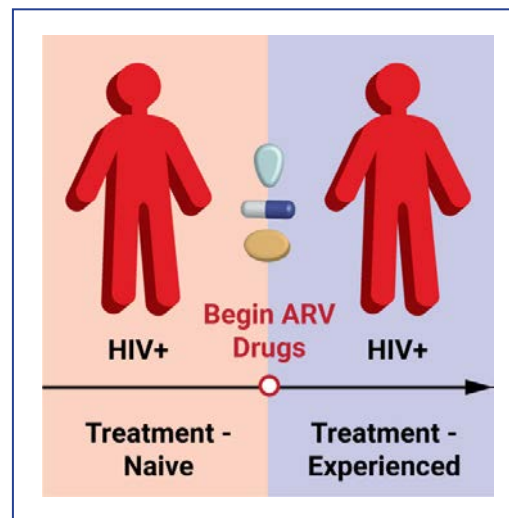


Figure 78

T

Tuberculin Skin Test

Synonym(s): Mantoux Tuberculin Skin Test, Purified Protein Derivative Test

A screening test for tuberculosis (TB) performed by injecting a small amount of fluid (called tuberculin) just below the skin. A positive reaction 48 to 72 hours after the injection indicates that the person has the TB bacteria. Additional tests are needed to determine whether the person has latent TB or TB disease. People with HIV or another medical problem that weakens the immune system should be tested for TB.

Related Term(s): [Latent Tuberculosis Infection](#), [Tuberculosis](#), [Tuberculosis Disease](#)

Tuberculosis (TB)

An infection caused by the bacteria *Mycobacterium tuberculosis* and *Mycobacterium bovis*. Tuberculosis (TB) is spread when a person with active 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 disease is considered an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#), [Tuberculin Skin Test](#), [Tuberculosis Disease](#)

Tuberculosis Disease

The active form of tuberculosis (TB). 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 considered an AIDS-defining condition.

Related Term(s): [AIDS-Defining Condition](#), [Opportunistic Infection](#)

U

Undetectable Viral Load

(Figure 79)

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.

Related Term(s): [Latent HIV Reservoir](#), [Viral Load Test](#)

Urinalysis (UA)

Synonym(s): Urine Analysis, Urine Test

Physical, chemical, and microscopic examination of urine. Urinalysis can detect a specific substance, such as glucose or blood, in the urine. This can be helpful in diagnosing a disease or monitoring the body's response to treatment.

Urine Albumin

SEE: [Proteinuria](#)

Urine Analysis

SEE: [Urinalysis](#)

Urine Test

SEE: [Urinalysis](#)

Urogenital System

SEE: [Genitourinary Tract](#)

Urogenital Tract

SEE: [Genitourinary Tract](#)

Urolithiasis

Calculi (stones) in the urinary tract. Use of some antiretroviral (ARV) drugs may cause urolithiasis.

Urticaria

Synonym(s): Hives

Raised, swollen, itchy areas on the skin or mucous membranes, usually caused by an allergic reaction to a drug or food.

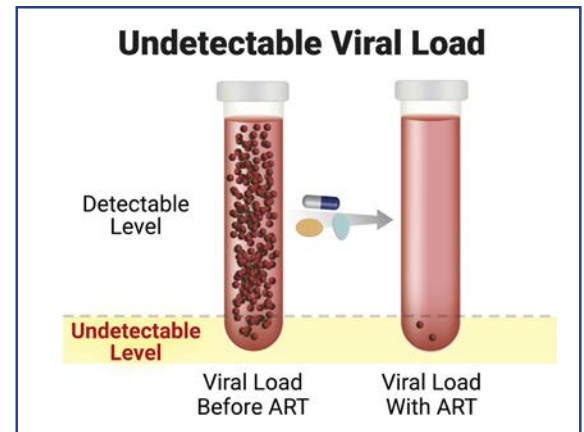


Figure 79

U.S. Department of Health and Human Services (HHS)

The primary federal agency for protecting the health of all Americans and providing essential human services. The U.S. Department of Health and Human Services (HHS) works closely with state and local governments, and many HHS-funded services are provided at the local level by state or county agencies, or through private sector grantees. The agency's 11 operating divisions, including the Centers for Disease Control and Prevention (CDC), the U.S. Food and Drug Administration (FDA), and the National Institutes of Health (NIH), collectively administer more than 100 programs.

Related Term(s): [Centers for Disease Control and Prevention](#), [National Institutes of Health](#), [U.S. Food and Drug Administration](#)

U.S. Food and Drug Administration (FDA)

The federal agency responsible for ensuring the safety, effectiveness, and security of human drugs (including vaccines and other biological products for human use), veterinary drugs, and medical devices. The agency is responsible for the safety and security of our nation's food supply, cosmetics, dietary supplements, and electronic products that give off radiation. The agency also regulates tobacco products.

V

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).

Related Term(s): [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, no HIV vaccine is currently approved for use outside of clinical trials.

Related Term(s): [Preventive HIV Vaccine](#), [Therapeutic HIV Vaccine](#)

Vacuolar Myelopathy

A neurological disorder associated with advanced HIV. Vacuolar myelopathy causes the protective myelin sheath to pull away from nerve cells of the spinal cord, forming small holes (vacuoles) in nerve fibers. Symptoms of vacuolar myelopathy include weak and stiff legs and unsteadiness when walking.

Related Term(s): [Myelin](#)

Vaginal Candidiasis

SEE: [Vulvovaginal Candidiasis](#)

Vaginal Ring

SEE: [Intravaginal Ring](#)

Vaginal Yeast Infection

SEE: [Vulvovaginal Candidiasis](#)

Valley Fever

SEE: [Coccidioidomycosis](#)

Varicella

SEE: [Primary Varicella Infection](#)

Varicella Zoster Virus (VZV)

Synonym(s): Herpes Zoster, Human Herpesvirus 3

A type of herpesvirus that causes chicken pox. After initial infection with varicella zoster virus (VZV), the inactive (latent) form of the virus can remain in the body. If the latent virus becomes active again, it can cause shingles.

Related Term(s): [Herpesviruses](#), [Opportunistic Infection](#), [Shingles](#)

Varicella Zoster Virus Retinitis (VZVR)

SEE: [Progressive Outer Retinal Necrosis](#)

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.

Related Term(s): [Genetic Engineering](#)

Venereal Warts

SEE: [Genital Warts](#)

Vertical Transmission

SEE: [Perinatal Transmission](#)

Viral Envelope Glycoprotein 41

SEE: [gp41](#)

Viral Envelope Glycoprotein 120

SEE: [gp120](#)

Viral Envelope Glycoprotein 160

SEE: [gp160](#)

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 latent HIV reservoirs that persist in a person's body despite antiretroviral therapy (ART).

Related Term(s): [Latent HIV Reservoir](#)

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.

Related Term(s): [Viral Load 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, guide treatment choices, and monitor response to antiretroviral therapy (ART).

Related Term(s): [Qualitative Transcription-Mediated Amplification Assay](#), [Quantitative Branched DNA Assay](#), [Reverse Transcriptase-Polymerase Chain Reaction–Based Assay](#)

Viral Rebound

(Figure 80)

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.

Related Term(s): [Undetectable Viral Load](#)

Viral Set Point

SEE: [Set Point](#)

Viral Suppression

(Figure 81)

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.

Related Term(s): [Undetectable Viral Load](#)

Viral Tropism

(Figure 82)

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 (R5-tropic) or the CXCR4 coreceptor (X4-tropic) or both (dual-tropic).

Related Term(s): [Dual-Tropic Virus](#), [R5-Tropic Virus](#), [X4-Tropic Virus](#)

Viremia

The presence of viruses in the blood.

Virucide

Synonym(s): Virucide

A substance that can destroy or inactivate a virus.

Virologic Control

SEE: [Viral Suppression](#)

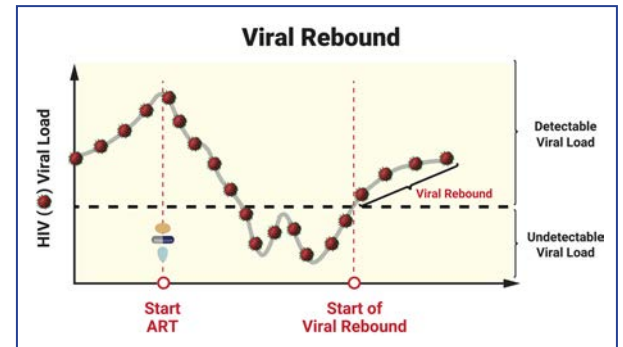


Figure 80

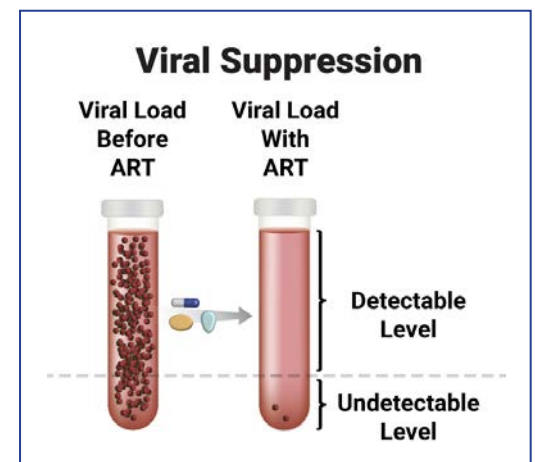


Figure 81

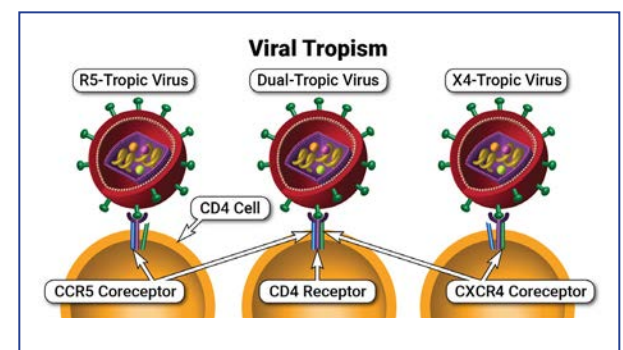


Figure 82

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.

Related Term(s): [Treatment Failure](#)

Virology

The study of viruses and viral diseases.

Virucide

SEE: [Viricide](#)

Virus

A microscopic infectious agent that requires a living host cell 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.

Visceral Adipose Tissue (VAT)

Synonym(s): Intra-Abdominal Fat, Visceral Fat

Fat tissue located deep in the abdomen and around internal organs. The distribution of visceral adipose tissue (VAT) may be affected by HIV or the use of some antiretroviral (ARV) drugs.

Related Term(s): [Lipodystrophy Syndrome](#)

Visceral Fat

SEE: [Visceral Adipose Tissue](#)

Vulvovaginal Candidiasis

Synonym(s): Candidal Vaginitis, Vaginal Candidiasis, Vaginal Yeast Infection

A common fungal infection that is caused by overgrowth of the yeast *Candida* (usually *Candida albicans*) in the vagina. Symptoms can range from mild to severe and may include itching, burning, redness, and swelling in and around the vagina and vulva; pain during sex; pain when urinating; and a thick, white vaginal discharge that can look like cottage cheese and does not have a bad odor. Women who are immunocompromised, including women with HIV, are more likely to get vulvovaginal candidiasis. In women with advanced immunosuppression, episodes of vulvovaginal candidiasis may be more severe or recur more often.

Related Term(s): [Candidiasis](#), [Opportunistic Infection](#)

Wasting Syndrome

An involuntary loss of more than 10 percent 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.

Related Term(s): [AIDS-Defining Condition](#)

Western Blot

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

Related Term(s): [Antibody](#), [Viral Load Test](#)

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, nonmutated 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. When HIV is transmitted from one person to another, most people initially get wild-type virus. However, some people may initially get a mutated, drug-resistant strain of HIV.

Related Term(s): [Drug Resistance](#), [Mutation](#)

Window Period

The time period from exposure to HIV 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.

Related Term(s): [False Negative](#), [Seroconversion](#)

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 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.

X

X4-Tropic Virus

(Figure 83)

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 its early stages, but the virus may later switch to using either only CXCR4 (X4-tropic) or both CCR5 and CXCR4 (dual-tropic).

Related Term(s): [CCR5](#), [CD4 Receptor](#), [CD4 T Lymphocyte](#), [CXCR4](#), [Dual-Tropic Virus](#), [R5-Tropic Virus](#)

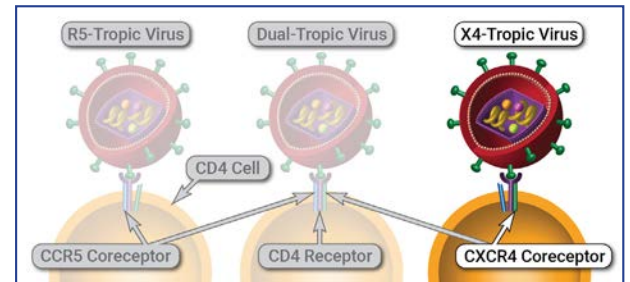


Figure 83



Yeast Infection

SEE: [Candidiasis](#)

The background of the page is a dark teal color with a pattern of various microscopic structures. These include several large, roughly spherical cells with internal details, smaller spherical particles, and elongated, rod-like structures. The overall appearance is that of a biological or medical illustration, possibly related to virology or cell biology.

Appendices

Abbreviations and Acronyms

AACTG	Adult AIDS Clinical Trials Group
ACTG	AIDS Clinical Trials Group
ADAP	AIDS Drug Assistance Program
ADC	AIDS dementia complex
AE	adverse event
AETC	AIDS Education and Training Center
AHRQ	Agency for Healthcare Research and Quality
AIDS	acquired immunodeficiency syndrome
ALP	alkaline phosphatase
ALT	alanine aminotransferase
APC	antigen-presenting cell
ARN	acute retinal necrosis
ART	antiretroviral therapy
ARV	antiretroviral
ASO	AIDS Service Organization
AST	aspartate aminotransferase
ATI	analytical treatment interruption
ATN	antiretroviral toxic neuropathy
AUC	area under the curve
AVN	avascular necrosis
B2M	beta-2 microglobulin
BA	bacillary angiomatosis
bdNA	quantitative branched DNA assay
BID	<i>bis in die</i> , Latin for “two times a day”
bNAb	broadly neutralizing antibody
BRM	biological response modifier
BUN	blood urea nitrogen
CAM	complementary and alternative medicine
CAP	community-acquired pneumonia
CARE Act	Ryan White Comprehensive AIDS Resources Emergency Act
cART	combined antiretroviral therapy
CBC	complete blood count
CBO	community-based organization
CCR5	C-C chemokine receptor type 5
CD4	cluster of differentiation 4
CD8	cluster of differentiation 8

CDC	Centers for Disease Control and Prevention
CDC-NPIN	Centers for Disease Control and Prevention–National Prevention Information Network
CHD	coronary heart disease
CIDP	chronic inflammatory demyelinating polyneuropathy
C_{max}	maximum concentration
C_{min}	minimum concentration
CMP	comprehensive metabolic panel
CMS	Centers for Medicare and Medicaid Services
CMV	cytomegalovirus
CNS	central nervous system
CSF	cerebrospinal fluid
CXCR4	C-X-C chemokine receptor type 4
CYP3A4	cytochrome P450 3A4
CYP450	cytochrome P450
DAART	directly administered antiretroviral therapy
DAIDS	Division of Acquired Immunodeficiency Syndrome
DEXA	dual energy X-ray absorptiometry
DMC	data monitoring committee
DNA	deoxyribonucleic acid
DOT	directly observed therapy
DRESS	drug reaction with eosinophilia and systemic symptoms
DSMB	data and safety monitoring board
DSMC	data and safety monitoring committee
DSP	distal sensory polyneuropathy
DXA	dual energy X-ray absorptiometry
EBV	Epstein-Barr virus
EC	enteric-coated
EF	eosinophilic folliculitis
ELISA	enzyme-linked immunosorbent assay
ESLD	end-stage liver disease
ESRD	end-stage renal disease
FDA	U.S. Food and Drug Administration
FDC	fixed-dose combination
GART	genotypic antiretroviral resistance test
GBS	Guillain-Barré syndrome
G-CSF	granulocyte-colony stimulating factor
GGT	gamma-glutamyl transpeptidase

GI	gastrointestinal
GM-CSF	granulocyte macrophage-colony stimulating factor
gp	glycoprotein
HAART	highly active antiretroviral therapy
HAD	HIV-associated dementia
HAND	HIV-associated neurocognitive disorders
HAV	hepatitis A virus
HBV	hepatitis B virus
Hct	hematocrit
HCV	hepatitis C virus
HDL	high-density lipoprotein
HELLP	hemolysis, elevated liver enzyme levels, and low platelet count
hGH	human growth hormone
HHS	U.S. Department of Health and Human Services
HHV	human herpesvirus
HIV	human immunodeficiency virus
HIVAN	HIV-associated nephropathy
HLA	human leukocyte antigen
HMG-CoA	hydroxymethylglutaryl coenzyme A
HPTN	HIV Prevention Trials Network
HPV	human papillomavirus
HRSA	Health Resources and Services Administration
HSV	herpes simplex virus
HTLV-1	human T-cell lymphotropic virus type 1
HVTN	HIV Vaccine Trials Network
ICSI	intracytoplasmic sperm injection
IFN	interferon
IHS	Indian Health Service
IL-2	interleukin-2
IL-7	interleukin-7
IM	intramuscular
IMPAACT	International Maternal Pediatric Adolescent AIDS Clinical Trials
IND	Investigational New Drug
INSIGHT	International Network for Strategic Initiatives in Global HIV Trials
INSTI	integrase strand transfer inhibitor
IRB	institutional review board
IRIS	immune reconstitution inflammatory syndrome

ITP	immune thrombocytopenia
IUI	intrauterine insemination
IV	intravenous
IVF	<i>in vitro</i> fertilization
IVIG	intravenous immunoglobulin
IVR	intravaginal ring
JCV	John Cunningham virus
KPS	Karnofsky Performance Status
KS	Kaposi sarcoma
KSHV	Kaposi sarcoma–associated herpesvirus
LGE	linear gingival erythema
LGV	lymphogranuloma venereum
LIP	lymphoid interstitial pneumonitis
LTBI	latent tuberculosis infection
LTNP	long-term nonprogressors
m-DOT	modified directly observed therapy
MAC	<i>Mycobacterium avium</i> complex
MACS	Multicenter AIDS Cohort Study
MCD	multicentric Castleman disease
MDR-HIV	multidrug-resistant HIV
MDR-TB	multidrug-resistant tuberculosis
MEDLINE	Medical Literature Analysis and Retrieval System Online
MEMS	medication event monitoring system
MI	maturation inhibitor
MPT	multipurpose prevention technology
MRI	magnetic resonance imaging
mRNA	messenger RNA
MSM	men who have sex with men
MSMW	men who have sex with men and women
MTCT	mother-to-child transmission
MTN	Microbicide Trials Network
NAT	nucleic acid test
NCCIH	National Center for Complementary and Integrative Health
NCI	National Cancer Institute
NDA	new drug application
NHL	non-Hodgkin lymphoma
NIAID	National Institute of Allergy and Infectious Diseases

NIH	National Institutes of Health
NLM	National Library of Medicine
NK	natural killer
NM	nemaline rod myopathy
NMR	nuclear magnetic resonance
NNRTI	non-nucleoside reverse transcriptase inhibitor
nPEP	nonoccupational postexposure prophylaxis
NRTI	nucleoside reverse transcriptase inhibitor
NSAID	nonsteroidal anti-inflammatory drug
NtRTI	nucleotide reverse transcriptase inhibitor
OAR	Office of AIDS Research
OBT	optimized background therapy
OHL	oral hairy leukoplakia
OI	opportunistic infection
OMH	Office of Minority Health
oPEP	occupational postexposure prophylaxis
PACTG	Pediatric AIDS Clinical Trials Group
PACTG 076	Pediatric AIDS Clinical Trials Group 076
PBMC	peripheral blood mononuclear cell
PCP	<i>Pneumocystis</i> pneumonia
PCR	polymerase chain reaction
PEL	primary effusion lymphoma
PEP	postexposure prophylaxis
PEPFAR	President's Emergency Plan for AIDS Relief
PGL	persistent generalized lymphadenopathy
PI	protease inhibitor
PID	pelvic inflammatory disease
PJP	<i>Pneumocystis jirovecii</i> pneumonia
PMTCT	prevention of mother-to-child transmission
PML	progressive multifocal leukoencephalopathy
PNS	peripheral nervous system
PORN	progressive outer retinal necrosis
PrEP	pre-exposure prophylaxis
QD	<i>quaque die</i> , Latin for "once a day"
QID	<i>quater in die</i> , Latin for "four times a day"
RNA	ribonucleic acid
RT	reverse transcriptase

RT-PCR	reverse transcriptase-polymerase chain reaction-based assay
SAMHSA	Substance Abuse and Mental Health Services Administration
SAT	self-administered therapy
SAT	subcutaneous adipose tissue
SC	subcutaneous
SGPT	serum glutamate pyruvate transaminase
SIV	simian immunodeficiency virus
SJS	Stevens-Johnson syndrome
SMR	sexual maturity rating
STD	sexually transmitted disease
STI	sexually transmitted infection
Sub-Q	subcutaneous
t_½	half-life
TasP	Treatment as Prevention
TB	tuberculosis
TDM	therapeutic drug monitoring
TE	toxoplasmic encephalitis
TEN	toxic epidermal necrolysis
TI	therapeutic index
TID	<i>ter in die</i> , Latin for “three times a day”
UA	urinalysis
VAT	visceral adipose tissue
VL	viral load
VZV	varicella zoster virus
VZVR	varicella zoster virus retinitis
WHO	World Health Organization
WIHS	Women’s Interagency HIV Study
XDR-TB	extensively drug-resistant tuberculosis

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