

**2021**  
**Core**  
***CAB Handbook***

***AIDS Clinical Trials Group  
Community Advisory Board  
Mission Statement  
(12/08/97)***

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The mission of the Community Advisory Boards (CABs) of the AIDS Clinical Trials Group (ACTG) is to integrate community involvement in the AIDS Clinical Trials Units (ACTUs) in order to advance HIV/AIDS research.

**Community Advisory Boards Purpose**

CAB's provide an opportunity for affected communities, especially clinical trials participants to:

- understand the clinical research process;
- voice concerns regarding specific clinical studies, their development, implementation and outcomes;
- give assistance concerning issues related to the accrual and retention of trial participants;
- give clinical trial participants necessary advocacy;
- forge a viable partnership that will lead to improved knowledge of HIV/AIDS disease;
- give a means to address grievance issues; and
- promote ethical research purposes and practices.

***The AIDS Clinical Trials Group  
Guidelines for Community Advisory Boards***

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The following is a joint recommendation of the ACTG Executive Committee, the ACTG Global Community Advisory Board (GCAB), and ACTG Community Advisory Board (CAB) members for the effective operation of Community Advisory Boards.

1. Each ACTG Clinical Trials Unit (CTU) shall maintain a Community Advisory Board (CAB) and Clinical Research Sites (CRS) are encouraged to have a local CAB. Units with multiple CRS's within the geographic area of the main unit should strive to have a CAB which reflects the demographic diversity of the catchment area of the main unit and the local subunits. In general, CABs, Principal Investigators (PIs), and other ACTU staff shall:

Encourage active discussion and participation of the CAB in all phases of protocol development, implementation, accrual and outcomes; and

Maintain periodic reports at each site on the progress of trials, and work toward solving any problems of accrual and retention in those trials.

2. Each CAB shall be organized jointly by community representatives and Principal Investigators. Community representatives on the CABs shall include people infected with HIV and trial participants; others may include, patient advocates, parents, community based health care providers, religious leaders, and representatives of underserved communities.

The membership of the CAB shall strive to accurately reflect the demographics of HIV infection in the area. PI, staff, and other CAB members shall work together to educate and inform new CAB members of all issues pertinent to the local CAB.

3. The organizational structure of the CAB shall be determined by its community members, and as such, it is assumed that the structure of each Board will vary. The following issues should, however, be consistent:

Monthly meetings are strongly recommended; a CAB shall strive to meet at least six times a year.

Principal Investigator and ACTG staff may not be voting members of the CAB.

Some sessions shall be educational in nature to develop an educated constituency. This process shall address basic science, protocol development and evaluation, the ACTG structure, the GCAB, and local Institutional Review Board (IRB) process.

ACTG CRS's shall provide administrative support, including but not limited to: reasonable costs for meetings, computer/internet access, advertising/promotion, telephone, photocopying, fax usage, postage, trials listings, translation of materials, interpretation during meetings, transportation, child care and costs for travel to the national ACTG meetings.

The Principal Investigator shall be supportive of participation of local CAB members in national ACTG activities. Participation with the GCAB should be encouraged and supported.

Each ACTU CRS shall designate two individuals to receive Adult CAB communications. One should be an ACTU staff person and the other should be a non-staff CAB member. These individuals should assure that all other CAB members receive these communications in a timely manner.

4. The CAB and local ACTU staff shall design and efficiently implement outreach programs to bring persons of all socioeconomic statuses into trials and to increase the participation and retention of women, intravenous drug users, adolescents, people of color, and underserved populations.
  
5. The PI or his/her delegate(s) shall consult with the CAB on all matters effecting the conduct of clinical trials in each community, including but not limited to:
  - a. the preparation of recompetition applications, budgets and budget revisions;
  - b. choosing which ACTG protocols to participate in; and
  - c. the submission of ACTG concept sheets by local investigators.

## **Community Call Schedule 2021**

**GCAB – usually fourth Thursday of each month  
10 AM Eastern Standard Time, 11 AM Eastern Daylight Time**

**January 28 at 10:00 AM EST  
February 25 at 10:00 AM EST  
March 25 at 11:00 AM EDT  
April 22 at 11:00 AM EDT  
May 27 at 11:00 AM EDT  
June 24 at 11:00 AM EDT  
July 22 at 11:00 AM EDT  
August 26 at 11:00 AM EDT  
September 23 at 11:00 AM EDT  
October 28 at 11:00 AM EDT  
November 18 at 10:00 AM EST  
December 16 at 10:00 AM EST**

**Africa CAB Education – Mondays, quarterly, depending on other  
scheduling  
9 AM Eastern**

**February 8  
May 17  
August 16  
November 15**

**Call dates may change due to scheduling conflicts.**

## **How to critically (and quickly) read a protocol** **Prepared by Jeffrey Schouten**

One of the challenges of being a CAB or CSS member is learning how to critically review a protocol from a community perspective. These suggestions will help you focus on the most critical areas of the protocols you will be reading and save you time.

The cover sheet of the protocol tells by which Scientific Committee the protocol is developed within and supervised. Next is a listing of all the members of the protocol team, and should always include the CSS representative. Then there is a list of the sub studies of the main study.

**The first section to review to get a basic understanding of the protocol is the "Schema".** There, the basic protocol is outlined, including any randomizations, the number of subjects, the treatment arms, criteria for treatment response and/or failure, and secondary steps, etc. Spend some time reviewing the schema so you have a good idea of the general design of the study, and the target subjects, i.e. treatment naïve, single PI failure, heavily pretreated, etc.

Next review the primary and secondary objects of the study. Primarily focus on the primary objectives and ask if this is a reasonable question to answer, is it important, is it very feasible, etc?

**I think the most important areas to review are the inclusion and exclusion criteria.** It is here where very critical decisions are made concerning who can get into the study and who cannot. Ask if the criteria unreasonably exclude certain people, i.e. those between 13 and 18 years old, people with only minor liver function abnormalities, etc. Unless there is a good justification for it, most ACTG studies are open to all people, 13 years of age or older. The more people who are excluded from a study, the less generally applicable will be the results of the study. For example, many studies used to exclude people with liver function test 3 times above normal, which excluded many people co-infected with Hepatitis C. Now, many protocols only exclude people with liver function tests five times above normal.

**Look at the table of evaluations, which will tell you how often someone has to come in for exams and blood tests.** Are too many blood tests being done, are not enough viral loads being done, etc.? Also, ask whether the person in the study will get the result of the blood test in "real time", i.e. will it be done immediately, or will the test be "batched", i.e., run at a much later time, often with the result never being provided to the person in the study.

Lastly, review the inform consent. Now that you have a good idea about what the study is all about, does the informed consent explain it in simple, clear language? Is there too much "medicalese" in the consent? Are all the major risks and benefits explained? Keep in mind that the informed consent is only a "template", in that each individual institution's Institutional Review Board has their own requirements for the content and format for informed consents. Also, quickly review the number of sub studies, and ask if it is feasible to try to do so many studies under one main study?

## Glossary of HIV-Related Terms

### A

#### abacavir (ABC, Ziagen)

a nucleoside analogue. Abacavir can cause a life-threatening allergic reaction in 3% to 5% of people.

#### abscess

an isolated accumulation of pus associated with a localized infection. Abscesses may result in tissue destruction, pain and swelling; severe abscesses may require surgical drainage.

#### absolute CD4 cell count

the number of CD4 cells in a cubic millimeter (mm<sup>3</sup>) of blood. See also CD4 cell count.

#### accelerated approval

FDA regulations governing early marketing approval of promising drugs for life-threatening illnesses.

#### acquired immune deficiency syndrome (AIDS)

the late stage of HIV disease. AIDS involves the loss of function of the immune system as CD4 cells are infected and destroyed, allowing the body to succumb to opportunistic infections (OIs) (e.g., *Pneumocystis carinii* pneumonia, toxoplasmosis) that are generally not pathogenic in healthy people. Symptoms of AIDS include malignancies and wasting syndrome. CDC defines AIDS as the presence of at least one of several OIs or the presence of fewer than 200 CD4 cells/mm<sup>3</sup> in an HIV-positive person.

#### ACH-126,443

A potent anti-HIV and anti-HBV L-nucleoside analogue with a long 24 hour half-life that may avoid or reverse mitochondrial toxicity, perhaps effective against resistant HIV virus.

#### ACTG

see AIDS Clinical Trials Group

#### active immunity

immunity naturally produced by the body's own immune system in response to stimulation by foreign antigens. Contrast with passive immunity.

#### active immunization

a process by which a person is inoculated with an antigen to encourage the immune system to mount an immune response, e.g., by producing antibodies. Contrast with passive immunization.

#### acute retroviral syndrome (ARS)

a combination of flu-like symptoms (e.g., fever, sore throat, skin rash, headache, nausea, muscle or joint pain) that accompany primary HIV infection or occur shortly after infection. ARS is due to a cellular immune response that takes place before the immune system has had time to produce antibodies.

acyclovir (Zovirax)

an antiviral drug used to treat herpes simplex virus types 1 and 2 and varicella-zoster virus infections. When used in combination with AZT, acyclovir has been shown in some studies to prolong survival in persons with HIV disease.

ADC

see AIDS Dementia Complex.

adefovir dipivoxil (ADV, Preveon)

a nucleotide analogue. Studies show ADV can add extra anti-HIV effect to combination therapy.

adjunct

something joined or added to the original. Adjunct therapy or treatment is a treatment that is given in addition to the main or primary treatment.

adjuvant

a substance added to a drug that increases its effect.

adjuvant therapy

a type of therapy that improves the outcome of a primary therapy, e.g., radiation and chemotherapy are adjuvant therapies in relation to cancer surgery.

adrenal gland

an organ located above each kidney that produces various hormones. The medulla (inner part) of the adrenal gland secretes adrenaline (epinephrine); the cortex (outer part) secretes steroids such as cortisol and certain androgens. The adrenal cortex is stimulated to produce hormones by the pituitary hormone ACTH; reduced secretion (adrenal insufficiency) can lead to fatigue, anorexia, and weight loss.

Adriamycin

brand name; see doxorubicin.

ADV

see adefovir dipivoxil

adverse reaction (adverse event, side effect)

a toxic reaction or side effect, e.g., due to treatment with a drug. Adverse reactions may range from mild effects such as rash, headache, nausea, or drowsiness, to more severe effects such as peripheral neuropathy, bone marrow suppression, seizures, and liver or kidney failure.

aerosolized pentamidine (AP, Nebupent)

a drug inhaled as a fine mist for prophylaxis against *Pneumocystis carinii* pneumonia (PCP).

AG-1549

Capravirine - NNRTI that may retain activity against resistant HIV strains, boosting with other drugs will probably be necessary.

agammaglobulinemia

absence of antibodies in the blood.

Agenerase

brand name; see amprenavir.



aggressive treatment

a treatment regimen that employs as many useful therapies as possible, even those that are experimental or involve adverse side effects.

agonist

an agent that binds to a receptor on a cell's surface and promotes a specific cellular activity. Agonists often exert their effect by mimicking the activity of the body's natural neurotransmitters and other regulatory chemicals or of other drugs. Also refers to a drug that promotes the activity of another drug. Contrast with antagonist.

agranulocyte

a type of white blood cell (e.g., macrophage, lymphocyte) that does not contain granules of toxic chemicals.

AIDS

see acquired immune deficiency syndrome.

AIDS Clinical Trials Group (ACTG)

NIH Division of AIDS therapeutic research network

AIDS dementia complex (ADC)

mental impairment with an organic cause that is due to HIV infection. Symptoms may include cognitive impairment (e.g., difficulty concentrating, memory loss), disorientation, mood and personality changes, speech and vision difficulties, lack of coordination, incontinence, and paralysis. AIDS-related dementia typically affects people in the later stages of HIV disease. Early stages are referred to as HIV-associated minor cognitive/motor disorder. Treatment usually involves an anti-HIV drug – such as AZT -- that is able to cross the blood-brain barrier.

AIDS drug assistance program (ADAP)

a state program that provides drugs for HIV/AIDS and related opportunistic infections to individuals who otherwise could not afford them.

AIDS Longitudinal Linked Randomized Trials (ALLRT)

a long-term follow-up of patients who have been enrolled in randomized trials.

AIDS service organization (ASO)

an organization that provides care, education, and other services to people with HIV/AIDS.

AIDS-defining illness

a condition (e.g., *Pneumocystis carinii* pneumonia, toxoplasmosis, Kaposi's sarcoma) that is included in the CDC definition of AIDS.

AIDS Malignancy Consortium

an NCI-supported clinical trials group

alanine transaminase (ALT, SGPT)

see transaminase.

albumin

a protein found in bodily tissues and fluids; the principal protein in blood plasma. A reduced level of albumin in the serum of persons with AIDS-related wasting syndrome is a sign of progressive wasting and suggests a high risk of death.

alkaline phosphatase (ALK PHOS)

an enzyme. Doctors sometimes look for alkaline phosphatase to determine the condition of a patient's liver. Low counts are best. A high count suggests hepatitis or a drug toxicity.

allele

a "version" of a specific gene. Each person has 1 allele at each genetic location.

allergy

hypersensitivity to some environmental agent, food, or drug. Most allergic reactions are minor (sneezing, runny nose), but some are life-threatening and require prompt medical attention. Allergic reactions are mediated by the release of histamine by mast cells. Allergic symptoms may include runny nose (rhinitis), sneezing, skin rash, asthma, or anaphylactic shock.

allopathy (adjective allopathic)

"Western medicine." A therapeutic system in which illness or disease is treated by producing a second condition that is antagonistic toward or incompatible with the first (e.g., an antibiotic drug is given to treat infection with a microorganism).

alpha interferon

see interferon

ALLRT

see AIDS Longitudinal Linked Randomized Trials

ALT (SGPT)

alanine transaminase. See transaminase.

alternative therapy

therapy that is not considered standard practice in most Western countries (e.g., traditional Chinese medicine, homeopathy).

alum

an odorless, colorless substance used as a topical antibiotic, as an adjuvant in some vaccines and sometimes as placebo.

AMC

See AIDS Malignancy Consortium

AMD-070

A CXCR4 chemokine receptor blocker. It is a reversible inhibitor of SDF-1 binding to CXCR4, one of the co-receptors used by HIV to gain entry into cells.

amenorrhea

absence of menstruation or decreased menstrual flow.

American Foundation for AIDS Research (AMFAR)

a non-profit organization that supports HIV/AIDS prevention and research efforts.

amino acid

one of 20+ organic acids that are the building blocks of proteins.

aminoglycoside

a family of antibiotic drugs similar to streptomycin.

aminotransferase

see transaminase.

amphotericin B

an antibiotic drug used to treat disseminated fungal infections (e.g., cryptococcal meningitis). The drug can have severe side effects including fever, chills, nausea, kidney toxicity and bone marrow suppression. Toxicity may be reduced by administering the drug in a liposomal (fat bubble) form.

amplicor HIV-1 monitor

see reverse transcriptase polymerase chain reaction test.

amplification assay

a type of test (e.g., PCR, branched-chain DNA) that detects small fragments of DNA or RNA and amplifies the fragments (target amplification) or chemical signals they produce (signal amplification): used to detect microorganisms in blood and tissues.

amprenavir (APV, Agenerase)

a protease inhibitor treatment for HIV disease.

Amsler grid

a diagram of squares used to assess vision. Defects in the central visual field (e.g., due to CMV retinitis) may be detected as breaks or unevenness in the lines of the grid.

amylase

an enzyme that converts starch to sugar. High levels in a lab test indicate pancreatitis is a possibility.

anabolic steroid

a synthetic hormone used to increase muscle size and strength.

anabolism

the cellular synthesis of organic molecules; the building of proteins and muscle mass in the body. See also metabolism.

anal intraepithelial neoplasia (AIN)

the abnormal growth of cells of the anus, which may be a precursor of anal cancer.

analgesic

a drug that reduces pain.

anamnestic response

a heightened immunologic response stimulated by a second or subsequent exposure to a specific antigen.

anaphylactic shock (anaphylaxis)

a life-threatening allergic reaction to a foreign antigen mediated by IgE antibodies.

Symptoms include swelling, shortness of breath, and a decrease in blood pressure due to capillary dilation.

androgen

a hormone (e.g., testosterone, androsterone) that has masculinizing effects, including stimulation of the male reproductive organs and development of secondary sex characteristics. Androgens are produced by the testes and/or the adrenal glands.

anecdotal

refers to evidence based on reports of specific individual cases rather than controlled, clinical studies.

anemia

a deficiency in oxygen-carrying capacity of blood. Determining lab tests include hemoglobin, red blood cell volume, and red blood cell number.

angiogenesis

the growth and proliferation of blood vessels.

angiostatic

an agent that inhibits the growth of new blood vessels.

anogenital

refers to area that includes the genitals, perineum and anus.

anorexia

loss of appetite, especially as a result of disease.

anoscopy

examination of the anal canal and lower rectum using a short speculum.

antagonist

a drug that counteracts or neutralizes another drug.

antiarrhythmic

a drug that helps to normalize the rhythm of the heartbeat.

antibiotic

an agent that inhibits the growth of or destroys microorganisms; the term typically refers to an agent that is active against bacteria.

antibody (ab, immunoglobulin, Ig)

an immunoglobulin protein secreted by activated plasma cells, which evolve from B-cells. Antibodies are present throughout the blood and tissues; they are produced in response to stimulation by foreign antigens as part of the body's defense against disease. Specific antibodies bind to and act upon specific antigens; the antigen/antibody reaction forms the basis of humoral (TH2) immunity. Neutralizing antibodies destroy or inactivate infectious agents, while enhancing antibodies promote infection. There are 5 classes of immunoglobulins: IgA, IgD, IgE, IgG and IgM. See also immunoglobulin A-M; protein in the blood that are generated in reaction to foreign proteins. antibodies selectively neutralize the foreign proteins, producing immunity to certain microorganisms or their toxins. Tests to determine if you are HIV positive look for HIV antibodies -- evidence that your body is attempting to fight the virus.

antibody positive

having antibodies (e.g., against HIV) in the blood, indicating previous exposure to an organism. Typically the terms seropositive and HIV positive are used to mean antibody positive. Contrast with antigen positive.

antibody-dependent cell-mediated cytotoxicity

an immune response in which antibodies bind to target cells and identify them for attack by natural killer cells and macrophages.

antibody-mediated immunity

see humoral immunity.

anticoagulant

a substance that suppresses blood clotting.

anticonvulsant

an agent that prevents or lessens convulsions or seizures; may be used as an adjuvant analgesic.

antidepressant

an agent that elevates the mood and prevents or alleviates psychological depression. Antidepressant drugs are sometimes used as adjuvant analgesic to relieve neuropathic pain. Heterocyclic and tricyclic classifications refer to antidepressants with specific chemical structures. Other classes of antidepressants include MAO inhibitors and serotonin reuptake inhibitors (e.g., Prozac).

antiemetic

an agent that relieves nausea and vomiting.

antifungal

a substance that kills fungus.

antigen

a substance that, when introduced into the body, stimulates production of an antibody; any agent or substance that stimulates an immune response. Antigens are often microorganisms such as bacteria or viruses, or the substances they produce.

**antigen positive**  
having proteins from a microorganism (e.g., HIV RNA) in the blood or tissues, as determined by tests such as the PCR assay. Contrast with antibody positive.

**antigen-presenting cell (APC)**  
a cell (e.g., macrophage) that processes antigen proteins and displays the short peptide fragments on its surface in conjunction with major histocompatibility (MHC) proteins, enabling recognition by T-cells.

**antihistamine**  
an agent that counteracts the effects of histamine; antihistamines are used to treat allergic reactions and to block stomach acid production.

**anti-inflammatory**  
adj. acting against inflammation

**antimicrobial**  
an agent that destroys or prevents the growth of microorganisms such as bacteria, fungi or parasites.

**antimycobacterial**  
an agent that is active against mycobacteria (e.g., *M. avium*, *M. tuberculosis*).

**antineoplastic**  
an agent that inhibits or prevents the increase of cancer cells and the growth of tumors.

**antioxidant**  
a substance that inhibits oxidation. In your blood stream, free radicals damage cells by oxidizing them. Beta-carotene, vitamin C, and vitamin E are considered antioxidants.

**antiretroviral**  
a substance that kills or suppresses a retrovirus, such as HIV. All of the anti-HIV drugs --AZT, protease inhibitors, etc. -- are considered antiretroviral drugs.

**antiviral**  
a substance that kills or suppresses a virus.

**aphthous ulcer (canker sore)**  
a small often painful shallow lesion on the mucous membranes lining the mouth, esophagus or rectum. Recurrent aphthous ulcers (RAU) reappear frequently and are refractory to treatment.

**apoptosis**  
programmed cell death. Apoptosis is the body's mechanism for eliminating undesirable or excessive immune system activity, e.g., immune cells that attack the body's own tissues. Abnormal apoptosis is often seen in HIV disease.

**Aptivus**  
protease inhibitor – brand name of tipranavir

**APV**  
see amprenavir

**arrhythmia**  
loss of normal rhythm, especially irregularities of the heartbeat.

**ascorbic acid (ascorbate)**  
see vitamin C.

aspartate transaminase (AST, SGOT)

see transaminase.

aspergillosis

A disease caused by a fungus. It can cause lesions of the skin, ear, orbit, nasal sinuses, lungs and sometimes the bones, meninges, heart, kidneys, or spleen. Symptoms include fever, chills, difficulty breathing, and coughing up blood. If the infection reaches the brain, it may cause dementia.

aspiration

withdrawal of fluid or tissue by suction, typically through a needle (e.g., to obtain a sample for analysis).

assay

qualitative (condition) or quantitative (amount) analysis of a substance; a test.

AST (SGOT)

aspartate transaminase. See transaminase.

astrocyte

a cell within the brain that provides support for neurons and manufactures the myelin insulation that surrounds neuronal axons.

asymptomatic

without symptoms (e.g., someone who is infected by HIV but has no symptoms).

ataxia

loss or lack of muscle coordination.

atazanivir (Reyataz)

once a day protease inhibitor, does not appear to raise triglycerides

atherosclerosis

"hardening of the arteries" in which cholesterol and other deposits build up on the inner walls of the artery, limiting the flow of blood.

atovaquone (Mepron, formerly 566c80)

an antimicrobial drug used as a treatment for PCP for individuals who cannot tolerate or fail on TMP-SMX and for pregnant women.

Atripla

efavirenz, emtricitabine and tenofovir, a multi-class combination drug

atrophy (adjective atrophic)

progressive degeneration, wasting or decrease in size, especially the loss of muscle tissue.

attenuate

to weaken or reduce the level of virulence. An attenuated virus has a diminished ability to cause disease, and may be used in vaccines. An attenuated virus is a virus that is still alive but incapable of causing harm.

AUC

area under the curve. Statistical technique used to measure performance of a test or to measure drug clearance in pharmacokinetic studies.

autoantibodies

an antibody thought to act against cells of the organism in which it is formed.

autoimmune

related to or caused by autoantibodies. A disease where the body's cells attacks themselves.

autoimmune response (autoimmunity)

a condition (e.g., rheumatoid arthritis, systemic lupus erythematosus) in which an individual's immune system fails to recognize its own biochemical markers as being "self" and attacks bodily tissues as if they were foreign matter.

autologous

derived from the same individual. An autologous transfusion or transplant is one in which a person's own blood or tissues are removed and reintroduced at a later time.

azithromycin (Zithromax)

a macrolide antibiotic used to treat *Mycobacterium avium* complex (MAC) disease, chlamydia and upper respiratory tract infections.

azole drug

a class of drugs used to fight fungal infections. There are 2 subclasses, the imidazoles (e.g., clotrimazole, ketoconazole) and the triazoles (e.g., fluconazole, itraconazole).

AZT (zidovudine [ZDV], azidothymidine, Retrovir)

a nucleoside (thymidine) analogue drug that suppresses the replication of HIV by terminating DNA synthesis. AZT is FDA-approved for the treatment of HIV infection; current practice favors the use of AZT in combination with other antiretroviral drugs. AZT crosses the blood-brain barrier and may be effective against AIDS dementia complex. Adverse side effects include nausea, myopathy and bone marrow suppression.

## **B**

bacillus Calmette-Guérin (BCG)

an attenuated strain of *Mycobacterium bovis*. BCG is used in some countries as a vaccine against tuberculosis. BCG vaccination renders the PPD test unusable as a test for the presence of *M. tuberculosis*. BCG adenitis is an illness caused by BCG that is present in some infants with HIV and is characterized by inflammation of the lymph nodes.

bacillary angiomatosis (cat scratch disease)

a vascular proliferative disease caused by *Bartonella henselae* or *Bartonella quintana* that may result in swollen purplish lesions similar to those of Kaposi's sarcoma. BA is associated with contact with domestic cats.

back-mutation

the reversion of a mutant, attenuated strain of a microorganism back to its natural, more virulent state.

bacteremia

presence of bacteria in the blood.

bacteria (singular bacterium)

plural of bacterium. Tiny, one-cell organisms of the class Schizomycetes. There is a vast assortment of bacteria, including many parasites. Bacteria are classified by their shape (e.g., rod, spirochete), staining properties (Gram positive or Gram negative), and habitat (aerobic, anaerobic). Many types of bacteria are pathogenic in humans.

bacterial vaginosis (BV)

a condition caused by the overgrowth of anaerobic bacteria (e.g., *Gardnerella vaginalis*), resulting in vaginal irritation and discharge.

**Bactrim**

brand name; see trimethoprim-sulfamethoxazole (TMP-SMX).

**balanitis**

inflammation of the glans (head) of the penis.

**barbiturate**

a class of drugs (e.g., phenobarbital) that have sedative properties and depress respiratory rate, blood pressure and nervous system activity.

**basal cell**

a skin cell located in one of the innermost layers of the skin.

**basal ganglion (plural ganglia)**

a cluster of nerve tissue, primarily composed of neuron cell bodies, deep within the brain.

**basal metabolic rate**

the body's resting level of energy expenditure. Individuals with a chronic infection often have an elevated basal metabolic rate.

**baseline**

a line used as a base for measurement. In HIV disease, a baseline is the result of several lab tests (e.g., CD4 cell count, HIV viral load) used to monitor the effectiveness of drugs.

**base-pairing**

the process by which a nucleic acid base matches up with its complementary counterpart during replication of genetic material. Adenine (A) pairs with thymine (T) or uracil (U); cytosine (C) pairs with guanine (G).

**basophil**

a type of white blood cell (granulocyte) that releases chemicals in allergic reactions; basophils that leave the bloodstream become mast cells in the tissues.

**B-cell (B-lymphocyte)**

an immune system white blood cell that carries out the humoral (TH2) immune response. B-cells are produced in the bone marrow and mature into plasma cells that produce antibodies. B-cells are influenced by various cytokines and interactions with T-cells and other immune system components. Contrast with T-cell.

**BCG**

a vaccine for TB named after the French scientists who developed it, Calmette and Guérin. BCG is rarely used in the United States, but it is often given to infants and small children in other countries where TB is common.

**BCH-13520**

N RTI in “preclinical development”

**$\beta$  interferon**

see interferon

**$\beta$ -2 microglobulin ( $\beta$ 2M)**

a cell surface protein that is released into the bloodstream when cells die. Elevated blood levels of  $\beta$ 2M are associated with immune activation and HIV replication. Levels below 3 mg/L are considered normal; levels above 5 mg/L indicate a high risk of HIV disease progression.



## BHAP

Bis-heteroaryl piperazine, a class of non-nucleoside reverse transcriptase inhibitor antiviral drugs (e.g., delavirdine).

## BIA

see bioelectric impedance analysis

## Biaxin

brand name; see clarithromycin.

## BIKTARVY

bictegravir + emtricitabine + tenofovir alafenamide

## bilirubin

a reddish-yellow compound that occurs naturally in bile, blood, and urine.. Too much bilirubin indicates there may be a liver problem.

## bioavailability

the degree a drug or nutrient is available to the body. Bioavailability is influenced by how much the substance is absorbed and circulated.

## bioelectrical impedance analysis (BIA)

a method of measuring lean body mass (muscle) and estimating cell mass. BIA measures electrical resistance and capacitive reactance, and uses these values to calculate phase angle.

## biological response modifier (BRM)

an immunomodulator; an agent (e.g., cytokine, thymic hormone) that enhances or restores immune function.

## biopsy

the study of tissue taken from a living body or organism, especially in the search for disease.

## blastogenesis

the production and maturation of new lymphocytes in response to challenge by an infectious agent (e.g., bacterium, virus).

## blastomycosis

an infectious disease caused by a fungus, usually in the lungs. It can spread to the skin, bone, or other tissues.

## blinding

a method of conducting clinical trials so that some or all of the participants do not know whether subjects are taking active drug or placebo. Blinding is done to reduce bias in drug trials. (See also double-blind.)

## blood chemistry panel

a set of tests (e.g., SMA 12, SMA 14, SMA 20) that evaluates the level of chemical components (e.g., glucose, albumin, enzymes, electrolytes) in the blood.

## blood volume

the amount of blood circulating throughout the body in the vascular system. Normal adult blood volume is about 5 liters. Blood volume must be maintained to ensure the proper functioning of the heart, kidneys, and other organs.

## blood-brain barrier

a membrane separating brain tissue from circulating blood. In HIV treatment, it refers to the difficulty of getting drugs from the blood stream to penetrate the central nervous

system. HIV is active in brain tissue. The drug AZT (zidovudine, Retrovir) crosses the blood-brain barrier better than any other anti-HIV drug currently approved in the U.S.

**B-lymphocytes**  
see B-cell.

**body mass index (BMI)**  
a measure of mass that is calculated as weight divided by height squared.

**bone marrow transfer (BMT)**  
a graft of bone marrow from one individual to another to reconstitute the recipient's damaged immune system.

**bowenoid papulosis**  
a dysplastic disorder involving tissue changes in the anogenital region, including reddish raised or flat lesions. Bowenoid papulosis is associated with human papillomavirus, especially type 16; if left untreated it may progress to squamous cell carcinoma.

**brain stem**  
the lower part of the brain where the brain connects to the spinal cord. The brain stem is responsible for many motor and sensory functions, especially automatic functions such as maintenance of posture.

**branched-chain DNA assay (bDNA, quantiplex HIV RNA)**  
a test that measures the amount of virus (viral load) in plasma or tissue using a chemical signal, visible as light, that is produced by viral RNA.

**breakthrough**  
refers to a condition that has developed despite measures to prevent it (e.g., PCP that occurs while taking a prophylactic drug).

**broad-spectrum antibiotic**  
an antibiotic drug that is active against a range of different bacteria.

**bronchial lavage (broncho-alveolar lavage)**  
a procedure in which the bronchial tubes are rinsed; the resulting fluid can then be analyzed (e.g., for disease-causing organisms).

**bronchitis**  
acute or chronic inflammation of the branched part of the trachea, the tubes going into the lungs. In some cases, this is considered an AIDS-defining condition in the U.S.

**bronchodilation**  
opening or expanding the bronchial tubes. Bronchodilating drugs can reduce coughing, wheezing, and shortness of breath, and may help prevent coughing if given prior to therapy for PCP with aerosolized pentamidine.

**bronchoscopy**  
procedure for examining the respiratory tract using a thin, flexible tube through the mouth and into the lungs.

**bronchus (plural bronchi; adjective bronchial)**  
the airway tubes that lead from the trachea or windpipe to the alveolar sacs in the lungs. Bronchi are the larger tubes; bronchioles are the smallest tubule branches.

**Burkitt's lymphoma**  
a cancer of the lymph system that is associated with the Epstein-Barr virus.

## C

canarypox

a poxvirus that typically infects canaries and is used in human vaccine research.

Candida

a genus of yeast-like fungi. Some species of Candida are part of the normal flora of the mouth, intestines, and vagina. Several species (*C. albicans*, *C. tropicalis*, *C. krusei*) may cause infection in humans, especially immunocompromised persons.

cannabis

*Cannabis sativa*, a plant that contains the psychoactive ingredient delta-9 tetrahydrocannabinol (THC). Cannabis ingestion typically produces feelings of euphoria and/or drowsiness. Cannabis is used medically to reduce nausea due to chemotherapy and restore appetite in persons with wasting syndrome. (marijuana)

Canolide A

NNRTI derived from a plant found in the Malaysian rain forest. Canolide B is a related compound that also has anti-HIV activity.

capillaries

tiny blood vessels that form the most distal part of the circulatory system. Arteries branch into ever smaller vessels, finally ending in the capillaries, which connect with the smallest branches of the veins. Capillaries deliver oxygen and nutrients to and remove waste products from the body's cells.

cardiomyopathy

a degeneration of the heart muscle, thought to be caused by HIV or by some drugs.

cardiovascular

refers to the circulatory system (the heart and blood vessels).

CD4

a protein embedded in the surface of some T-cells and certain other cells (e.g., macrophages, Langerhans cells). HIV invades cells by attaching to their CD4 receptor.

CD4 count

The number of helper T-lymphocytes in a person's blood, usually expressed as the number of cells per cubic millimeter. When this value drops below 200, a patient has AIDS. Also called T-cell count.

CD4/CD8 ratio

the ratio of CD4 cells to CD8 cells. In healthy persons the CD4/CD8 ratio is about 2.

CD8 (T-8)

protein embedded in the surface of killer and suppressor T-lymphocytes. Blood tests that look for suppressor T-lymphocytes are actually looking for this protein.

cell antiviral factor (CAF)

a factor produced by CD8 cells that is thought to block viral infection during the HIV latency period and in long-term non-progressors. Its identity is not known; possibilities include IL-16 and the chemokines RANTES, MIP-1- $\alpha$ , and MIP-1- $\beta$ .

cell-mediated immunity

part of the immune system responsible for direct attack foreign material without using proteins (antibodies), consists mainly of T-lymphocytes, killer cells, and macrophages.

cellulitis

an inflammation of subcutaneous connective tissue.

central nervous system (CNS)

A network in the body consisting of the brain, spinal cord, and nerves.

cerebrospinal fluid (CSF)

a clear, nutrient-rich fluid that circulates around and through the brain and around the spinal cord.

cerebrum

the upper frontal part of the brain responsible for thought and for higher motor functions and sensory processing. The term cerebral is often used to refer to the brain in general.

cervical cancer

malignant growth in the narrow lower or outer end of the uterus. In some cases, this is considered an AIDS-defining condition in the United States.

cervical dysplasia

abnormal tissue growth in the narrow lower or outer end of the uterus. This can lead to cervical cancer

cervical intraepithelial neoplasia (CIN)

abnormal growth of cells of the uterine cervix, suggesting an early stage of cervical cancer. Human papillomavirus (HPV) and HIV infection are associated with an increased risk of CIN. There are 3 grades of severity: CIN I, CIN II, and CIN III. A newer classification system divides these 3 classes into 2 categories: low-grade and high-grade squamous intraepithelial lesion (SIL). See also cervical dysplasia, squamous intraepithelial lesion.

cervicitis

inflammation of the uterine cervix.

cervix

the cylindrical, lower part of the uterus leading into the vagina. (adjective cervical)

chemokine

a chemical produced by cells that stimulates the activity of other cells. Certain chemokines are associated with autoimmune disorders, and some (e.g., MIP-1- $\alpha$ , MIP-1- $\beta$ , RANTES) have been shown to affect the activity of HIV.

Chest x-ray

a picture of the inside of your chest. A chest x-ray is made by exposing a film to x-rays that pass through the chest. A doctor can look at this film to see whether TB bacteria have damaged the lungs.

chickenpox

an acute contagious disease caused by the varicella-zoster virus (VZV) and characterized by low-grade fever and a rash of itchy fluid-filled vesicles. Chickenpox typically occurs in children; VZV may reactivate later in life to cause shingles, a painful blistering rash.

chlamydia

an infection, usually sexually transmitted, with the bacteria *Chlamydia trachomatis*. Chlamydia is the most common sexually transmitted disease in the U.S. It may be asymptomatic or include symptoms such as genital inflammation and discharge, pelvic pain, and fever. Untreated, it may lead to pelvic inflammatory disease (PID) and infertility. Chlamydia may also cause eye disease (trachoma) and pneumonia.

Cholestasis

A condition caused by blockages in the liver or surrounding areas that results in difficulty removing bile from the body. When too much bile accumulates in the bloodstream, jaundice can result.

cholesterol

a substance in animal tissue that is an essential component of cell membranes and nerve fiber insulation. Cholesterol is important for the metabolism and transport of fatty acids and in the production of hormones and vitamin D. Cholesterol is manufactured by the liver, and is also present in certain foods (e.g., eggs, shellfish). There are 2 types of cholesterol in the blood, high-density (HDL) and low-density (LDL) lipoproteins. Very low cholesterol levels may indicate malnutrition.

CHOP

a chemotherapeutic regimen for cancer treatment that combines cyclophosphamide, hydroxydaunomycin (doxorubicin, or Adriamycin), vincristine (Oncovin), and prednisone.

chromosome

a structure of compact intertwined molecules of DNA found in the nucleus of cells. Chromosomes contain the cell's genetic information. Humans normally have 46 chromosomes.

Chronic hepatitis

Hepatitis that does not go away and can lead to other serious illnesses, such as liver cancer.

chronic inflammation

an inflammation that tends to persist for several weeks, months, or years and has a vague and indefinite termination; occurs when the host's tissues respond in a manner (or to a degree) that is not sufficient to overcome completely the continuing effects of the injuring agent; characterized histopathologically by infiltrates of lymphocytes, plasma cells, and histiocytes; fibrosis; and granuloma formation.

CI

see confidence level.

cidofovir (Vistide)

a nucleoside analogue drug used to treat refractory cytomegalovirus (CMV) infection and acyclovir-resistant herpes simplex virus.

Cimduo

lamivudine + tenofovir disoproxil - NRTI

cimetidine (Tagamet)

a drug used to treat peptic (stomach) ulcers by blocking the secretion of stomach acid, and is under study for the treatment of HIV disease.

ciprofloxacin (Cipro)

an oral antibiotic used to treat common bacterial infections and used, in combination with other drugs, to treat MAC disease in people with AIDS. Side effects may include gastrointestinal distress, seizures and rash.

cirrhosis

a condition in which the liver becomes scarred, fibrous, and filled with fat, thus reducing its ability to function. Causes include infection (e.g., hepatitis) and excessive alcohol consumption.

CCR5 (CCR5, CC-CCR5)

a protein found on certain blood cells that serves as a receptor site for chemokines. CKR5 acts as a co-receptor which HIV uses to infect cells. People who lack a functional copy of the gene that makes CKR5 are believed to be non-susceptible to HIV infection.

clade

see subtype.

clarithromycin (Biaxin)

a macrolide antibiotic used to treat bacterial infections. Clarithromycin is used as treatment and prophylaxis for MAC. Side effects include nausea, taste changes, and abdominal pain.

clindamycin (Cleocin)

an antibiotic used as treatment and prophylaxis for toxoplasmosis and treatment of PCP in combination with other drugs.

clofazimine

a drug used to treat leprosy and MAC disease.

clone

a group of genetically identical cells or organisms derived from a single common ancestor. Also refers to the process of creating identical cells or organisms.

Monoclonal refers to the products (e.g., antibodies) of a single clone.

clotrimazole (Mycelex)

an antifungal drug approved as a treatment for candidiasis.

clotting factor

one of several proteins involved in the normal clotting of blood.

CMV

abbreviation, see cytomegalovirus.

coccidioidomycosis

a fungal disease characterized by fever and localized pulmonary (lung) symptoms; lesions in the upper respiratory tract and lungs, and may sometimes disseminate to visceral organs, bones, skin, and other tissues. Symptoms include cough, fatigue, fever, and weight loss. Also called San Joaquin fever. This is considered an AIDS-defining condition in the United States.

cognitive impairment

problems with memory and thinking. Can be caused by HIV. Sometimes used to describe a less severe form of dementia.

cohort

a group of individuals in a study who share a demographic, clinical, or other statistical characteristic (e.g., age, study site).

colitis

inflammation of the mucous membrane of the colon, which is part of the intestines.

colon

the large intestine, extending from the cecum (where it meets the small intestine) to the rectum.

colonoscopy

examination of the large intestine using a narrow, flexible lighted tube.

colony-stimulating factor (CSF)

a cytokine responsible for regulating the production of white blood cells. Types include granulocyte colony-stimulating factor (G-CSF) and granulocyte macrophage colony-stimulating factor (GM-CSF), which are used to relieve neutropenia.

colposcopy (biomicroscopy)

examination of a tissue surface (particularly the uterine cervix) with a low-powered, lighted microscope (colposcope) to identify abnormal cell growth and, if necessary, remove a tissue sample for biopsy.

combination therapy

using 2, 3, or more drugs at the same time. Studies have shown that taking multiple anti-HIV drugs is more potent than taking a single drug.

Combivir

brand name for a single pill containing ZDV and 3TC (lamivudine)

community advisory board (CAB)

a group of community members (e.g., people with HIV/AIDS, care providers, advocates) who provide recommendations regarding clinical research.

community constituency group (CCG)

a group of individuals representing diverse communities affected by HIV/AIDS that advises the ACTG on issues related to clinical research.

community-based organization (CBO)

a local organization within a community that provides various services to people with HIV/AIDS.

compartment

a separate structural portion (e.g., of the body or of a cell). The term is also used in pharmacology to denote an area of the body where a drug is metabolized, but which may not have a discrete physical boundary.

compassionate use

a classification of an experimental drug (IND) that is made available (usually free) to seriously ill patients before the drug is approved for general use. Few drugs get this classification.

complementary therapy

an additional treatment or therapy that adds benefit to an existing treatment regimen.

COMPLERA

rilpivirine + tenofovir disoproxil+ emtricitabine

complete blood count (CBC)

a screening of the cellular components of the blood, including red blood cell count (including hematocrit and hemoglobin), counts of various types of white blood cells such as granulocytes and T-cells, and platelet count.

computed tomography scan (CT scan)

a method of visualizing soft tissues of the body using X-rays. Also known as computed axial tomography or CAT scan.

concomitant

accompanied by or occurring at the same time. Concomitant therapies are those that are used together.

concurrent

occurring at (or, for drugs, taken at) the same time.

condylomata acuminata

genital and/or anal warts caused by infection with a strain of the human papillomavirus (HPV). Warts may appear as tiny white spots or as larger tumors or masses. Condylomata acuminata is typically sexually transmitted and may be particularly aggressive in people with HIV disease (e.g., increased number and size of warts, more frequent recurrence). Warts may be treated with chemicals, surgery or cryotherapy (freezing).

cone biopsy (conization)

removal of a cone-shaped wedge from the bottom of the uterine cervix to remove lesions and to provide a tissue sample for biopsy. See also loop electrosurgical excision procedure.

confidence level (confidence interval)

a statistical measure of the likelihood that an experimental result is "real" and not the result of chance alone. Confidence improves as larger numbers of participants are included in a trial.

congenital

refers to a disease or condition that is present from the time of birth.

contact

a person who has spent time with a person with infectious TB.

contraindication

any circumstance or condition that makes a method of treatment inadvisable in a particular case.

control arm

a comparison group in a scientific experiment (e.g., a clinical drug trial) that is used to verify experimental results. A control group is not subject to the study drug so that those receiving the study drug and those not receiving it may be compared. Contrast with treatment arm.

controlled trial

a clinical trial in which the group receiving an experimental therapy is compared to a control group that is not given the drug being studied. In a placebo-controlled trial the control group is given an inactive substance (placebo); in an active control trial the control group is given the best existing proven therapy. Contrast with uncontrolled trial. See also placebo-controlled trial.

convergent therapy

a regimen consisting of several drugs aimed at the same structural or functional target (e.g., a combination of three reverse transcriptase inhibitors).

cord blood

blood taken from the remains of the umbilical cord after birth. Cord blood is rich in stem cells.

core

the internal portion of the HIV viral particle. The core proteins, encoded by the gag gene, include the glycoproteins p24 and p17.

co-receptor

a second receptor that enables an organism to infect a cell. In addition to the CD4 receptor on cell surfaces, HIV requires the co-receptor fusin to infect T-cells and the co-receptor CKR5 to infect macrophages. .



cortex (adjective cortical)

the outer part of an organ (e.g., cerebral cortex, adrenal cortex).

corticosteroid

one of a group of steroid hormones (e.g., prednisone, corticosterone, cortisone, aldosterone) produced by the cortex of the adrenal gland or manufactured synthetically. Corticosteroids are used in the treatment of a variety of conditions; they have anti-inflammatory and immunosuppressive properties.

**COVID-19**

Coronaviruses are a family of viruses that can cause illnesses such as the common cold, severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). In 2019, a new coronavirus was identified as the cause of a disease outbreak that originated in China.

The virus is now known as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease it causes is called coronavirus disease 2019 (COVID-19).

Coviracil (emtricitabine)

a potent antiviral nucleoside analogue under study for HIV.

CPCRA

abbreviation, Community Programs for Clinical Research on AIDS. A network of primary care physicians and nurses who work with NIAID staff to design and conduct community-based clinical trials in patients with HIV disease and AIDS.

creatinine

a protein, a normal metabolic waste product found in muscles and blood. The amount of creatinine in the blood or urine tells doctors how well your kidneys are working.

creatinine kinase (CK)

an enzyme essential for muscle contraction. Blood levels of CK are typically elevated in muscle diseases (myopathies), and CK levels can be used to monitor toxicity to the muscles.

Crixivan

brand name; see indinavir.

cross-immunity

a state in which immunity to one organism serves to protect an individual against a different but related organism (e.g., immunity against cowpox provides immunity against smallpox).

crossover

a trial design in which the therapy given to different arms is switched during the course of the trial (e.g., the arm receiving drug is switched to placebo, and vice-versa).

cross-reactivity

a process by which an antibody responds to an antigen other than that which originally stimulated its production.

cross-resistance

the development of resistance to one agent (e.g., a drug) which also confers resistance to another agent (e.g., a similar drug of the same class).

cross-tolerance

a situation in which tolerance to one drug carries over to another related drug, so that the similar drug has reduced effects.

cryptococcosis

an infection caused by a yeast-like fungus, typically *Cryptococcus neoformans*, found in soil and bird feces. A common manifestation is cryptococcal meningitis (CM), an inflammation of the membranes surrounding the brain and spinal cord; cryptococcosis may also become disseminated. Symptoms may include nausea, fever, headache, dizziness, stiff neck, vision and speech difficulties, changes in mental status, increased intracranial pressure and seizures. Untreated CM can lead to coma and death.

Cryptococcosis may also affect the lungs and may become disseminated, resulting in a red skin rash. Treatments include oral fluconazole and amphotericin B.

cryptosporidiosis

an infection whose main symptom is prolonged diarrhea which leads to weight loss.

All treatments for this illness are still experimental.

CSF

see cerebrospinal fluid, colony-stimulating factor.

CT scan

see computed tomography scan.

CTL

cytotoxic T lymphocyte. A cell that can kill foreign cells that were marked for destruction by other immune system cells (the immune system's hit squad).

culture

a test to see whether there are TB bacteria in your phlegm or other body fluids. This test can take 2 to 4 weeks in most laboratories.

cutaneous

pertaining to the skin.

cyanosis

a dark purplish coloration of the skin and mucous membranes due to deficient oxygen in the blood.

cyclooxygenase

an enzyme involved in oxygen metabolism. Cyclooxygenase is part of the pathway that mediates bodily response to infection and injury (e.g., inflammation and pain) via substances such as histamine and prostaglandins.

cyclophosphamide

anti-cancer drug (IV or oral) under investigation for treatment of HIV.

cyclospora

an intestinal parasite that can cause severe diarrhea in people with AIDS. A recent outbreak was associated with contaminated North American strawberries.

cyclosporin A

a drug that suppresses the immune system. The drug is commonly used in organ transplant recipients to prevent tissue or organ rejection. Also cyclosporine.

cystitis

an inflammation of the urinary bladder.

cyto-

prefix, cell.

cytochrome p450 system

a process that metabolizes drugs and other foreign substances in the liver, by means of the CP450 enzymes.

cytokine

protein produced by some white blood cells (macrophages, monocytes, lymphocytes) used as messengers. Cytokines produced in the lymph system are also called lymphokines.

cytology

the study of the structure, function and pathology of cells.

cytomegalovirus (CMV, human herpesvirus 5)

a herpesvirus. CMV infection often occurs in healthy individuals without causing symptoms. In immunocompromised individuals (usually at CD4 counts below 50 cells/mm<sup>3</sup>), CMV may cause serious illness including retinitis (inflammation of the retina), pneumonia, colitis (inflammation of the large bowel), and encephalitis (inflammation of the brain); in pregnant woman may lead to congenital abnormalities in the newborn. CMV may be treated with ganciclovir, foscarnet, or cidofovir.

cytosine (C)

one of the pyrimidine nucleic acid bases that make up nucleotides, the building blocks of DNA and RNA.. The antiviral drug ddI is a nucleoside analogue associated with cytosine.

cytotoxic T-lymphocyte (CTL, T-killer cell)

a type of white blood cell that bears the CD8 surface marker and targets and kills cells infected with viruses, bacteria, parasites, and other microorganisms. The action of CTL is coordinated by CD4 cells via the production of cytokines.

Cytovene

brand name; see ganciclovir.

## **D**

d4T (stavudine, Zerit)

an antiviral nucleoside analog drug approved for the treatment of HIV disease. D4T inhibits the activity of the reverse transcriptase enzyme needed for HIV replication. Side effects include nausea, peripheral neuropathy and liver toxicity.

DAPD

see diaminopurine dioxolane.

dapsone

an antibiotic drug used in the treatment and prophylaxis of PCP. Side effects may include nausea, dizziness, skin rash, photosensitivity, and anemia.

Darunavir

Protease inhibitor

Data Safety and Monitoring Board (DSMB)

a group of experts that evaluates clinical trials for safety and ethics, examines interim data as a trial progresses, and determines whether it should be stopped or allowed to continue.

ddC (zalcitabine, dideoxycytidine, Hivid)

a nucleoside analogue drug that inhibits HIV replication by interfering with the reverse transcriptase enzyme. ddC is FDA-approved for the treatment of HIV; current practice favors use in combinations. Adverse side effects may include nausea, peripheral neuropathy, oral ulcers, and pancreatitis.

ddI (didanosine, dideoxyinosine, Videx)

a nucleoside analogue drug that inhibits HIV replication. ddI is FDA-approved for treatment of HIV; current practice favors use in combinations. Adverse side effects may include diarrhea, pancreatitis, and peripheral neuropathy. Also in an enteric coated formulation (Videx EC)

deferred therapy

therapy given later in the course of disease, often after symptoms have appeared. In a clinical trial, one arm may be given deferred treatment and compared to an arm that received treatment from the outset.

degenerative

relating to a progressive deterioration of a tissue or organ leading to structural or functional impairment.

dehydration

loss or lack of water in the body. Dehydration may result from prolonged vomiting or diarrhea, and may interfere with or disrupt many bodily processes.

dehydroepiandrosterone (DHEA)

a weak androgenic steroid produced by the adrenal cortex. DHEA levels are often decreased in people with HIV disease.

delavirdine (DLV, Rescriptor)

a non-nucleoside reverse transcriptase inhibitor drug FDA approved for treatment of HIV.

delayed-type hypersensitivity (DTH, type IV sensitivity)

a cell-mediated immune response that peaks 24-72 hours after restimulation with an antigen to which the body has previously been exposed. In an antigen skin test, a local DTH reaction characterized by redness and hardness and swelling may be seen.

DELSTRIGO

doravirine + lamivudine + tenofovir disoproxil

dementia

deterioration of intellectual faculties, often accompanied by emotional disturbance. HIV is active in the brain (central nervous system) and can cause dementia, even in those with high CD4 counts and low viral loads. Treatment usually involves an anti-HIV drug such as AZT that is able to cross the blood-brain barrier. See also AIDS dementia complex (ADC)

demyelination

destruction or loss of the myelin (a fatty substance) sheath that surrounds and insulates the axons of nerve cells and is necessary for the proper conduction of neural impulses.

dendritic cell

a type of immune system cell with many branches. Dendritic cells are found in the skin and mucosal membranes. They are typically the first to arrive at sites of injury or infection. Dendritic cells carry the CD4 surface marker, and may be among the first cells to be infected by HIV.

deoxyribonucleic acid (DNA)

a molecule found in the nucleus of cells as a twisted double-stranded chain that encodes genetic information. The particular sequence of 4 chemical building blocks (nucleotides) -- adenine, cytosine, guanine and thymine -- that make up a DNA chain determines the unique genetic code of an individual. See also ribonucleic acid.

Department of Health and Human Services (DHHS)

the U.S. federal government division that includes the Public Health Service.

Depo-Provera

brand name. A form of progesterone injected intramuscularly for contraception.

dermal

relating to the skin.

dermatitis

inflammation of the skin.

DESCOVY

tenofovir alafenamide + emtricitabine - NRTI

desensitization

the reduction of sensitivity or allergic reaction to an antigen or a drug, typically achieved by administering a small amount and gradually increasing the dose.

dexamethasone

a steroid with anti-inflammatory properties.

DHEA

see dehydroepiandrosterone.

DHPG

see ganciclovir.

diabetes

a disease characterized by excessive urination. Diabetes mellitus is caused by insufficient insulin production or lack of responsiveness to insulin, resulting in hyperglycemia (high blood glucose levels). There are 2 primary types of diabetes mellitus, type I (insulin-dependent or juvenile-onset), which may be caused by an autoimmune response, and type II (non-insulin-dependent or adult-onset). Diabetes insipidus is typically due to hormonal dysregulation.

dialysis

a procedure for cleansing the blood using membranes to filter out waste elements.

Kidney dialysis is used to substitute for the function of damaged or absent kidneys.

diaminopurine dioxolane (DAPD, amdoxovir)

an investigational potent antiviral purine nucleoside analogue under study for treatment of HIV.

diaphragm

a flexible sheet. The diaphragm in the chest is a sheet of muscle that controls breathing. Also refers to a flexible latex disk placed over the uterine cervix as a contraceptive device to form a barrier to sperm.

diarrhea

frequent, loose bowel movements. Diarrhea may be caused by a variety of factors including bacteria (e.g., *Mycobacterium avium*, *Salmonella*), viruses (e.g., CMV), parasites (e.g., *Cryptosporidium parvum*, *Giardia*), and drug use. Persistent diarrhea is common in persons with HIV disease and may lead to wasting due to inadequate nutrient absorption.

didanosine

see ddI.

dideoxycytidine

see ddC.

dideoxyinosine

see ddI.

Diflucan

brand name; see fluconazole.

directly observed therapy (DOT)

a method of medication administration in which a health care provider or other observer watches the patient take each drug dose. DOT is most commonly used for tuberculosis treatment.

disseminate

to spread. A disseminated infection is one that is distributed throughout the body, possibly causing symptoms at multiple sites.

distal

farthest from the center or from a central point of reference.

distal symmetrical polyneuropathy (DSPN)

a type of peripheral neuropathy in people with HIV characterized by pain, burning, or tingling sensations, weakness and/or numbness, especially in the hands and feet.

diuretic

an agent that increases the amount of urine excreted.

DNA

see deoxyribonucleic acid.

dose escalation

the gradual increase of drug dosages to determine the amount that delivers the best balance of high efficacy and few side effects. Dose-escalation trials are clinical studies that monitor the effects of increasing dosages of a drug. Researchers are looking for the largest quantity of the substance that can be tolerated without an adverse reaction.

dose-ranging trial

a clinical trial involving groups of volunteers given different quantities of a substance (or the same quantity but at different intervals). Results are compared to find which quantities and intervals give the best results and produce the fewest adverse reactions.

dose-response relationship

a phenomenon by which increased doses of a drug lead to increased effects, such that the response to a drug is directly related to the dose administered.

double-blind trial

a clinical trial involving volunteers who take either an experimental drug or a control substance. In a double-blind trial, a lab prepares the experimental and control substances and labels them so that neither the researchers nor patients know who will be getting the experimental drug. Only after the trial is finished do the researchers and patients learn which patients were taking the experimental drug. In HIV-related trials, the placebo is commonly replaced with some approved anti-HIV treatment. (also see clinical trial, and open label trial.)

downregulation

reduction of the rate at which a process occurs, a substance is released, etc.

doxorubicin (Adriamycin)

an anti-cancer drug used to treat leukemia, lymphoma, Kaposi' sarcoma and other malignancies. Side effects include mouth sores and bone marrow suppression.

DOX-SL (Doxil)

a formulation of doxorubicin encapsulated in liposomes (fat bubbles).

DPC-083

Has a modified Efavirenz structure. It has shown potency for patients with resistance to nevirapine and efavirenz as well as for naïve patients. Reported a 1-log viral load drop in subjects having resistance to the other NNRTIs in pilot studies.

dronabinol (Marinol)

a synthetic version of THC, the active agent in marijuana. Dronabinol is used to reduce nausea and vomiting caused by chemotherapy and as an appetite stimulant in people with wasting syndrome. Side effects may include drowsiness, confusion, and coordination difficulties.

droplet nuclei

airborne particles that transmit infection (e.g., tuberculosis).

drug interaction

a change in the way one drug acts when it is taken with some other drug or substance.

DSMB

see Data and Safety Monitoring Board.

duodenum (adjective duodenal)

the first part of the small intestine where it meets the stomach.

dys- (prefix)

abnormal; often used to mean difficult or painful.

dysmenorrhea

difficult or painful menstruation (e.g., cramps).

dysplasia

abnormal tissue or cell growth

dyspnea

difficult, labored breathing; shortness of breath.

dystrophy

progressive tissue changes. Several dystrophic diseases (e.g., muscular dystrophy) are characterized by muscle wasting and dysfunction.

## **E**

eczema

an acute or chronic inflammatory condition of the skin.

edema

swelling caused by an abnormal accumulation of fluid in body tissues.

Edurant

Rilpivirine - NNRTI

efavirenz (EFV, Sustiva)

a non-nucleoside reverse transcriptase inhibitor FDA approved to treat HIV.

efficacy

effectiveness; the ability to achieve a desired effect.

electrocardiography (EKG)

a method of recording the electrical activity of the heart.

electroencephalography (EEG)

a method of recording brain activity using an electroencephalograph, a device that records electrical current.

electrolyte

an electrically charged element or compound (e.g., sodium, potassium) found in body fluids, tissues, and cells. An imbalance of electrolytes can result from prolonged vomiting or diarrhea, and may lead to the disruption of many bodily processes.

ELISA

a test to see if the patient is HIV positive. See Enzyme-Linked Immunosorbent Assay.

Emtricitabine

combination of FTC and Coviracil

Emtriva

Brand name of emtricitabine -NRTI

encephalitis

inflammation of the brain.

encephalopathy

a disease of the brain. This infection is considered an AIDS-defining condition in the United States.

endemic

the continuous presence of a disease in a geographic location, community, or population.

endo- (prefix)

internal; inside or originating from within the body or an organ.

endocarditis

inflammation of the inner membranes of the heart.

endocrine gland/endocrine system

a ductless gland that regulates body functions via hormones secreted into the bloodstream. The endocrine system includes the hypothalamus, pituitary gland, thyroid, adrenal glands, and gonads (ovaries and testes). Contrast with exocrine gland.

endometriosis

the presence of endometrial tissue outside the uterus, often in the form of cysts. The tissue reacts to hormones. Symptoms (primarily pain) occur in monthly cycles.

endorphin

a group of endogenous (produced by the body) hormones (e.g., beta endorphin, met-enkephalin) that are chemically similar to opiate drugs. Endorphins are involved in coping with acute stress and modulating the perception of pain; they may also have a role in mobilizing the immune system.

endoscopy (adjective endoscopic)

a method of examining the interior of a body cavity or hollow organ (e.g., esophagus, stomach) using an endoscope, a narrow, flexible fiber optic instrument that conducts light.

endothelium (adjective endothelial)



a layer of cells that lines blood and lymph vessels, the heart and various body cavities.  
endotoxin

see lipopolysaccharide.

endpoint

a direct marker of disease progression, e.g., disease symptoms or death. The effectiveness of drug therapies is often determined by observing the clinical endpoints that develop over time in patients undergoing experimental treatment. Contrast with surrogate marker.

enhancing antibody

an antibody that enhances or promotes -- rather than inhibits -- disease progression. Contrast with neutralizing antibody.

enteral

within or by way of the intestines or the gastrointestinal tract.

enteric

relating to the intestines (e.g., an enteric parasite).

enteritis

inflammation of the intestines, especially the small intestine.

env

the gene of HIV that encodes the proteins of the viral envelope; also refers to the proteins produced by the gene.

envelope

the outer covering of a virus. The HIV envelope contains spikes and is composed of 2 protein subunits -- gp120 and gp41 -- encoded by the env gene. The glycoprotein gp120 attaches itself to the CD4 surface protein, allowing HIV to infect certain cells.

enzyme

any of numerous proteins produced by organisms that work as a biochemical catalyst (speed a chemical reaction).

enzyme-linked immunosorbent assay (ELISA)

a laboratory test used to detect the presence of antibodies in the serum. ELISA is used for first-line screening for HIV antibodies; a positive result indicates that antibodies have been detected. The test is sensitive but not specific, and a positive ELISA is typically confirmed using a Western blot assay.

eosinophilic folliculitis

a rash of itchy, red, pus-filled bumps on the face, arms, chest and back. The cause is unknown, but has been associated with Demodex mites and Pityrosporum yeast; the presence of eosinophils in the hair follicles indicates that the condition may involve an allergic reaction.

epidemiology

the study of the frequency, distribution, and behavior of a disease within a population.

epidermis

the outer layers of the skin.

epidural

relating to or administered via the dura mater, the outer membrane of the brain and spinal cord.

epithelium

a thin layer of cells that covers the internal and external surfaces of the body, including body cavities, ducts and vessels.

epitope

a unique shape or a marker on the surface of an antigen that triggers an antibody response.

Epivir

brand name; see lamivudine (3TC). - NRTI

Epstein-Barr virus (EBV, human herpesvirus-4)

EBV infection is common and usually asymptomatic in children, and may cause infectious mononucleosis ("kissing disease") in young adults. EBV lies dormant in the lymph nodes. It is associated with oral hairy leukoplakia, lymphoid interstitial pneumonitis, and some types of cancer in people with suppressed immune systems.

Epzicom

Abacavir and lamivudine - NRTI

eradication

the complete elimination of an organism (e.g., HIV) from the body, including the blood and reservoir tissue sites.

erythema (adjective erythematous)

red, especially an inflammatory redness of the skin.

erythrocyte

a mature red blood cell that contains hemoglobin. Erythrocytes transport oxygen and carbon dioxide between the lungs and the tissues of the body.

erythrocyte sedimentation rate (ESR, sed rate)

a blood test that measures the speed at which red blood cells settle in a test tube. The test is used to detect inflammation.

erythromycin

a common antibiotic used to treat bacterial infections of the skin, respiratory tract, and other organs.

Escherichia coli

a typically harmless bacteria that is found in the human digestive tract and is present in fecal material. E. coli 0157: H7 is a pathogenic strain transmitted commonly by undercooked meats, raw milk, and person-to-person contact; may cause bloody diarrhea and can lead to hemolytic uremic syndrome, a rare but occasionally fatal kidney disorder.

esophageal candidiasis

a fungal infection of the esophagus that may cause painful swallowing leading to weight loss. Esophageal candidiasis is an AIDS-defining opportunistic infection.

esophagitis

inflammation of the esophagus. In some cases, this is considered an AIDS-defining condition in the United States.

esophagus

a muscular tube -- about 9 inches long -- that passes from the mouth to the stomach; the portion of the digestive canal between the mouth and the stomach.

estradiol

a potent natural form of estrogen produced by the ovaries, placenta, and testes.

estrogen

a female sex hormone; a natural or synthetic substance (e.g., estradiol, Premarin) that stimulates the development of female secondary sex characteristics and regulates the reproductive cycle in women. Estrogens are known to affect the immune system.

ethambutol (Myambutol)

an oral drug used in combination with other agents to treat tuberculosis and MAC disease. Side effects may include nausea, headache, visual disturbances, and joint pain.

EVOTAZ

atazanavir + cobicistat - PI

exanthem (roseola)

a rash occurring as a symptom of an acute viral disease. Exanthem subitum or roseola infantum is a common viral disease of infants and children caused by infection with human herpesvirus type 6 and characterized by sudden onset of rash accompanied by fever.

exocrine gland

a gland with ducts (e.g., sebaceous glands) that deposits secretions directly to a site of action rather than into the bloodstream. Contrast with endocrine gland.

expanded access

a program that makes experimental drugs available on a wide basis to patients who don't qualify for a clinical trial. In most cases, a drug with an expanded access program is already in the final stages of the approval process. This program was started in 1987 by the U.S. FDA.

experimental drug

a substance that is currently undergoing clinical trials.

extensively drug-resistant TB (XDR TB)

XDR TB is a rare type of TB disease that is resistant to nearly all medicines used to treat TB.

extrapulmonary TB

TB disease in any part of the body other than the lungs (for example, the kidney, spine, brain, or lymph nodes)

## **E**

factor VIII

a protein in the blood that promotes clotting. Some hemophiliacs lack factor VIII and use a replacement derived from multiple blood/plasma donors; many hemophiliacs were infected with HIV prior to widespread antibody testing of donated blood.

false-negative

a negative test result for a person who does in fact have the disease or condition being tested for. See also false-positive.

false-positive

a positive test result (e.g., from an HIV antibody test) for a person who does not in fact have the disease or condition being tested for. See also false-negative.

famciclovir (Famvir)

an antiherpes drug FDA approved for the treatment of varicella-zoster virus infection.

fibroblast

a cell that produces the collagen fibers that make up connective tissue.

first-line treatment  
the preferred standard therapy for a particular condition.

Flagyl  
brand name; see metronidazole.

floater  
a moving spot that appears in the field of vision. Floaters may be an early sign of an eye disorder such as CMV retinitis.

flora  
the plant and/or bacteria species that inhabit a particular environment, e.g., intestinal flora.

fluconazole (Diflucan)  
an antifungal drug used to treat fungal infections including cryptococcal meningitis and esophageal candidiasis. Side effects may include nausea, rash, abdominal pain, and headache.

flucytosine (5-FC, Ancobon)  
an antifungal drug used with amphotericin B to treat cryptococcal meningitis.

fluorothiacytidine (FTC)  
an investigational nucleoside reverse transcriptase inhibitor to treat HIB. May be effective against hepatitis C.

folate  
a vitamin necessary for red blood cell production and proper neurological function. Levels may be reduced in individuals with severe or persistent infection or those taking certain drugs.

folic acid  
a B-complex vitamin important for red blood cell production. Folate is a salt or ester of folic acid. Deficiency can cause loss of taste and anemia. Folinic acid is an active form of folic acid.

follicle  
a small sac or pore. Hair follicles are depressions in the skin from which hair shafts grow; ovarian follicles are the site of ovum (egg) production.

follicle-stimulating hormone (FSH)  
a hormone produced by the pituitary gland that stimulates the ovarian follicles to mature and produce ova (eggs) in women and induces sperm production in men.

follicular dendritic cell  
a specialized cell in lymph nodes that traps and concentrates foreign antigens for recognition by lymphocytes.

folliculitis  
an inflammation of the hair follicles which may lead to deeper abscesses. Folliculitis is often caused by bacteria (e.g., *Staphylococcus aureus*). Types include eosinophilic folliculitis and idiopathic folliculitis.

Food and Drug Administration (FDA)  
the federal agency responsible for regulating the development, use, and safety of drugs, medical devices, food, cosmetics, and related products.

Fortovase  
brand name for saquinavir soft gel capsule protease inhibitor. See saquinavir.

Fosamprenavir (GW-433908)

pro-drug for Amprenavir, similar effects but with a long half-life, with once a day dosing

foscarnet (Foscavir)

an antiviral drug used to treat cytomegalovirus (CMV) disease and acyclovir-resistant herpes simplex virus and varicella-zoster virus infection. Adverse side effects include nausea, kidney toxicity, and skin ulcers.

FTC

see fluorothiacytidine.

fulminant

refers to a condition that is severe or aggressive.

fundoscopy

examination of the interior of the eye with an instrument (fundoscope) that allows the examiner to peer into the eyeball through the pupil. Fundus photography is used as a diagnostic tool.

fungemia

the presence of fungi in the blood.

fungus

a plant of the subkingdom Thallophyta. A fungus lacks chlorophyll and can be a single cell or a larger plant. Mushroom, mold, smut, yeast are all fungus. Fungi cause candidiasis (thrush), cryptococcal meningitis, toxoplasmosis.

fusin (CXCR4, LESTR)

a co-receptor on the surface of certain T-cells that, along with the CD4 molecule, allows HIV to penetrate and infect a cell.

fusion

a union or joining together into one entity.

Fuzeon (T-20)

A fusion inhibitor, binds to viralgpr41 and prevents particle from changing to a shape that allows entry into cell

## **G**

G6PD

glucose-6-phosphate dehydrogenase, a human red blood cell enzyme. G6PD deficiency may cause severe anemia. People with G6PD deficiency should not take certain antimicrobial medications (e.g., dapsone) due to the risk of developing anemia.

gag

the gene of HIV that encodes the core proteins of the virus; also refers to the proteins produced by the gene.

gamma globulin (IgG)

component of blood serum (plasma) containing antibodies.

gamma interferon

see interferon

**ganciclovir (DHPG, Cytovene)**

an antiviral drug used to treat cytomegalovirus (CMV) infection. Ganciclovir may be administered intravenously via an indwelling central catheter or via an intraocular implant. An oral form is used as maintenance therapy for CMV retinitis; it may also be effective for primary prophylaxis. Side effects include neutropenia.

**ganglion (plural ganglia)**

a cluster of nerve tissue primarily composed of neuron cell bodies.

**gastroenteritis**

inflammation of the mucous membrane of the stomach or intestine.

**gastrointestinal**

pertaining to the stomach and intestines.

**gastrointestinal (GI) tract**

the digestive system consisting of the mouth, stomach, small intestine, large intestine, and anus.

**G-CSF**

see granulocyte colony-stimulating factor.

**GEM 91**

an experimental anti-HIV compound. GEM 91 is a second-generation antisense (complementary) strand of nucleotides that can bind to HIV RNA and block viral replication.

**gene (adjective genetic)**

the unit of heredity. A gene contains hereditary information encoded in the form of DNA and is located at a specific position on a chromosome in a cell's nucleus. Genes determine many aspects of anatomy and physiology by controlling the production of proteins. Each individual has a unique sequence of genes, or genetic code.

**gene expression**

the production of a particular gene product or protein.

**gene product**

the protein encoded by a specific gene.

**gene therapy**

an approach to preventing and/or treating disease by replacing, removing, or introducing genes or otherwise manipulating genetic material. Examples include adding a gene to a cell to produce a specific missing protein, using antisense molecules to prevent viral replication, and altering CD4 cells to make them resistant to HIV infection. Genes may be introduced by direct injection or using a harmless viral vector to deliver genes into cells.

**generic name**

a common name used to identify a drug, as opposed to a brand name used by a particular company (e.g., TMP-SMX is the generic name the drug sold as Bactrim or Septra).

**genetic engineering**

manipulation of an organism's genetic material to modify the proteins it produces.

**Genexpert TB Test**

a molecular TB test which detects the DNA in TB bacteria. It uses a sputum sample and can give a result in less than 2 hours. It can also detect the genetic mutations associated with resistance to the drug Rifampicin.<sup>2</sup>genital

refers to the reproductive or sexual organs.

genital herpes  
see herpes simplex virus.

genital ulcer disease  
one of several, usually sexually transmitted diseases (e.g., syphilis, chancroid) that are characterized by the development of ulcers on the skin or mucous membranes. The presence of ulcers may facilitate the transmission of HIV and other STD.

genome (adjective genomic)  
the unique genetic code or hereditary material of an organism, carried by a set of chromosomes in the nucleus of each cell. The human genome contains an estimated 50,000-100,000 genes; the genome of HIV contains 9 genes.

genotype  
the specific genetic makeup or "blueprint" of an individual. Contrast with phenotype.

germinal center  
a part of the lymph node in which lymphocyte proliferation and maturation takes place and where T-cells are "educated" to recognize antigens.

GENVOYA  
elvitegravir + cobicistat + tenofovir alafenamide + emtricitabine

giardiasis  
infection with a Giardia protozoan (e.g., Giardia lamblia), which is spread via contaminated food or water and by fecal-oral contact. Giardia infects the intestines and produces nausea, cramping, and diarrhea.

gingivitis  
gum disease; inflammation of the gingiva, which may be accompanied by pain and/or bleeding. Gingivostomatitis is a combined inflammation of the gingiva and other oral mucous membranes. See also periodontal disease.

glaucoma  
a disease of the eye marked by increased pressure within the eyeball. If left untreated, glaucoma can damage the optic nerve and cause loss of vision.

glial cells  
non-neuronal cells that perform support functions in the brain, providing structure and assisting metabolism. AIDS dementia complex is believed to involve infection of glial and other support cells.

gliosis  
a proliferation of glial cells in the brain; a condition frequently seen in people with HIV-related dementia.

globulin  
a blood protein. See also immunoglobulin.

glomerulonephritis  
an inflammatory disorder of the glomeruli of the kidney, often due to the buildup of immune complexes.

GLG223  
see trichosanthin.

glucocorticoid  
a steroid-like substance (e.g., cortisol) capable of influencing metabolism, regulating the immune system, and exerting an anti-inflammatory effect.

glucose (blood sugar)

a form of sugar that is the body's primary fuel; glucose broken down from food can be converted into energy or stored. Abnormally low or high levels of glucose in the blood often indicate metabolic disturbances (e.g., diabetes).

glutathione

an antioxidant containing the amino acid cysteine which is needed for cellular production of energy and proper immune function. Glutathione has been reported to suppress HIV in vitro and may reduce HIV-related apoptosis (cell death).

glycoprotein (gp)

a small unit made up of a sugar and a protein molecule, often part of a cell's membrane. Glycoproteins make up the envelope of HIV (e.g., gp120, gp160 [numbers denote molecular weight]).

GM-CSF

see granulocyte macrophage colony-stimulating factor.

gonad

an organ that produces gametes (ova and sperm), i.e., an ovary or a testis

gonadotropin

a hormone (e.g., follicle-stimulating hormone) that acts on the gonads to promote their growth and function.

gonococcal

related to infection with the *Neisseria gonorrhoeae* organism (e.g., gonococcal urethritis, gonococcal vaginitis).

gonorrhea

a sexually transmitted disease caused by the bacteria *Neisseria gonorrhoeae*. Gonorrhea may be asymptomatic or may include symptoms such as urethritis, discharge, pelvic pain, and inflammation of the tissues of the genitals, rectum, and/or throat. Untreated, gonorrhea may spread to the upper genital tract and lead to pelvic inflammatory disease (PID) in women and may spread, affecting other organs such as the heart and brain.

gp

see glycoprotein.

gp120

protein on the outer surface of HIV that binds to proteins (CD4) on helper T-lymphocyte cell. This is HIV's docking mechanism.

gp160

a glycoprotein in the outer envelope of HIV which enables the virus to enter human cells. The glycoprotein is produced by the viral env gene and cleaved into gp120 and gp41 fragments.

gp161

HIV's reusor protein, which is split into the gp41 and gp120 surface protein by enzymes during a late stage of the replication process.

gp41

protein on the outer surface of HIV that can pierce the surface of a helper T-lymphocyte cell. This is HIV's infection mechanism.

granulocyte



a type of white blood cell (basophil, eosinophil, neutrophil) that contains granules of toxic chemicals that are released to fight microorganisms.

granulocyte macrophage colony-stimulating factor (GM-CSF)  
a hormone that stimulates growth of granulocytes and macrophages. Synthetic GM-CSF (Leukine/Neupogen) is used to treat or prevent neutropenia caused by certain drugs. Side effects include fever, rash, and bone pain.

granulocytopenia  
a condition indicated by a low number of granulocytes, leading to a high risk of bacterial infection.

growth factor  
a factor responsible for regulating cell proliferation, development, migration, differentiation and/or activity.

growth hormone  
see human growth hormone.

guanosine triphosphate (GTP)  
an energy-rich molecule that is required for the synthesis of peptide bonds during translation.

guanine (g)  
one of the purine nucleic acid bases that make up nucleotides, the building blocks of DNA and RNA

Guillain-Barré syndrome  
an acute disease that produces fever and nerve inflammation resulting in bilateral weakness or paralysis, most commonly in the legs and feet.

gynecology  
the study and treatment of the genital and reproductive system of women.

gynecomastia  
greater than normal breast development in males; may be a side effect of drugs that mimic female hormones.

## **H**

### HAART

highly active antiretroviral therapy, a term previously used for aggressive anti-HIV treatment.

### Haemophilus influenzae

a rod-shaped bacteria that occurs in the human respiratory tract and causes acute infections (e.g., pneumonia, meningitis). The bacteria was once believed to be the cause of the flu, which is now known to be caused by a virus.

### hairy leukoplakia

a white lesion on the cheeks, gums or tongue, possibly related to Epstein-Barr virus infection. This is considered an AIDS-defining condition in the United States.

### half-life

the time required for half the amount of an agent (e.g., drug, virus, cell type) to be eliminated from the body.

### hby097

an experimental second-generation non-nucleoside reverse transcriptase inhibitor.

HCG  
see human chorionic gonadotropin.

helper cell (T4 cells, CD4 cells)  
A subset of T cells that carry the T4 marker and are essential for turning on antibody production, activating cytotoxic T cells, and initiating other immune responses. The number of T4 cells in a blood sample is used to measure the health of the immune system in people with HIV.

helper T cell  
see CD4 cell.

helper-suppressor ratio  
see CD4/CD8 ratio.

hematocrit (HCT)  
the percentage of red blood cells in a given amount of whole blood. The hematocrit reflects oxygen-carrying capacity; a drop in hematocrit may indicate bone marrow dysfunction. Red blood cells normally constitute about 38-54% of the whole blood in men and about 37-47% in women.

hemo-  
prefix, blood.

hemoglobin  
a protein in red blood cells that carry oxygen and contain iron.

hemophilia  
a disorder that prevents normal blood clotting. Hemophilia is hereditary.

hemorrhage  
loss of a large amount of blood from the arteries or veins. A hemorrhage may be internal or external.

HEPA (high-efficiency particulate air) filter  
a type of air filter that protects against airborne transmission of tuberculosis.

heparin  
a chemical found in many tissues, especially the liver, that prevents blood clotting. Heparin is released by basophils and mast cells in inflammatory and allergic responses. It is used therapeutically to prevent blood clotting.

hepatic  
adj, pertaining to the liver

hepatitis  
an inflammation of the liver that may be caused by several agents, including viruses and toxins. Hepatitis is characterized by jaundice, enlarged liver, fever, fatigue, and abnormal liver function tests. Types include hepatitis A (infectious hepatitis), hepatitis B (serum hepatitis), hepatitis C, hepatitis D (delta hepatitis), and hepatitis E. A new form, hepatitis G, has recently been characterized.

hepatitis A (HAV, infectious hepatitis)  
an inflammatory viral disease of the liver with a short incubation period. Hepatitis A virus (HAV) may be transmitted by eating contaminated food, by fecal-oral contact, and/or through household contact. Symptoms may be mild to severe and include fever, nausea and jaundice. An anti-HAV vaccine is available.

hepatitis B (HBV, serum hepatitis)

a viral liver disease that may be acute or chronic, and can be life-threatening. Symptoms include fever, headache, muscle and joint pain, malaise, nausea, and jaundice. Some individuals are chronic asymptomatic carriers; chronic hepatitis B may result in liver cirrhosis and/or cancer. HBV can be transmitted by sexual contact, shared needles, or contaminated blood products. Interferon-alpha is used as a treatment; a 3-dose anti-HBV vaccine is available.

hepatitis C (HCV, formerly non-A, non-B hepatitis)

a contagious viral disease that causes inflammation of the liver. A chronic carrier state occurs in some individuals and may result in life-threatening liver damage, cirrhosis, and/or liver cancer. HCV is spread via contaminated blood products or shared needles. There is no standard treatment or vaccine.

hepatitis D (formerly delta hepatitis)

a type of hepatitis that occurs only in people who are also infected with hepatitis B.

hepatitis E (formerly enteric or epidemic hepatitis)

a type of hepatitis caused by a virus that is common in parts of Africa and Southeast Asia. It is usually mild and self-limiting, except in pregnant women, who may have severe cases. Hepatitis E is shed in the feces and can be spread by the fecal/oral route.

hepatitis G (HGV; also called hepatitis GB virus C or HGBV-C)

a flavivirus and a distant relative of HCV.

hepatomegaly

liver enlargement.

hepatosplenomegaly

enlargement of the liver and spleen.

hepatotoxicity

adj, being toxic to the liver

herpes simplex encephalitis (HSE)

inflammation of the brain caused by infection with the herpes simplex virus.

herpes simplex virus (HSV-1, HSV-2)

a herpesvirus that causes blisters and recurring disease. Herpes simplex virus type 1 (HSV-1) usually produces lesions on the lips or in the mouth ("cold sores" or "fever blisters"). HSV-2 is usually sexually transmitted, and lesions generally occur in the genital and/or anal area. Blisters typically appear 2-12 days after infection and may be painful. In healthy persons, lesions usually resolve without treatment in 2-3 weeks; in immunocompromised persons, lesions may last longer, be more frequent and severe, and may become disseminated. Symptomatic disease outbreaks occur at unpredictable intervals. Between outbreaks HSV lies dormant in the nerves; reactivation may result from emotional stress, physical trauma, hormonal changes, or other illnesses.

Outbreaks may be preceded by a numb or tingling sensation and flu-like symptoms known as the prodrome. Both HSV-1 and HSV-2 are treated with acyclovir; ganciclovir or foscarnet are used to treat acyclovir-resistant HSV.

herpes zoster (shingles)

a condition characterized by painful blisters that typically appear in a dermatomal (linear) distribution on the skin following nerve pathways; blisters generally dry and scab leaving minor scarring. Shingles is caused by reactivation of a previous infection with the varicella-zoster virus (VZV) that initially causes chickenpox; VZV lies dormant in the nerves and reactivates when immune defenses are weakened. Shingles outbreaks may recur more frequently and VZV may become disseminated in people

with HIV disease. Disseminated herpes zoster resembles chicken pox, with a rash, fever, and possibly pneumonia; herpes zoster may also lead to ocular and neurological complications.

herpesvirus (herpetoviridae)

a group of viruses that includes herpes simplex virus type 1 (HSV-1 or HHV-1) and 2 (HSV-2 or HHV-2), varicella-zoster virus (VZV or HHV-3), Epstein-Barr virus (EBV or HHV-4), cytomegalovirus (CMV or HHV-5), human herpesvirus types 6 and 7 (HHV-6, HHV-7) and Kaposi's sarcoma-associated herpesvirus (KSHV or HHV-8).

HSVs may act as opportunistic pathogens and/or cofactors in HIV pathogenesis.

HERS

HIV Epidemiology Research Study.

heterogeneous

mixed; made up of diverse, dissimilar elements or parts.

heterozygote (adjective heterozygous)

an individual who possesses 2 different alleles, or gene variants, at a given site on a chromosome. Contrast with homozygote.

HHV-1, HHV-2

see herpes simplex virus.

HHV-3

see varicella-zoster virus.

HHV-4

see Epstein-Barr virus.

HHV-5

see cytomegalovirus.

HHV-6

see human herpesvirus 6.

HHV-7

see human herpesvirus 7.

HHV-8

see Kaposi's sarcoma-associated herpesvirus.

Hickman catheter

a flexible tube surgically inserted into a blood vessel for infusions of medicine and nutrition over a long period of time.

histamine

a white crystalline compound involved in immune responses (hormone or chemical transmitter). It regulates production of stomach acid and is the main cause of allergic reactions. [C<sub>5</sub>H<sub>9</sub>N<sub>3</sub>]

histoplasmosis

a fungal infection (*Histoplasma capsulatum*) that is usually confined to the Mississippi River Valley. It can cause inflammation in multiple organs: lungs, meninges, heart, etc.

HIV

abbreviation, see human immunodeficiency virus.

HIV associated minor cognitive/motor disorder

an early stage of AIDS dementia complex.

HIV negative

showing no evidence of infection with HIV (e.g., absence of antibodies against HIV) on a blood or tissue test. See seronegative.

HIV positive

showing evidence of infection with HIV (e.g., presence of antibodies against HIV) on a test of blood or tissue. See seropositive.

HIV-associated cognitive/motor complex

see AIDS dementia complex.

HIV-associated dementia

see AIDS dementia complex.

Hivid

brand name; zalcitabine, see ddC.

HIVIG

concentrated anti-HIV immunoglobulins used in passive immunotherapy. HIVIG is under study as a treatment for children with HIV disease and as a therapy to prevent vertical transmission. Side effects include headache, fever, and rash.

HLA

abbreviation, see human leukocyte antigen.

Hodgkin's disease

a progressive cancer of the lymphatic system characterized by the presence of Reed-Sternberg cells, enlarged lymph nodes and spleen, wasting, fever, and anemia. The disease is treated with chemotherapy and radiation. See also non-Hodgkin's lymphoma.

homeostasis

maintenance of equilibrium or a stable bodily state (e.g., temperature, fluid composition).

homology (adjective homologous)

similarity. Homologous DNA is similar at matched positions (e.g., SIV and HIV-2 are 70% homologous). Homologous blood or tissue transfers are those that are transferred or transplanted from one individual to another. Contrast with autologous.

homozygote

an individual who possesses 2 copies of the same allele, or gene variant, at a given site on a chromosome. Contrast with heterozygote. (adjective homozygous)

hormone

a substance created by one organ, transmitted to another organ by the blood, that causes some activity in the second organ due to a chemical reaction. For example, testosterone is a hormone found only in males.

hormone replacement therapy (HRT)

the administration of exogenous hormones (typically estrogen) to replace those that the body is not able to produce (e.g., due to menopause or hysterectomy). HRT is used to relieve symptoms hormonal deficiency (e.g., hot flashes, osteoporosis).

HPMPC

see cidofovir.

HPV

abbreviation, see human papillomavirus.

HSV

abbreviation, herpes simplex virus

HTLV  
abbreviation, human T-lymphotropic virus

HTLV-I/HTLV-II  
abbreviation, see human T-cell leukemia virus.

HTLV-III  
abbreviation, one of the original names given to the virus now known as HIV.

human growth hormone (HGH)  
a peptide hormone secreted by the anterior pituitary gland. HGH enhances growth by stimulating metabolism and protein synthesis, and also stimulates the immune system. Recombinant human growth hormone (Serostim) is a genetically engineered drug used for the treatment of HIV-related wasting syndrome. Side effects include muscle pain, edema and carpal tunnel syndrome. (HGH, somatotropin, Serostim)

human herpesvirus 1, 2  
see herpes simplex virus.

human herpesvirus 3  
see varicella-zoster virus.

human herpesvirus 4  
see Epstein-Barr virus.

human herpesvirus 5  
see cytomegalovirus.

human herpesvirus 6 (HHV-6)  
infects lymphocytes, including CD4 cells, generally occurs early in life and may cause fever, roseola (a red skin rash) in infants, and is associated with neuropathology, chronic fatigue syndrome, multiple sclerosis, and certain autoimmune diseases.

human herpesvirus 7 (HHV-7)  
herpesvirus that infects human T-cells, but is not known to cause disease.

human herpesvirus 8 (HHV-8)  
see Kaposi's sarcoma-associated herpesvirus.

human immunodeficiency virus (HIV)  
a slow-acting retrovirus of the lentivirus family, believed to be the sole or primary cause of AIDS. HIV is transmitted sexually, through blood, or from mother to child. There are 2 known types: HIV-1 and HIV-2: HIV-1-- the cause of HIV disease and AIDS and formerly called HTLV III and LAV; HIV-2--a retrovirus closely related to simian immunodeficiency virus (SIV) and less closely related to HIV-1. HIV-2 is found primarily in West Africa, and are similar to those of HIV-1 but are typically milder and take longer to develop. There are 5 known types of HIV-2 (A through E).

human leukocyte antigen (HLA)  
a genetic marker of "self" which prevents the immune system from attacking the body's own tissues. Various HLA patterns are associated with HIV

HVTN (HIV Vaccine Trials Network)  
an NIAID-sponsored network that conducts trials of experimental HIV vaccines at research centers formerly called AIDS Vaccine Evaluation Units

hyper-  
prefix, over, above, beyond, excessive.

hypersensitivity

an overreaction, especially as a reaction to a drug.  
hypo-  
prefix, below, under, less than normal.

## **I**

iatrogenic

an unfavorable response to medical or surgical treatment (e.g., peripheral neuropathy caused by an antiviral drug).

IBT

immune-based therapy. See immunotherapy

IC

abbreviation. See inhibitory concentration.

idiopathic CD4 t lymphocytopenia (ICL)

immunosuppression and low CD4 cell count with no detectable cause. ICL syndrome has been called “non-HIV AIDS.”)

idiopathic thrombocytopenic purpura (ITP)

"Idiopathic" means that the cause is unknown, "thrombocytopenic" means the blood doesn't have enough platelets, "purpura" means a person has excessive bruising. In people with ITP, all of the blood cells are normal except for the blood platelets. Tiny red dots on the skin, called petechiae may appear. When the platelet count is very low, the person with ITP may have nosebleeds that are hard to stop, or may have bleeding in the intestines. (This is considered an AIDS-defining condition in the United States.)

IDU

abbreviation, injection drug user, especially illegal drugs. (same as IDVU)

IDV

see indinavir.

IFN

see interferon.

IL-1

see interleukin-1.

IL-10

see interleukin –10.

IL-12

see interleukin –12.

IL-2

see interleukin –2.

IL-3

see interleukin –3.

IL-4

see interleukin –4.

IL-6

see interleukin –6.

IM

abbreviation, see intramuscular.

immune

exempt, not affected, not responsive.

immune activation

activation is the transition of leucocytes and other cell types involved in the immune system. On the other hand, deactivation is the transition in the reverse direction. This balance is tightly regulated, since a too small degree of activation causes susceptibility to infections, while, on the other hand, a too large degree of activation causes autoimmune diseases

Read more: <http://www.answers.com/topic/activation-6#ixzz2GpsbpoF1>

immune-based therapy (IBT)

see immunotherapy.

immune complex

a cluster formed when an antigen and an antibody (or multiple antigens and antibodies) bind together. Immune complexes may circulate in the blood or lodge in tissues, where they can lead to physiological damage.

immune-modulating therapy

see immunotherapy.

immune modulator

see immunomodulator.

immune response

the activity of the immune system (e.g., against a microorganism or cancerous cell).

immune restoration

rebuilding of a damaged or compromised immune system (immune reconstitution).

immune senescence

gradual deterioration in immune function that occurs with aging

immune surveillance

the immune system's recognition of and defense against foreign organisms and cancerous cells.

immune system

the body's defense system that protects against foreign invaders (e.g., microorganisms) and cancerous cells. Some immune defenses are nonspecific (e.g., phagocytosis). Defenses against specific antigens are of 2 types: cell-mediated (TH1) and humoral (antibody-based, or TH2). Organs of the immune system include the lymph nodes, spleen, thymus, tonsils and bone marrow.

immunity

natural or acquired resistance to a specific disease.

immunization

the process by which a person is protected against the adverse effects of infection by a disease-causing microorganism. Active immunization (vaccination) involves inoculating a person with an antigen and relying on his/her body to mount an immune response. Passive immunization involves giving a patient exogenous (manufactured or transferred from another individual) antibodies.

immuno-

prefix, immunity.

immunocompetent

capable of mounting an appropriate immune response.



immunocompromise

reduction in immune system function.

immunodeficiency

the inability of the immune system to work properly, resulting in susceptibility to disease. Immunodeficiency may be either congenital (present from birth) or acquired. HIV leads to immunodeficiency by attacking T-cells.

immunoendocrinology

a branch of medicine that combines the study of the immune system (immunology) and the study of the endocrine glands and their hormones (endocrinology).

immunogen

an antigenic agent that stimulates an immune response.

immunoglobulin

one of a group of blood serum proteins that can act as an antibody.

immunoglobulin a (IgA)

a type of antibody found in body fluids and the mucous membranes lining the openings of the body. IgA is the basis of mucosal immunity, attacking pathogens at the site of entry into the body.

immunoglobulin d (IgD)

a specialized immunoglobulin of unknown function found in small amounts in the blood.

immunoglobulin e (IgE)

a type of antibody associated with mast cells. IgE is responsible for immediate hypersensitivity (allergic) reactions and immune defense against parasites.

immunoglobulin g (IgG, gamma globulin)

the most common type of antibody in the plasma. IgG provides specific immunity against particular antigens, and is a major defense against bacteria, viruses, and toxins. IgG starts the complement cascade that results in the destruction of the membrane of pathogens. IgG extracted from donor plasma (gamma globulin) is used for passive immunization.

immunoglobulin m (IgM)

a type of antibody that (along with IgG) provides specific humoral immunity against bacteria and viruses.

immunology (adjective immunologic)

the study and/or treatment of disorders that involve the immune system (e.g., cancer, HIV disease, autoimmune diseases).

immunomodulator (immune)

an agent or process capable of modifying or influencing the function of the immune system. Immune modulators include cytokines (e.g., IL-2, gamma interferon) and broad-acting agents. See also immunotherapy.

immunostimulant (immunopotentiator)

an agent that stimulates or enhances the function of the immune system.

immunosuppression

reduced function of the immune system; a state in which the immune system defenses have been suppressed, damaged, or weakened.

immunotherapy (immune-based therapy)

a therapy that attempts to modify or enhance immune response, or reconstitute a damaged immune system. Examples of immune-based therapies for HIV disease include active immunization (vaccination), passive hyperimmune therapy, CD8 cell line expansion, and cytokine therapy. See also immunomodulator.

#### IMPAACT

formerly PACTG – NIH Division of AIDS therapeutic research network; Infant Maternal Pediatric Adolescent AIDS Clinical Trials

#### impairment

dysfunction, damage, or deterioration.

#### in vitro

in an artificial environment, especially test tube experiments involving a reaction of human tissue. [Latin - in glass]

#### in vivo

within a living organism, especially lab experiments. [Latin - in a living body]

#### incidence (incidence rate)

the number of new cases of a diseases or condition in a specific population over a given period of time. The incidence rate is determined by dividing the number of new cases by the total population.

#### inclusion/exclusion criteria

characteristics of an individual which qualify or disqualify him/her from taking part in a clinical trial (e.g., CD4 cell count, pregnancy, other drugs taken).

#### incubation period

the time between an initial exposure to an infectious agent and the development of symptoms of disease.

#### IND

see investigational new drug (US FDA designation)

#### indinavir (Crixivan, IDV)

a protease inhibitor drug approved for the treatment of late-stage HIV disease. Current practice favors the use of indinavir in combination therapy (e.g., with nucleoside analogue drugs) to avoid the development of drug-resistant virus.

#### induction

the initiation phase of a particular therapy.

#### induration

a swelling and hardening of soft tissue caused by infiltration of macrophages and CD4 cells. Injection of a substance (e.g., tuberculin PPD) and "reading" of the resulting induration is used to detect previous exposure to an organism, or to gauge the strength of the immune response.

#### infection

a condition in which the body is invaded by an infectious organism (e.g., bacterium, virus, fungus). An active infection is one that leads to disease symptoms; a latent infection remains dormant within the body.

#### infectious

capable of being transmitted from one individual to another, for example, through sexual contact.

#### inflammation

the body's response to tissue injury or infection, which typically includes increased vessel dilation and permeability, resulting in redness, swelling, heat, and pain.  
inflammatory bowel disease (IBD)

A disorder of the colon that causes stomach pain, constipation, and diarrhea.  
informed consent

a protection for people entering a drug trial. Each participant in a clinical trial in the U.S. must sign a consent form that explains the purpose of the trial, the results expected, the mechanics of the trial, potential risks, a list of other treatments that are available. There is also a statement telling the participant that (s)he can leave the trial at any time.

infusion

the introduction of a solution into a vein, especially medicine or nutritional supplements.

inguinal

relating to the groin.

inhibitor

a substance used to retard or stop an undesirable reaction.

inhibitory concentration (IC)

a measure of the efficacy of a drug. The IC<sub>50</sub> is the concentration of a drug that eliminates 50% of a population of microorganisms.

institutional review board (IRB)

a committee of physicians, medical experts, researchers, and community members, at an institution or hospital involved in biomedical research that oversees all human trials. In the U.S. all clinical trials are required by the FDA to be approved by the institution's IRB.

insulin

a peptide hormone produced by the Islets of Langerhans cells in the pancreas. Insulin enables the body to metabolize and use glucose. Lack of or insensitivity to insulin results in diabetes.

insulin-like growth factor (IGF)

a substance naturally produced by the body that has many of the same effects as growth hormone. There are 2 types, IGF-1 and IGF-2; a genetically engineered form of IGF-1 is under study as a therapy for AIDS-related wasting.

Intelence

NNRTI – Brand name of etravirine

integrase

a viral enzyme that enables the integration of viral genetic material into a host cell's DNA.

integrase inhibitor

an antiviral drug (e.g., zintavir) that blocks viral replication by interfering with the action of the integrase enzyme.

intent-to-treat

a method of analysis in clinical trials that groups each participant according to the arm to which s/he was initially assigned (e.g., experimental drug, standard therapy, placebo), regardless of whether s/he remains in that arm for the duration of the study.

interaction

a change in the way one drug acts when it is taken with some other drug or substance.  
Also called drug interaction.

intercurrent

occurring at the same time.

interferon

a protein in a cell produced to prevent replication of an virus in the cell.

interferon-alpha (Intron-A, Roferon-A)

a type of interferon produced in response to viral infection. Genetically engineered interferon-alpha is used to treat Kaposi's sarcoma, anogenital warts, and hepatitis B and C. It is under study as an anti-HIV therapy. Side effects include flu-like symptoms, anemia, and neutropenia.

interferon-beta

a type of interferon that typically has less severe side effects than interferon-alpha. Interferon-beta is used to treat multiple sclerosis and is under study as a treatment for human papillomavirus (HPV) infection.

interferon-gamma (immune interferon, Actimmune)

a type of interferon produced by CD8 and CD4 cells. Interferon-gamma is used to treat leprosy and is under study as a treatment for toxoplasmosis, PCP, and MAC.

interleukin (IL)

a hormone; a cytokine (chemical messenger) secreted by immune system cells that regulates a range of immune system functions. Types include IL-1, IL-2 (T-cell growth factor), IL-10 and IL-12.

interleukin 1 (IL-1)

a cytokine released by monocytes, macrophages and other immune cells that fight infection. IL-1 activates helper T-cells, mediates acute systemic immune symptoms (e.g., fever) and acts on the hypothalamus to decrease appetite.

interleukin 10 (IL-10)

a cytokine released by TH2 T-cells that stimulates the proliferation and activity of B-cells, modulates macrophage function and enhances humoral (TH2) immunity, while suppressing cell-mediated immune function.

interleukin 12 (IL-12)

a cytokine produced by lymphocytes (e.g., monocytes, macrophages) that activates natural killer cells and cytotoxic T-lymphocytes and induces the production of interferon-gamma. IL-12 is associated with the cell-mediated (TH1) immune response. Recombinant IL-12 is under study as a immunomodulatory treatment for HIV disease.

interleukin 2 (IL-2, T-cell growth factor, Aldesle)

a cytokine produced by activated CD4 cells that promotes the proliferation and activity of CD4 cells, CTL, and natural killer cells. Recombinant IL-2 (Aldesleukin, Proleukin) is used for cancer therapy and is under study as a immunomodulatory treatment for Kaposi's sarcoma and HIV disease. Side effects include flu-like symptoms (fever, chills), decreased blood pressure and anorexia.

interleukin 3 (IL-3)

an hematopoietic factor that promotes the growth and differentiation of several types of blood cells (red, white and platelets).

interleukin 4 (IL-4)

a cytokine released by the TH2 subset of CD4 cells that stimulates antibody production.

interleukin 6 (IL-6)  
a cytokine produced by macrophages that mediates acute systemic immune responses.

intolerance  
inability of the body to appropriately metabolize an agent or drug, often characterized by adverse side effects.

intra- (prefix)  
within, internal.

intracellular  
within a cell.

intracranial  
within the skull.

intracutaneous  
within the skin.

intraepithelial neoplasia  
abnormal cell growth that suggests possible malignancy. Common sites are the anus (anal intraepithelial neoplasia) and the cervix (cervical intraepithelial neoplasia).

intralesional  
within a lesion, especially an injection

intramuscular (IM)  
administered injection into a muscle.

intranasal  
administered through the nose.

intraocular  
administered into the eye. An intraocular implant is embedded in the eye and releases a drug slowly over time.

intrathecal  
injected into the fluid (theca) around the spinal cord.

intrauterine device (IUD)  
a contraceptive device, typically made of plastic and sometimes including copper, that is placed within the uterus to prevent pregnancy.

intravaginal  
introduced into the vagina.

intravenous (IV)  
injected directly into a vein.

intravenous immune globulin (IVIG)  
broad-spectrum concentrated antibodies administered intravenously to treat conditions in which the body does not produce enough of its own antibodies. Recombinant and pooled immunoglobulins from blood donors are used to prevent bacterial infections, especially in children with HIV disease.

intravitreal  
within the eye.

invasive cervical cancer

an aggressive type of cancer of the uterine cervix that has spread beyond the surface cell layers. Invasive cervical cancer is more common and spreads more rapidly in women with HIV disease, and is an AIDS-defining illness.

investigational new drug (IND)

an FDA classification applied to experimental drugs undergoing trials to assess safety and efficacy prior to marketing approval. IND status must be granted before a drug can enter Phase I testing. See also treatment IND, supplemental IND.

Invirase

brand name; see saquinavir.

IRB

see institutional review board.

IRIS - Immune Reconstitution Inflammatory Syndrome -

Immune reconstitution inflammatory syndrome (IRIS), also known as immune restoration disease, refers to a disease- or pathogen-specific inflammatory response in HIV-infected patients that may be triggered after:

- Initiation or re-initiation of ARV therapy
- Change to more active ARV therapy

Isentress

HIV integrase inhibitor – brand name of raltegravir

Islets of Langerhans (islet cells)

cells in the pancreas that produce insulin.

isolate

a specific individual microbe and its genetically identical progeny.

isoniazid (INH)

an antibiotic used in combination regimens to treat tuberculosis. Side effects include liver toxicity and peripheral neuropathy.

isosporiasis

isosporiasis is an intestinal disease caused by a parasite -- *Isosporiasis belli* -- which is found in the tropics and subtropics. Symptoms include diarrhea, cramps, and weight loss. It is easily confused with cryptosporidiosis. The US Centers For Disease Control and Prevention considers this an AIDS-defining condition.

itraconazole (Sporonox)

a triazole antifungal drug used to treat various fungal diseases (e.g., cryptococcosis, histoplasmosis). Side effects include nausea and headache.

## **J**

jaundice

yellow discoloration of the skin and whites of the eyes caused by the inability of the liver to break down the pigment bilirubin. Jaundice is often associated with liver damage or disease (e.g., hepatitis), with gallbladder disease, and with the excessive destruction of red blood cells.

JULUCA

dolutegravir + rilpivirine

## K

### Kaletra

brand name; combination table of lopinavir/ritonavir

### Kaposi's sarcoma (KS)

an abnormal or cancerous proliferation of cells and blood and/or lymph vessels causing tumors on the skin, mucous membranes, and/or internal organs. KS typically appears as pink or purple flat or raised lesions. Types include classic KS, African KS, and AIDS-related or transplant-related KS. KS is associated with a herpesvirus (KSHV, or HHV-8). It occurs more commonly among HIV-positive gay and bisexual men than among others with HIV disease, indicating that it may be sexually transmitted.

### Karnofsky score

a subjective score (0-100) given by a doctor to describe a patient's ability to perform everyday tasks (eating, dressing, etc.)

### keratitis

inflammation of the cornea of the eye.

### keratosis

a skin condition characterized by overgrowth and thickening of the outer skin layers; a skin lesion marked by flat or elevated growth. Keratosis may develop into squamous cell carcinoma. Types include actinic keratosis and seborrheic keratosis.

### ketoconazole (Nizoral)

an imidazole drug used to treat systemic fungal or yeast infections (e.g., candidiasis, histoplasmosis). Side effects include liver toxicity.

### ketotifen (Zaditen)

an antihistamine drug that lowers TNF-alpha levels and is under study as an immunomodulatory therapy for HIV disease.

### kidney (adjective renal)

one of 2 bean-shaped organs located in the lower back part of the abdominal cavity. The kidneys filter waste material from the blood and excretes it as urine.

### kidney stone (nephrolithiasis)

an accumulation of calcium in the kidney, which may lead to pain and blockage.

### killer T cells

an immune system cell (cytotoxic lymphocyte) that directly kills other infected cells in the body (e.g., cancer cells, cells infected by a virus). Also called natural killer cells. See cytotoxic T-lymphocyte.

## L

### lamivudine (Epivir, 3TC)

an FDA approved nucleoside analogue with activity against hepatitis B. Side effects include headache, nausea, low white blood cell count.

### lamivudine/zidovudine (Combivir)

a combination tablet.

Langerhans cell

a type of dendritic cell in the skin and mucous membranes that transports antigens to the lymph nodes.

laparoscopy

a procedure in which a small, lighted instrument is inserted through an abdominal incision for the purpose of diagnosis, biopsy, or surgery.

latency

being present but not evident. In HIV disease, the virus is present for years before any symptoms appear; the virus is active and damaging the immune system.

latent TB infection

a condition in which TB bacteria are alive, but inactive in the body. People with latent TB infection have no symptoms, don't feel sick, can't spread TB to others, and usually have a positive TB skin test or positive TB blood test reaction. But they may develop TB disease if they do not receive treatment for latent TB infection.

late-stage disease

advanced progression of a disease. Late-stage HIV disease occurs 5-10 or more years after initial HIV infection, and is characterized by low CD4 cell counts, high viral load levels, wasting syndrome, and possibly the presence of multiple opportunistic infection symptoms.

lavage

the washing out of an organ or cavity, for example, to obtain a sample for diagnosis.

lean body mass

muscle and organ tissue.

legionellosis (Legionnaire's disease)

an upper-respiratory tract infection caused by Legionella bacteria, which are widely distributed in nature and may be spread via contaminated water supplies. Infection is often acquired in a hospital.

lentivirus

a subfamily of retroviruses that includes HIV. Lentiviruses kill cells and are associated with chronic, slow-developing diseases.

leprosy (adjective lepromatous)

a disease caused by Mycobacterium leprae, characterized by skin lesions and necrosis. There are two forms of leprosy, lepromatous and tuberculoid.

leucovorin (leucovorin calcium)

a derivative of folic acid, a member of the vitamin B complex. Leucovorin protects cells from the cytotoxic effects of certain drugs (e.g., dapsone, trimetrexate) and is used to prevent drug-induced anemia.

leukocyte

white (actually colorless) blood cell.

leukocytosis

abnormally high number of white blood cells.

leukopenia

abnormally low number of white blood cells.

levofloxacin

a broad-spectrum quinolone antibiotic used to treat respiratory infections.

LEXIVA



Fosamprenavir - PI

liarozole  
experimental drug that stimulates the production of retinoic acid. Being studied for the treatment of Kaposi's sarcoma.

LIP  
see lymphocytic interstitial pneumonia.

lipid  
a fat.

lipogenesis  
production of lipids (fats).

lipopolysaccharide (LPS, endotoxin)  
a molecule composed of fat and sugar. LPS is produced by certain bacteria and makes up part of their cell wall. When the bacteria die, the toxin is released, leading to the release of cytokines resulting in symptoms of chills, fever, and possibly shock.

lipoprotein  
a compound composed of protein and fats.

liposomal daunorubicin (dox-sl, Doxil)  
a liposomal form of daunorubicin used to treat Kaposi's sarcoma.

liposome (lipid vesicle)  
a spherical fat particle suspended in a liquid. Liposomes are used to carry drugs or other substances to cells or tissues, allowing them to remain active longer in the body and have a less detrimental effect on the liver.

listeriosis  
a serious, sometimes fatal, bacterial disease [*Listeria* (*L. monocytogenes*)] that looks like severe encephalitis but with paralysis. This is considered an AIDS-defining condition in the United States.)

live-attenuated virus  
an altered live virus used in vaccines to provoke an immune response. Live-attenuated vaccines may induce longer-lasting protection than whole-killed virus, but involves some risk of mutation to the original, more virulent wild-type.

liver (adjective hepatic)  
a large organ in the upper abdominal cavity that cleanses toxins and dead cells from the blood and is important in metabolic transformation of various substances. The liver is responsible for excreting drugs and alcohol from the body. Many drugs can be toxic to the liver.

liver enzyme  
a protein produced by the liver (e.g., SGOT, SGPT) that catalyzes various physiological reactions. Abnormally high levels of liver enzymes in the blood may indicate liver damage or disease. See also transaminase.

liver function test (LFT)  
a blood test that measures levels of liver enzymes to indicate how well the liver is working and whether it might be inflamed or damaged.

log  
a measure based on the logarithmic scale that refers to quantities in factor of 10. A log change is an exponential or 10-fold increase or decrease (e.g., 10 to 100 is a 1-log

increase; 1,000,000 to 10,000 is a 2-log decrease. Changes in viral load are often expressed in logs.

long terminal repeat (LTR)  
a segment of the HIV gene that must be activated to "turn on" viral replication.

longitudinal  
refers to a study that follows participants over an extended period of time.

long-term nonprogressor (LTNP)  
a person who has been infected with HIV for several years (7-10 or more) but does not exhibit immune system decline or have opportunistic diseases. About 10% of persons with HIV disease seem to be LTNP and typically have a strong cytotoxic T-lymphocyte response, minimal lymph node damage, and a relatively low viral load. LTNP may have unusually strong immune responses, may be infected with a weakened strain of HIV, or may have protective genetic factors.

loop electrosurgical excision procedure (LEEP)  
use of a heated wire loop to remove a cone-shaped wedge from the bottom of the uterine cervix for biopsy, similar to a cone biopsy, but is generally faster and the cervix heals more rapidly.

loperamide (Imodium ad)  
an anti-diarrhea drug.

lopinavir (LPV, Kaletra)  
an FDA approved protease inhibitor.

lopinavir/ritonavir (LPV/r, Kaletra)  
coformulated lopinavir with low-dose ritonavir, which inhibits LPV's metabolism and enhances LPV's effectiveness. Side effects are diarrhea, fatigue, headache, nausea.

low-dose oral interferon-alpha (Kemron)  
a form of the cytokine interferon-alpha that is given in low doses under the tongue.

LTR inhibitor  
a substance that interferes with the long terminal repeat of the HIV gene, thus inhibiting viral replication.

lumbar puncture (spinal tap)  
the insertion of a needle into the subarachnoid space of the spinal column to remove cerebrospinal fluid for diagnosis, or to inject medications or anesthesia.

lymph  
a clear or yellowish fluid containing white blood cells and some red blood cells that travels through the lymphatic system. The lymph system helps remove bacteria and some proteins from tissues. It also transports fat to the intestines.

lymph node (lymph gland)  
small, bean-sized organs located throughout the body, with concentrations in the neck, groin, and armpits. Lymph nodes filter out antigens and are the site of antigen presentation and immune activation. The lymph nodes are a reservoir site for HIV.

lymphadenopathy  
inflammation (swelling) of lymph nodes caused by numerous conditions, including flu, mononucleosis, lymphoma, and primary HIV infection.

lymphadenopathy-associated virus (LAV)  
an early name for the virus now known as HIV.

lymphatic system (adjective lymphoid)

a network of capillary-like vessels, ducts, nodes, and organs that help maintain the fluid environment of the body and coordinate immune responses. Two major lymphatic vessels return fluid to the vascular system. The lymphoid organs include the lymph nodes, spleen, thymus, tonsils, and adenoids.

lymphoblastosis

the production of lymphocytes.

lymphocyte

a T-cell or B-cell, white blood cells responsible for immune defense.

lymphocytic interstitial pneumonia (LIP)

a rare type of pneumonia common in children with HIV-AIDS.

lymphocytopenia

reduced numbers of white blood cells (e.g., CD4 cells).

lymphokine

a chemical messenger (e.g., interferon, interleukin) produced by lymphocytes that directs and regulates immune responses by stimulating macrophages, killer cells, and other lymphocytes.

lymphokine-activated killer cell (LAK cell)

a type of lymphocyte (neither a T-cell nor a B-cell) that has cytotoxic activity against a broad range of cells and are not major histocompatibility complex restricted.

lymphoma

cancer of the lymphatic system

lymphopenia

a decreased number or proportion of lymphocytes in the blood.

lymphoproliferative

refers to the proliferation or replication of lymphocytes.

## **M**

MAC

see Mycobacterium avium complex.

macro-

prefix, large.

macrolide

one of a group of antibiotic drugs (e.g., clarithromycin, azithromycin) related to erythromycin.

macrophage

a large (phagocytic) cell in the immune (reticuloendothelial) system. This is the reconnaissance unit of the blood stream (circulating) looking for foreign matter, alerting (by producing neopterin) the entire immune system if there is a problem.

MACS

see Multicenter AIDS Cohort Study.

macula

the pigmented central area on the retina that is devoid of blood vessels. The macula is the most sensitive area of the retina and is responsible for retinal nourishment.

Macular degeneration refers to the atrophy of the macula, which may lead to vision loss.

maculopapular eruption  
a rash with both flat and raised lesions or sores.

magnesium (Mg)  
a mineral necessary for proper metabolism. Magnesium deficiency may worsen sensory neuropathy and affect immune function.

magnetic resonance imaging (MRI)  
a diagnostic technique that uses magnetic fields and radio waves (instead of x-rays). MRIs produce a three-dimensional computer model.

maintenance therapy (secondary prophylaxis)  
preventive therapy that follows successful initial treatment of an illness. Generally, maintenance therapy continues for the lifetime of the patient to prevent disease recurrence.

major histocompatibility complex (MHC)  
a group of genes that control the expression of cell surface protein markers (also known as human leukocyte antigen or HLA markers) that determine receptor shape and allow immune cells to recognize components of the body (i.e., to distinguish "self" from "non-self"). MHC molecules are necessary for antigen presentation and for recognition of antigens by immune system cells. Each individual has one of a variety of genetically-determined MHC/HLA patterns

mal-  
prefix, bad, abnormal.

malabsorption  
ineffective or substandard absorption of nutrients or drugs in the intestines.

malignancy  
a tumor, cancer, or an abnormal growth that tends to metastasize (spread)

malignant (noun malignancy)  
refers to a cancer, neoplasm or tumor that grows in an uncontrolled manner, invading nearby tissue and spreading (metastasizing) to other sites through the bloodstream. Contrast with benign.

malnutrition (malnourishment)  
lack of the minimum amount of fluids, proteins, carbohydrates, lipids, vitamins, minerals, and other nutrients essential for sound health and growth and may result from poor diet, lack of appetite, or abnormal absorption of nutrients from the GI tract.

maraviroc  
entry inhibitor – CCR5 co-receptor antagonist

marijuana  
see cannabis.

Marinol  
brand name of dronabinol. A medicine containing the active ingredient dronabinol. contains an active ingredient (delta-9-THC) also found in the marijuana plant.

marker  
a lab result or symptom observation used to measure a treatment's effectiveness or an individual's immune system status. Also refers to a unique identifier on a cell's surface. See also surrogate marker.

marrow

the soft tissue filling a cavity in bones, consisting of fat cells and maturing blood cells.

marrow suppression

a side-effect of some drugs that leads to a decrease in white blood cells, red blood cells, and platelets.

mast cell

a basophil (a type of granular white blood cell) that has left the bloodstream and entered a tissue. Mast cells release histamine and heparin, chemicals that mediate allergic reactions.

maximum tolerated dose

the largest dose of a drug a patient can take without unacceptable adverse side effects.

MDR-TB

see multidrug-resistant tuberculosis.

megadose

a far greater than normal dose, especially of vitamins.

megakaryocyte (thromboplast)

a large, multilobed cell in the bone marrow that gives rise to platelets.

megestrol acetate (Megace)

a synthetic progesterone used to stimulate appetite and promote weight gain in people with HIV-related wasting syndrome. Side effects may include menstrual changes in women, feminizing side effects in men, and swelling of the hands and feet.

melanoma

a cancer derived from melanin-producing cells.

membrane

a thin sheet or layer of pliable tissue serving as a semi-permeable covering.

memory cell

a cell that remains after the body mounts an immune response to an antigen and is capable of an immediate response to the reappearance of the same antigen. Memory cells include certain subsets of T-cells (CD4 and CD8) and some B-cells.

meningismus

stiffness of the neck resulting from infection and/or inflammation of the membranes covering the brain and spinal cord.

meningitis

inflammation of meninges, usually a bacterial infection.

meningoencephalitis

inflammation of the brain or meninges. (plural, meninges)

menopause

the cessation of menstruation due to hormonal changes, surgery, or drug use. Natural menopause typically occurs between 45 and 60 years of age; women with HIV may experience early menopause.

menstruation (menses)

a stage of the female reproductive cycle. An ovum (egg) matures and is released every month. Hormones are released to prepare the uterus for possible implantation. If pregnancy does not occur, the uterine lining (blood and tissue) is shed and expelled (the menstrual period).

Mepron

brand name of atovaquone. Approved for the treatment of mild to moderate PCP pneumonia in people who are intolerant to standard treatments.

messenger RNA (mRNA)  
pieces of ribonucleic acid that carry genetic information from DNA to ribosomes, leading to the synthesis of new proteins.

metabolism (adjective metabolic)  
the process of building the body's molecular structures from nutrients (anabolism) and breaking them down for energy production (catabolism).

metabolite  
a product of metabolism, including intermediate and waste products.

metastasis (adjective metastatic, verb metastasize)  
secondary cancer that has spread from the primary or original site to another part of the body.

methadone  
an oral opioid drug used for pain therapy and to treat opiate (e.g., heroin) addiction. Methadone maintenance therapy is used to prevent withdrawal symptoms by administering a small dose of methadone on a regular (e.g., daily) basis.

methemoglobin  
a form of hemoglobin that is unable to combine reversibly with, and thus transport, oxygen.

metronidazole (Flagyl)  
an antibiotic drug used to treat giardiasis and under study for the treatment of microsporidiosis.

MHC  
see major histocompatibility complex.

micro- (prefix)  
small.

microbe  
a tiny living organism (e.g., bacterium, protozoan, fungus), especially those which cause disease.

microbicide  
an agent that inactivates, kills, or destroys microbes.

microcephaly  
a birth defect characterized by an abnormally small head, incomplete development of the brain, and usually mental retardation.

microglia  
cells within the brain that are related to macrophages.

micronutrient  
a trace element; an organic compound small amounts of which are essential for physical health, growth, and metabolism.

microsporidiosis  
infection (Microsporidia protozoal pathogen) that causes diarrhea and cramps. This is sometimes incorrectly diagnosed as cryptosporidiosis.

mineral

an carbonless inorganic element that promotes enzymatic reactions within the body and is necessary for proper cellular metabolism. Essential minerals include sodium, potassium, calcium, phosphorous, and magnesium.

MIP-1 alpha, MIP-1 beta

two chemokine proteins that affect HIV activity. MIP-1-alpha and MIP-1-beta are believed to act in conjunction with RANTES, another chemokine.

mitochondria

a rod-shaped or oval organelle in the cytoplasm of a cell that produces most of the cell's energy.

mitogen

a substance that stimulates the division of cells and can induce cancerous growth.

molecule

a small unit of matter made up of atoms. A molecule is the smallest unit of a substance that retains its unique characteristics.

molluscum contagiosum

an infectious skin disease caused by a virus. Symptoms are small, white tumors on the face or body.

monilia

a group of yeast-like fungi related to Candida.

mono-

prefix, one, alone.

monoamine oxidase inhibitor (MAO inhibitor)

an older class of therapeutic drugs used to treat clinical depression.

monoclonal antibodies (MAB)

antibodies derived (often by genetic engineering) from a single cell or its clones.

MAB are specifically directed against a particular antigen (e.g., anticytomegalovirus antibodies) and are used as tools to detect and identify specific proteins.

monocyte

a large white blood cell that plays a role in immune defense by acting as a scavenger that destroys invading microorganisms. Monocytes circulate in the bloodstream; when they migrate to the tissues, they mature into macrophages. Monocytes are a reservoir of HIV.

monokine

a cytokine produced by monocytes and macrophages.

mononeuritis multiplex

a type of neuropathy characterized by inflammation of or damage to several nerves in unrelated parts of the body, leading to asymmetric areas of movement and sensory disorder. The condition tends to occur during the early stages of HIV infection.

mononucleosis (kissing disease)

an infectious disease caused by the Epstein-Barr virus that is easily transmitted via saliva. The disease is characterized by a sore throat, fatigue, and possibly swollen glands or a swollen spleen.

monotherapy

use of a single drug or other therapy.

morbidity

sickness; the state of being affected by disease.

morphine

a narcotic analgesic derived from opium that has effects on the central nervous system and the bowel. Morphine is used for the relief of acute or chronic severe pain.

mortality

death. The mortality rate is the rate of death in a given population.

motility

the ability to move.

motor function

movement functions of the body.

MRI

abbreviation, see magnetic resonance imaging.

mucocutaneous

denoting the junction where mucous membrane and skin meet at the oral, vaginal, and anal orifices of the body.

mucorisis

infection with a Mucorales fungus. The disease may involve the brain or sinuses. Infection is rare and usually occurs in immunocompromised people.

mucosal immunity

immunity that involves IgA antibodies located in the mucous membranes at the openings of the body (e.g., the genital tract).

mucous membrane (mucosa)

a moist layer of semi-permeable tissue lining the openings of the body (e.g., the gastrointestinal, respiratory, and genitourinary tracts).

mucus

a thick, viscous fluid secreted by mucous membranes that consists primarily of glycoproteins (e.g., mucin). Mucus acts as a protective barrier and lubricant.

Multicenter AIDS Cohort Studies (MACS)

a set of longitudinal studies of over 5000 gay and bisexual men in four U.S. cities; long-ranging data are available for men in this cohort from as far back as 1984.

multidrug-resistant tuberculosis (MDR-TB)

a strain of *M. tuberculosis* that is resistant to a number of the standard anti-TB drugs. Treatment requires aggressive therapy with up to 7 different drugs taken concurrently.

multinucleated giant cell (MGC)

a cell that forms clusters in the brain. MGCs are associated with HIV infection.

multivariate analysis

a statistical analysis technique in which multiple variables are analyzed separately to determine the contribution made by each variable to an observed result.

musculoskeletal

relating to the muscles and the skeletal system.

mutation

a change in the character of a gene that is perpetuated in subsequent cell divisions.

myalgia

muscular pain

Myambutol

brand name; see ethambutol.

myasthenia



abnormal muscular weakness

Mycelex  
brand name; see clotrimazole.

myco-, myc-  
prefix, fungus.

mycobacteria  
a category of gram-positive, acid-fast bacteria that contains species that cause diseases such as tuberculosis, leprosy, and Mycobacterium avium complex.

Mycobacterium avium complex (MAC)  
a disease caused by *M. avium* or *M. intracellulare* (sometimes referred to as Mycobacterium avium-intracellulare or MAI), bacteria found in soil and water. In immunosuppressed persons, the bacteria can infect the lymph nodes, intestines, bone marrow, liver, spleen, spinal fluid, lungs, and GI tract. MAC is the most common bacterial infection in persons with advanced AIDS (usually under 50-75 CD4 cells/mm<sup>3</sup>). Symptoms include diarrhea, wasting, fever, night sweats, fatigue, and enlarged spleen. Clarithromycin is used as treatment and prophylaxis for MAC. MAC is considered an AIDS-defining condition in the U.S.

Mycobacterium kansasii  
an atypical mycobacterial species that usually does not cause disease in humans, but may do so in immunocompromised individuals.

Mycobacterium tuberculosis  
commonly called tuberculosis or TB. a bacterial infection.

Mycobutin  
brand name; see rifabutin.

mycoplasma  
a microorganism (e.g., *Mycoplasma penetrans*) that usually does not cause disease in people with healthy immune systems. Mycoplasma is believed by some to be a co-factor in the development of AIDS.

mycosis (adjective mycotic, mycological)  
a disease caused by fungus (e.g., candidiasis, cryptococcosis, histoplasmosis).

myelin  
a white fatty substance that forms the sheath around the axons of some neurons and provides insulation necessary for proper neural transmission.

myelo-, myel-  
prefix, spinal cord, marrow.

myelocyte  
a type of immature white blood cell normally found in the bone marrow.

myeloma  
a malignant tumor of the bone marrow.

myelosuppression  
inhibition of bone marrow activity, causing decreased production of blood cells.

myelotoxic  
destructive to the bone marrow.

myocardium (adjective myocardial)  
the muscle layers of the heart.

myositis

inflammation of the skeletal muscle, which may involve muscle degeneration and weakness. Polymyositis simultaneously involves several muscles. Dermatomyositis is a condition characterized by both skin and muscle inflammation.

## **N**

### **NAC (n-acetylcysteine)**

a substance that is converted within the body to cysteine, an amino acid that is a component of glutathione, a major cellular antioxidant. NAC may block the action of tumor necrosis factor.

### **naive**

inexperienced. The term is used to describe an individual who has never taken a certain drug or class of drugs (e.g., AZT-naive, antiretroviral-naive), or to refer to an undifferentiated immune system cell.

### **naive T-cell**

a subset of CD4 and CD8 cells that proliferate rapidly when exposed to new antigens. Naive cells are "uncommitted" and respond to general antigenic stimulation (i.e., not only to a specific antigen). A naive T-cell is not yet "programmed" to stimulate either a cell-mediated (TH1) or a humoral (TH2) response.

### **naltrexone (Revia, Trexan)**

a drug used to treat opiate (e.g., heroin) addiction and alcoholism. Naltrexone blocks the opiate receptors, preventing cells from responding to opiate drugs and endorphins. Naltrexone has been used as an immune modulator by some people with HIV disease.

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

a U.S. government-sponsored research agency of the National Institutes of Health, that deals with malignant diseases.

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

an agency of the National Institutes of Health that conducts federally funded research aimed at preventing, diagnosing, and treating infectious diseases such as AIDS and tuberculosis. NIAID conducts the majority of HIV/AIDS research in the U.S., including the AIDS Clinical Trials Group (ACTG), Community Programs for Clinical Research on AIDS (CPCRA), and the HIV Vaccine Trials Network (HVTN).

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

a large biomedical research organization that is part of the U.S. Public Health Service. NIH includes various institutes, centers, and divisions, several of which (e.g., NIAID) perform AIDS-related research.

### **National Science Foundation (NSF)**

the agency of the U.S. federal government that coordinates and funds scientific and technological research, including medical research.

### **natural history study**

a study of the development of a disease over the course of time.

### **natural killer cell (NK cell)**

a type of lymphocyte that attacks and kills tumor cells and cells infected with microorganisms. Unlike cytotoxic T-lymphocytes, NK cells are nonspecific and attack infected cells without regard to specific antigens or MHC receptor configuration.

NDA

see new drug application.

nebulizer

a device used to convert liquid medication to a fine mist that can be inhaled.

necrosis

localized tissue death.

nef

a gene of HIV that influences viral replication; also the protein produced by that gene.

nelfinavir (NFV, Viracept)

an FDA-approved protease inhibitor currently in clinical trials.

neo-

prefix, new, recent.

neoplasm

abnormal new growth in plant or animal tissue, a tumor.

neopterin

a substance produced by macrophage cells when they find a foreign substance in the blood stream. Neopterin alerts other cells to take action against the intruder.

Measuring neopterin is one way of finding out how well the immune system is working.

nephro-, neph-

prefix, kidney.

nephrolithiasis

see kidney stone.

nephrotoxicity

being poisonous to the kidneys; many drugs have nephrotoxic side effects.

nerve

a cordlike structure composed of fibers that conduct impulses between the central nervous system and other parts of the body. See also neuron.

nerve growth factor (NGF)

one of a family of proteins that nourish and sustain neurons.

neural

relating to a neuron, a nerve or the nervous system.

neuralgia

pain along a nerve pathway.

neuritis

inflammation of the nerves, typically accompanied by symptoms of pain and tenderness.

neuro-,neur-

prefix, pertaining to the central nervous system (brain, spinal cord)

neuroimaging

examination of the brain by external methods (e.g., MRI, CT scan).

neurologic

pertaining to the central nervous system (brain and spinal cord) or the peripheral nervous system (the nerves in the rest of the body).

neurology

the branch of medicine concerned with the nervous system and its disorders.

neuron (nerve cell)

a cell that conducts electric neural impulses from one part of the body to another. Neurons are made up of dendrites (branch-like fibers which receive impulses) and axons (fibers which transmit impulses), and communicate with other neurons and effector organs at junctures called synapses.

neuropathy (adjective neuropathic)

damage to the nerves; an inflammatory or degenerative condition of the nervous system. See also peripheral neuropathy.

neuroradiology (neuroradiography)

the study or diagnosis of parts of the nervous system using x-rays.

neurotoxicity

the quality of being destructive of or poisonous to the tissues of the nervous system.

neurotransmitter

a chemical messenger (e.g., dopamine, serotonin) used to communicate among neurons and between neurons and other types of cells.

neutralizing antibody

an antibody that neutralizes (renders harmless) infectious microorganisms.

Neutralizing antibodies to HIV block the ability of the virus to infect cells. Contrast with enhancing antibody.

Neutrexin

brand name; see trimetrexate.

neutropenia

a low number of neutrophils in the blood. See also neutrophils.

neutrophil

a white blood cell (granulocytes) that is filled with chemicals that can destroy (digest) microorganisms. These cells are the body's defense against bacterial infection.

nevirapine (NVP, Viramune)

a non-nucleoside reverse transcriptase inhibitor drug approved for the treatment of HIV disease. Nevirapine blocks HIV replication by binding to the reverse transcriptase enzyme. Side effects include rash and liver toxicity.

New Drug Application (NDA)

an application made by a drug manufacturer to the FDA requesting marketing approval of a new drug.

nf-kappa b (NF-kB)

nuclear factor kappa B, a regulatory protein that functions to increase cellular metabolic activity and cell division. Certain HIV genes contain receptors for NF-kB, which may induce increased HIV gene expression and thus viral replication.

niacin

a vitamin needed for the metabolism of proteins, carbohydrates and fats. Signs of niacin deficiency include weakness, headache, skin rash, and diarrhea.

night sweats

abnormal sweating during sleep.

nitric oxide

a reactive oxygen intermediate (free radical) that has several biological functions.

Nizoral

brand name; see ketoconazole.

NK cell

see natural killer cell.

NNRTI

see non-nucleoside reverse-transcriptase inhibitor.

nodule (nodular lesion)

a hard, raised area of the skin or a mucous membrane; a knot or swelling.

nongonococcal cervicitis (NGC)

inflammation of the uterine cervix caused by an organism other than *Neisseria gonorrhoeae* (e.g., *Chlamydia trachomatis*, *Trichomonas vaginalis*).

nongonococcal urethritis (NGU)

inflammation of the urethra caused by an organism other than *Neisseria gonorrhoeae*.

non-governmental organization (NGO)

an international organization that is not run by a government. Many international public health groups are NGO.

non-Hodgkin's lymphoma (NHL)

a type of cancer of the lymph nodes. NHL is characterized by abnormal growth of B-cells, and is the most common type of lymphoma in people with HIV/AIDS. See also Hodgkin's disease, lymphoma.

non-nucleoside reverse transcriptase inhibitor (NNRTI)

a drug (e.g., nevirapine, delavirdine) that inhibits the action of the HIV-1 reverse transcriptase enzyme, thus blocking HIV replication, yet works in a different way than nucleoside analogue drugs, by binding with the RT enzyme.

nonopioid analgesic

a pain reliever (e.g., aspirin, ibuprofen) that is not derived from opium and does not have opium-like characteristics and effects.

nonoxynol-9

a surfactant chemical that is used as a spermicide and microbicide (e.g., in contraceptive foams, as a lubricant on condoms).

nonspecific immunity

immune system function (e.g., phagocytosis) that is not directed toward a specific antigen or pathogen. Contrast with specific immunity.

nonsteroidal anti-inflammatory drug (NSAID)

a drug (e.g., aspirin, ibuprofen) that relieves pain and reduces inflammation and fever, but which is not a steroid or a narcotic.

Norplant

a brand name for the drug levonorgestrel a progesterone-releasing contraceptive that is embedded under the skin of the upper arm.

Norvir

brand name; see ritonavir, a protease inhibitor.

NSI

non-syncytium-inducing strain of HIV. See syncytium.

nuclease

an enzyme (or group of enzymes) which splits nucleic acids into different products.

nucleic acid

DNA and RNA, molecules made up of nucleotides that carry genetic information.

nucleic acid base

one of the components that make up the genetic material; in combination with sugar and phosphate groups they form nucleotides, the "building blocks" of DNA and RNA. There are two types of bases, purines (adenine and guanine) and pyrimidines (cytosine, thymine and uracil). Bases are complementary and can bind with their counterpart in a process known as base-pairing.

nucleic acid sequence-based amplification (NASBA)

a load assay for detecting HIV viral load in blood plasma. NASBA amplifies RNA rather than DNA.

nucleoside

a precursor compound that is converted to a nucleotide by the addition of a phosphate group.

nucleoside analogues (NA)

compounds (e.g., AZT, ddI, ddC, d4T, 3TC) that mimic one of the building blocks of DNA and RNA. NAs suppress retroviral replication by interfering with the reverse transcriptase enzyme. The defective synthetic nucleosides cause premature termination of the viral DNA chain. NAs are prodrugs that are converted into active agents by phosphorylation.

nucleotide (deoxyribonucleotide, ribonucleotide)

one of the building blocks that make up the genetic material (DNA and RNA). Nucleotides consist of a base (adenine, cytosine, guanine, thymine or uracil), a sugar, and a phosphate group.

nucleotide analogue

a compound (e.g., cidofovir, PMPA), similar to a nucleoside analogue, which is already "primed" with an extra phosphate group and ready to be added to a DNA chain. The defective synthetic nucleotide interferes with viral replication by causing premature termination of the viral DNA chain.

nucleus

central part of a cell which contains its genetic material.

nutrient

any item that nourishes or promotes growth and metabolism. Nutrients act as cofactors in many vital physiologic processes.

nutrition

the processes involved in ingesting and metabolizing food material by living plants and animals.

NVP

see nevirapine.

nystatin (Mycostatin)

a topical treatment for candidiasis (thrush).

## O

observational study

a study in which no experimental drug is administered, but the patient's symptoms, laboratory values, and response to treatment are observed during the course of normal medical management.

occult

hidden or concealed (e.g., an occult cause of disease).

Occupational Safety and Health Administration (OSHA)

the U.S. federal agency which develops policies and handles enforcement of safety in the workplace.

octoxynol-9

a surfactant chemical used as a spermicide and microbicide.

odynophagia

painful swallowing.

Office of AIDS Research (OAR)

the U.S. federal agency responsible for coordinating AIDS research done by various federal departments, institutes, and agencies.

off-label use

use of an FDA-approved drug for an indication other than that for which the drug was approved.

OI

see opportunistic infection.

oligo- (prefix)

few.

oligodendrocyte

a type of brain cell that produces myelin, a protective covering necessary for proper neural transmission.

oligomenorrhea

sparse menstrual bleeding.

oligonucleotide

a sequence of nucleotides, the building blocks of DNA.

oncogen

an agent (e.g., virus, toxin) that is able to cause neoplastic cell growth or cancer.

oncogene

a gene (e.g., p53) that facilitates the development of cancer by regulating cell growth, either by actively "turning on" abnormal cell growth or failing to "turn off" normal cell growth.

oncogenesis

the development and growth of a tumor.

oncology

the study and treatment of cancer.

onychomycosis

a fungal infection that causes the toenails and/or fingernails to thicken, discolor, and split. Onychomycosis is often one of the earliest manifestations of HIV disease progression.

oocyst

the earliest stage of the life cycle of a parasitic protozoan (e.g., cryptosporidium) in which it is enclosed in a hard-shelled capsule. Oocysts are dormant (non-growing) but may still be infectious.

**oophorectomy**

surgical removal of the ovaries.

**oophoritis**

inflammation of the ovaries, a possible manifestation of pelvic inflammatory disease.

**open label trial**

a clinical trial of a drug in which researchers and patients know which drug is being administered. (also see double-blind and clinical trial.)

**ophthalmology**

the medical specialty relating to the treatment of diseases and disorders of the eye.

**opiod (opiate, narcotic)**

a class of drugs (e.g., heroin, codeine, methadone) that are derived from the opium poppy plant, contain opium, or are produced synthetically and have opium-like effects. Opioid drugs relieve pain, dull the senses, induce sleep, and are addictive.

**opportunistic infection (OI)**

an illness caused by a microorganism that usually does not cause disease in persons with healthy immune systems, but which may cause serious illness when the immune system is suppressed. Common OIs in HIV-positive people PCP, MAC, and CMV.

**oral**

relating to the mouth; taken by mouth.

**oral candidiasis (thrush)**

a fungal infection of the mouth, usually caused by *Candida albicans*, which appears as white or red patches on the oral mucosa, tongue, palate, or back of the throat. Types include pseudomembranous candidiasis (thrush) characterized by removable white plaques, acute atrophic candidiasis, and chronic atrophic candidiasis (angular cheilitis).

**oral hairy leukoplakia**

a condition believed to be caused by the Epstein-Barr virus characterized by white, raised, usually painless lesions on the sides of the tongue and elsewhere in the mouth.

**organelle**

one of the specialized small organs of a living cell (e.g., mitochondria).

**organic**

relating to an organ in the body or relating to the processes of living cells and organisms.

**Orphan Drug Act**

a law designed to facilitate the development of drugs to treat rare disorders by providing financial incentives to drug companies.

**orthopedics**

the branch of medicine that deals with preserving and restoring function of the musculoskeletal system using physical or surgical methods.

**os**

the opening of the uterine cervix into the vagina.

**osteomyelitis**

an inflammation of the bone and/or bone marrow.



osteoporosis

atrophy of the bone tissue; loss of calcium from the bones. Osteoporosis is influenced by hormonal levels and may be ameliorated by adequate calcium intake.

otitis media

inflammation of the middle ear.

outbreak

a recurrence of a latent infection (e.g., a herpes simplex virus outbreak). Also refers to the widespread occurrence of a disease within a population.

outpatient

treatment in a hospital or other medical facility that does not require overnight stay..

ovary

one of the two female gonads located within the abdomen on either side of the uterus. The ovaries are the site of egg (ova) storage and maturation.

oviduct

see fallopian tube.

ovum (plural ova)

an egg.

oxandrolone

an anabolic (mass-building) steroid that may lack some of the hormonal side effects of testosterone. The drug is under study as a therapy for HIV wasting syndrome.

oxidation

a chemical reaction in which another substance combines with oxygen by giving up an electron. Oxidants (pro-oxidants) promote this reaction, while antioxidants inhibit it. Oxidation is the process by which carbohydrates, fats, and proteins from food are broken down to provide usable energy for the body. See also oxidative stress.

oxidative stress

increased levels of free radicals and other oxidation-promoting molecules associated with disease, immune response, and aging. When the production of pro-oxidants exceeds the cellular supply of antioxidants, harmful effects may result including cell membrane damage, cell death, and damage to genetic material (DNA and RNA) resulting in mutations.

oxygen (O<sub>2</sub>)

a colorless, odorless gas that is essential to the normal function of all cells of the body.

oxygenated blood

blood that has passed through the lungs and exchanged its carbon dioxide for oxygen. Oxygenated blood is pumped from the left ventricle to the various organs and tissues of the body.

## **P**

p24

a core protein of HIV produced by the gag gene.

p24 antibody

antibodies produced in response to the presence of p24 antigen of HIV. The p24 antibody test measures the level of p24 antibodies in the blood. High levels of p24

antibody in the absence of p24 antigen may indicate that the immune system is successfully suppressing the virus.

p24 antigen

protein fragment (nucleocapsid) of HIV. At one time, p24 antigen was considered a surrogate marker for disease progression. Today, scientists know there are long-term non-progressors with high p24 lab readings. People have died of AIDS without ever showing any p24 antigen.

p450

see cytochrome P450 system.

paclitaxel (Taxol)

a drug derived from the yew tree that is used to treat certain types of cancer (e.g., ovarian cancer). Paclitaxel works by inhibiting cell division, and is under study for the treatment of Kaposi's sarcoma.

palliative

offering symptomatic relief and comfort care rather than a cure.

pancreas

a gland lying behind the stomach that creates insulin and pancreatic juice -- a clear, alkaline containing enzymes used during digestion.

pancreatitis

potentially fatal inflammation of the pancreas. Pancreatitis is a side effect of some anti-HIV drugs. Symptoms include severe stomach pain.

pancytopenia

low levels of all types of blood cells.

pandemic

a widespread disease outbreak affecting the population of an extensive area of the world. See also epidemic.

Papanicolaou smear (Pap smear)

a procedure in which a specimen of cells is taken from the uterine cervix or anus, prepared on a slide, and examined under a microscope for abnormal cell growth (dysplasia). An abnormal Pap smear suggests increased risk of developing cancer.

papillomavirus

see human papillomavirus.

papovavirus

a type of virus that can cause neoplasms (e.g., warts, cancer).

papule

a small raised bump on the skin or mucous membrane.

parallel track

a system of making experimental drugs available to individuals who are ineligible for or unable to participate in clinical trials. Parallel track drugs have completed phase I safety testing and show enough evidence of efficacy to merit wider release.

paranasal sinus

an air-filled cavity within the skull; there are four sets of paranasal sinuses: frontal, maxillary, sphenoidal and ethmoid.

paraplegia

paralysis of both legs and the lower part of the body. See also quadriplegia.

parasite

an organism that grows and feeds in or on another organism without the host benefiting; most are harmless, but some are deadly. The most common ways of getting a parasitic infection are from contaminated water and rimming (oral-anal contact).

parasympathetic nervous system  
a branch of the autonomic nervous system that tends to induce secretion, increase the tone and contraction of smooth muscle, and cause dilation of blood vessels.

parenchyma  
the internal functional tissues of an organ, as opposed to supporting or structural tissues.

parenteral  
given by injection, bypassing the enteral (gastrointestinal) tract.

paresthesia  
abnormal physical sensations such as prickling or tingling.

paromomycin (Humatin)  
an antibiotic used to treat intestinal infections such as amebiasis, giardiasis, and cryptosporidiosis.

parvovirus  
a family of viruses, several species of which infect humans, including the adeno-associated viruses which are used as vectors in biotechnology. Parvoviruses tend to infect rapidly growing tissues. Symptoms include fever, malaise and possibly skin rash.

passive immunity  
immunity acquired by transfer of antibodies, either naturally (e.g., from mother to fetus) or by injection. Contrast with active immunity.

passive immunization (passive immunotherapy)  
the introduction of exogenous antibodies (gamma globulins) to treat disease, for example from an individual with active immunity, or of genetically engineered antibodies. Contrast with active immunization.

pasteurization  
partial sterilization of a substance (especially a liquid) using heat to destroy harmful organisms without inducing major chemical alteration of the substance.

pathogen (adjective pathogenic)  
any disease-causing agent, especially a microorganism.

pathogenesis  
the development of a particular disease, including the specific events involved, bodily tissues or systems affected, mechanisms of damage, and timing of the course of disease.

pathogenicity  
the property of being able to cause disease.

PCP  
see pneumocystis carinii pneumonia.

PCR  
see polymerase chain reaction.

peak level  
the highest concentration of a drug achieved in the body.

PEGylated interferon

- A weekly interferon injection used to treat hepatitis types B and C.
- pelvic exam**  
examination of the organs of the female reproductive system. A speculum is used to open the vagina and aid in visualizing the uterine cervix; a sample of cells may be taken for a Pap smear or laboratory culture. The uterus and ovaries are palpated (felt with the fingers) to detect swellings or other abnormalities.
- pelvic inflammatory disease (PID)**  
infection of the upper female reproductive tract including the uterus, fallopian tubes, and ovaries. PID is often the result of untreated chlamydia or gonorrhea. Symptoms include pain, fever, and vaginal discharge. Without treatment, PID can become chronic and severe and may lead to scarring, infertility, ectopic pregnancy, septicemia, and death. See also salpingitis.
- penicillin**  
an antibiotic drug used to treat various bacterial infections. Penicillin G is a strong form of penicillin used to treat neurosyphilis.
- pentamidine (Pentam, Nebupent)**  
a drug used to prevent and treat PCP. Intravenous pentamidine is used to treat severe cases of PCP, especially in patients who cannot tolerate TMP-SMX. Aerosolized pentamidine is used as a prophylaxis against PCP. Side effects may include pancreatitis.
- pentoxifylline (PTX, Trental)**  
a drug used to treat circulatory problems. PTX increases the production of interferons and reduces levels of tumor necrosis factor (TNF) in the body.
- peptide**  
a short chain of amino acids linked by peptide bonds; longer chains are generally called proteins.
- peptide T**  
a peptide composed of a sequence of 8 amino acids. Peptide T is under study as therapy for HIV-related dementia and peripheral neuropathy.
- pericarditis**  
inflammation of the pericardium, the membrane that surrounds the heart.
- perinatal HIV transmission (PHT)**  
the transmission of HIV from mother to fetus or infant. An estimated 10-40% of mothers transmit HIV to their offspring; AZT (ZDV) has been shown to significantly reduce the risk of PHT. See also vertical transmission.
- periodontal disease (periodontitis)**  
an inflammatory disease of the tissues that surround and support the teeth. Periodontal disease may begin as gingivitis and progress to more serious gum disease accompanied by erosion of the gums and bone supporting the teeth.
- peripheral blood mononuclear cell (PBMC)**  
a single-nucleus white blood cell (e.g., monocyte) that circulates in the blood. See also mononuclear cell.
- peripheral nervous system (PNS)**  
the portion of the nervous system outside of the brain and spinal cord; nerves that run from the spinal cord to the rest of the body.
- peripheral neuropathy**

any disease, inflammation, or abnormality of the peripheral nervous system. This is considered an AIDS-defining condition in the United States.

peritoneum

the thick membrane that lines the abdominal cavity and covers the visceral organs.

The peritoneal cavity is the space between the outer and inner layers of the peritoneal membrane.

peritonitis

inflammation of the peritoneum.

persistent generalized lymphadenopathy (PGL)

a condition in which the lymph nodes are chronically swollen in more than one area of the body for a prolonged time, sometimes accompanied by a swollen spleen.

PET scan

see positron emission tomography.

PGL

see persistent generalized lymphadenopathy.

phagocyte

a scavenger white blood cell (e.g., neutrophil, basophil, eosinophil, monocyte, macrophage) that engulfs and destroys dead cells, bacteria, and other debris.

pharmacodynamics

the study of drug activity.

pharmacokinetic (PK) trials

a clinical trial of an experimental drug that concentrates on the body's ability to absorb the drug. Blood tests are commonly given every few minutes or hours during a pharmacokinetic trial.

pharmacology

the science of drugs, their sources and how they work; the specialty of preparing and dispensing drugs.

pharmacotherapy

the use of drugs to treat disease.

pharyngitis

pain and inflammation of the pharynx (throat).

pharynx (adjective pharyngeal)

the throat; the upper part of the gastrointestinal tract between the oral cavity and the esophagus.

phase I clinical trial

the first clinical trial of an experimental drug, designed to evaluate the pharmacokinetics, safety, and toxicity (adverse reactions) at various dosing levels. Most have only a small number participants. Phase I clinical trials are part of the U.S. FDA approval process. Also see double-blind, and open label trial.

phase II clinical trial

the second stage of the evaluation of a new drug in humans; these trials evaluate drug efficacy, involve more participants (often several hundred) and typically last longer than phase I studies. Phase II trials may be divided into phase IIa (pilot trials in patients with the disease to be treated) and phase IIb (well-controlled efficacy trials). Typically phase II trials are done only if phase I trials have shown the drug to be safe, but sometimes phase I and phase II studies are combined.

phase III clinical trial

these trials are designed to verify and extend the information gathered in phase II trials, and involve large numbers of participants (several hundred to several thousand). Phase III trials may compare the drug being tested to other therapies or to placebo. Phase IIIa trials are conducted prior to the filing of a new drug application (NDA); phase IIIb trials are conducted after an NDA is submitted.

phase IV clinical trial

post-marketing studies done after regulatory approval has been granted and the drug has been offered for sale. These trials provide additional information about safety and efficacy in large numbers of patients under "real world" conditions of use.

phenotype

visible characteristics and/or behavior that result from the interaction of an individual's genetic "blueprint" (genotype) and the environment. Contrast with genotype.

photosensitivity

an increased sensitivity to light, which may lead to easy sunburning and other adverse effects. Photosensitivity is a side effect of some drugs (e.g., Dapsone, Hypericin).

phototherapy

treatment using light, typically ultraviolet light.

PI

see principal investigator, protease inhibitor.

PID

see pelvic inflammatory disease.

PIFELTRO

Doravirine - NNRTI

pituitary gland

a small gland in the brain that produces several hormones that regulate bodily functions via the action of other endocrine glands.

placebo

an inactive substance (sometimes called a sugar pill) given to a control group in a clinical trial.

placebo effect

a change (e.g., a reduction in symptoms) that is attributable to the treatment process itself as opposed to the therapeutic value of the therapies used, most likely due to the expectations of the patient.

placebo-controlled trial

a trial of an experimental therapy in which an inactive substance (placebo) is given to one group while the treatment under study is given to another. The results obtained in the different groups are then compared. Placebo is used to make the experience of the treatment and control group as similar as possible and to minimize bias due to the expectations of the patient or investigator. Contrast with uncontrolled trial.

placenta

the vascular organ that connects the fetus and the mother's uterus, through which metabolic exchange between the fetus and mother occurs. Some pathogenic organisms and maternal antibodies may be transferred across the placenta.

plasma

the fluid, non-cellular portion of circulating blood that carries blood cells and nutrients throughout the body, removes metabolic wastes, and is a medium for chemical communications between different parts of the body. See also serum.

plasma cell

a type of blood cell that produces antibodies. Plasma cells develop from B-cells in response to stimulation by an antigen.

platelet

a small blood cell (protoplasmic disk) involved in coagulation and wound healing. HIV can lower a person's platelet count, causing severe bleeding. The normal platelet count is 200,000 to 300,000.

plenary

a meeting, usually part of a large conference, that is open to all participants.

pleura

the linings of the lung.

pleurisy

swelling of the linings of the lung (e.g., due to pneumonia, lung cancer) characterized by pain and shortness of breath.

pleuritis

inflammation of the pleura, or linings of the lung.

pluripotent stem cell

a hematopoietic cell in the bone marrow that is capable of differentiating into any type of blood cell.

PMEA (phosphonyl methoxy ethyl adenine)

an experimental nucleoside analogue drug that may have activity against herpesviruses and HIV.

PML

see progressive multifocal leukoencephalopathy.

PMPA (phosphono-methoxy-propyl adenine)

an experimental nucleotide analogue, related to PME. PMPA can enter infected as well as uninfected cells.

pneumococcus

the organism that causes pneumococcal pneumonia.

pneumocystis carinii pneumonia (PCP)

a life-threatening type of pneumonia believed to be caused by a protozoan. PCP is a common infection that can cause severe illness in immunocompromised people (especially those with CD4 counts less than 200 cells/mm<sup>3</sup>); it remains a leading cause of death in people with AIDS. Symptoms include dry cough, fever, chest tightness, and shortness of breath. Pneumocystis carinii can also infect other parts of the body. First-line treatment and primary prophylaxis is TMP-SMX (Bactrim, Septra); other treatments and prophylaxes include Dapsone, Pentamidine, and Atovaquone.

pneumonia

a group of diseases that show up as an inflammation of the lungs. Recurrent pneumonia (pneumonia recurring within 1 year) is considered an AIDS-defining condition in the United States.

pneumonitis

an inflammation of the lungs. The disease pneumonia is one type of pneumonitis.

pneumovax vaccine  
a vaccine developed to prevent pneumonia caused by common pneumococcal strains.

PNS  
see peripheral nervous system.

po  
given by mouth (from the Latin per os).

pol  
the HIV gene that encodes the replicative enzymes (protease, integrase, reverse transcriptase); also the protein produced by that gene.

polycythemia  
abnormally high level of red blood cells in the circulating blood.

polymerase  
an enzyme that cleaves polymers, chemical compounds formed by the linkage of molecular pieces.

polymerase chain reaction assay (PCR)  
a laboratory test to determine a patient's viral load. It works by repeatedly copying genetic material using heat cycling and enzymes. A viral load test is used to see how well a drug regimen is working. The lower the viral load the better.

polymicrobial  
including or caused by more than one microorganism.

polymorphonuclear leukocyte (PMNL)  
a type of white blood cell (e.g., neutrophil) containing more than one nucleus. PMNL are phagocytes (scavenger cells) important in immune defense, particularly against cell-free organisms such as fungi.

polyneuropathy  
a type of peripheral neuropathy that involves damage to multiple nerves of the peripheral nervous system. Demyelinating polyneuropathy (which involves the destruction of the myelin sheath surrounding the neurons) and sensory axonal polyneuropathy are common in people with HIV disease. Symptoms may include weakness and painful tingling or burning sensations. See also peripheral neuropathy.

polyp  
any mass of tissue that bulges or projects outward or upward from the normal surface level. A polyp may be a precursor to cancer.

polyprotein  
a long thread of proteins produced during viral replication. The polyprotein is broken down by the protease enzyme into smaller components, which are then assembled into new virus particles.

polyradiculopathy  
a type of peripheral neuropathy characterized by the inflammation of the nerve roots.

positron emission tomography (PET) scan  
a method of imaging the brain by recording activity, as measured by cerebral blood flow, in different parts.

post-herpetic neuralgia (PHN)  
the often severe pain along a nerve pathway that sometimes follows the healing of herpes zoster (shingles) lesions.



post-marketing study

see phase IV trial.

postpartum

the period following childbirth.

potassium

a mineral necessary for the maintenance of homeostasis by the body.

potentiation

an increase in activity or effectiveness; an interaction between drugs that results in a synergistic effect.

power

a statistical term used to describe the ability of an experiment or trial to find a particular result. Generally the power of a study increases as more subjects are included or as the trial continues for a longer period of time.

poxvirus

one of a large family of viruses (e.g., smallpox) that typically cause skin eruptions.

PPD test (Mantoux test)

a test that uses an injection of a purified protein derivative of tuberculin to test for prior exposure to *Mycobacterium tuberculosis*. A positive reaction is induration (redness and swelling) at the injection site. See also tine test.

PPN

see parenteral nutrition.

preclinical testing

testing of an experimental drug in the laboratory or in animals prior to testing in humans.

prednisone

a corticosteroid drug with immunosuppressive effects that is used to decrease inflammation. Side effect may include mood changes, bone loss, nausea, and high blood pressure.

pre-malignant

refers to cells that display abnormal growth and development and may be an early stage in the development of cancer. See also dysplasia.

premature rupture of membranes (PROM)

a breaking open of the amniotic sac surrounding the fetus that occurs more than 4 hours before the onset of labor.

presumptive diagnosis/treatment

treatment based on an assumed diagnosis, prior to receiving confirmatory laboratory test results.

prevalence (prevalence rate)

the number of individuals with a condition in a specific population. The prevalence rate is determined by dividing the number of people with the condition by the total population.

preventive vaccine (prophylactic vaccine)

a vaccine that is intended to prevent a disease from occurring by priming the immune system to respond to a pathogenic organism. Contrast with therapeutic vaccine.

PREZCOBIX

darunavir + cobicistat - PI

Prezista

Protease inhibitor – Brand name of darunavir

primary care

basic medical care; the first line of medical management of a condition.

primary central nervous system lymphoma

a malignant proliferation of B-cells in the central nervous system associated with the Epstein-Barr virus. Symptoms include partial paralysis, aphasia, lethargy, confusion, memory loss, and seizures.

primary HIV infection

the initial stage of infection with HIV, prior to the development of antibodies. Primary HIV infection may be accompanied by acute retroviral syndrome, characterized by flu-like symptoms including fever, malaise, enlarged lymph glands, sore throat, skin rash, and muscle and joint aches.

primary infection

the initial introduction of an infectious organism into the body.

primary prophylaxis

a treatment intended to prevent the first occurrence of an infection or disease. Contrast with secondary prophylaxis.

principal neutralizing determinant

the part of an antigen that most reliably induces a protective immune response. The principal neutralizing determinant of HIV is the V3 loop of the envelope glycoprotein gp120.

principal investigator (PI)

the chief researcher in a clinical trial.

probenicid

a drug that promotes metabolism by the liver and kidneys, and which may be given with other drugs to lessen liver and/or kidney toxicity.

proctitis

inflammation of the mucous membranes of the rectum.

proctoscopy

examination of the rectum and lower end of the colon with a lighted instrument. See also sigmoidoscopy.

prodrug

an inactive form of a drug that exerts its effects after metabolic changes within the body convert it to a usable or active form.

progesterone

a female steroid hormone with anti-estrogen effects. Progesterone prepares the uterus for the development of the fertilized ovum and maintains the uterus throughout pregnancy. Synthetic progesterone is used as a contraceptive.

programmed cell death

see apoptosis.

progression

advancement of a disease.

progressive disease

a disease that continually increases in severity.

progressive multifocal leukoencephalopathy (PML)

a rapidly progressing, often fatal brain disease believed to be caused by the Jacob-Creutzfeldt (JC) papovavirus. PML infects oligodendrocytes (support cells in the brain) and leads to dysfunctional nerve signal transmission. Symptoms include headaches, changes in mental status, speech and vision difficulties, limb weakness, seizures, partial paralysis and loss of coordination. This is considered an AIDS-defining condition in the United States.

proinflammatory cytokine

a chemical messenger (e.g., IL-1, IL-6, tumor necrosis factor) produced by the body that promotes an inflammatory immune response.

prokinetic antiemetic

a drug that relieves nausea by promoting gastrointestinal motility, or speeds up the digestive and excretory processes.

prolactin

a pituitary hormone that stimulates the secretion of breast milk.

proleukin

see interleukin 2.

proliferation

rapid or uncontrolled reproduction or replication.

prophylactic vaccine

see preventive vaccine.

prophylaxis

a defense or protection. Several drugs are available to patients with suppressed immune systems to prevent certain opportunistic infections. For example, Bactrim is a prophylaxis against PCP. Using a condom is a prophylaxis against most sexually transmitted diseases; a treatment that helps to prevent a disease or condition before it occurs (primary prophylaxis) or recurs (secondary prophylaxis).

prospective study

a study that looks forward in time. Patients are selected and their progression is followed. A prospective cohort study follows a specific group of people over a period of time. Contrast with retrospective study.

prostaglandin

a locally acting chemical messenger that is produced by many types of cells.

Prostaglandins have a wide variety of effects including vasodilation and smooth muscle regulation; prostaglandins have a role in allergic reactions, uterine contraction, inflammation, and pain signaling.

prostate gland

a large gland in males located at the base of the urethra that manufactures the liquid portion of semen.

protease (proteinase)

an enzyme that cleaves proteins. HIV protease cleaves the large precursor proteins produced from viral RNA into the component parts (e.g., enzymes and structural proteins) that are then assembled into new viral particles. Protease is essential for the production of infectious new virions.

protease inhibitor (PI)

a class of anti-HIV drug that prevents creation of an HIV-specific protease.

protein

a complex compound (nitrogenous organic) containing amino acids, used in growth and repair of tissue.

proteinuria  
the abnormal presence of protein in the urine.

prothrombin time (PT)  
a test that measures blood coagulation ability. Prothrombin is a protein produced by the liver that facilitates blood clotting. See also coagulation factor.

protocol  
the official prospectus (plan) of a clinical trial. The protocol explains the purpose of the experimental treatment, and how the results will be tested and evaluated. It also contains information about drug dosing, duration, and inclusion/exclusion criteria.

protozoan  
a one-celled microorganism, several of which can cause disease in humans.

provirus  
a viral state in which viral DNA has been inserted into the chromosome of the host cell.

pruritus (adjective pruritic)  
a condition characterized by itching.

pseudomonas  
a group of aerobic rod-shaped bacteria, some of which (e.g., *P. aeruginosa*, *P. fluorescens*) can cause opportunistic infections in human.

psoriasis  
a common chronic skin condition characterized by reddish scaly patches, primarily on the scalp, elbows, knees and trunk. Outbreaks are more common and may be more severe in HIV-infected individuals. Psoriatic arthritis is a form of arthritis accompanied by psoriasis.

psychoneuroimmunology (PNI)  
the study of how psychological processes, mental state, and neurological and hormonal factors affect the functioning of the immune system.

psychosocial  
refers to factors that affect the psychological or social realm. Psychosocial factors (e.g., socioeconomic status, education, family situation) may make an important contribution to disease risk and progression, and are an essential aspect of a person's well-being.

psychotropic  
an agent (e.g., thiazine) that affects psychic or mental functioning or behavior.

public health service (PHS)  
the U.S. federal agency, part of the Department of Health and Human Services, that oversees the health of the public, monitors epidemics, etc. The National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC) are part of the PHS.

puerperal sepsis (puerperal fever)  
an infection (e.g., with *Streptococcus* bacteria) acquired during childbirth. Puerperal fever is an outcome of puerperal sepsis characterized by fever, rapid heartbeat and inflammation of the uterus; the condition may be fatal.

pulmonary

relating to the lungs.

pulmonary TB

TB disease that occurs in the lungs, usually producing a cough that lasts 3 weeks or longer. Most TB disease is pulmonary.

pulse oximetry

a method of measuring the amount of oxygen in the blood by means of a clip-like instrument that attaches to the finger.

punch biopsy

the removal of a small piece of tissue from the skin or mucous membrane for diagnostic analysis.

purine

one of the 2 types of nucleotide bases that make up DNA and RNA. The purine bases are adenine and guanine. See also pyrimidine.

purpura

a purplish discoloration due to bleeding underneath the skin.

purulent

characterized by the accumulation of pus.

pus

a thick, greenish-yellow fluid composed of dead white blood cells, killed microorganisms and other cellular debris.

pustule

a small skin elevation or blister containing pus.

p-value

a probability value that is reported in experiments such as clinical trials. The p-value indicates how likely it is that the result obtained by the experiment is due to chance alone. A p-value of less than 0.05 is considered statistically significant, that is, not likely to be due to chance alone.

PWA

abbreviation, Person with AIDS.

pyridoxine (vitamin B6)

a form of vitamin B that helps prevent peripheral neuropathy side effects when used with certain drugs (e.g., isoniazid).

pyrimethamine (Daraprim)

a drug used to treat protozoan infections such as toxoplasmosis. Side effects include bone marrow suppression and allergic skin reactions.

pyrimidine

one of the two types of nucleotide base that make up DNA and RNA. The pyrimidine bases are cytosine, thymine and uracil. See also purine.

## **Q**

QC-PCR

see quantitative competitive polymerase chain reaction.

quadriplegia

paralysis from the neck down, including the trunk and both legs and arms. See also paraplegia.

qualitative

relating to, or expressed in terms of, quality. Qualitative research is based on individual, often subjective, analysis.

QuantiFERON-TB Gold – QuantiFERON assay

QFT is an interferon-gamma (IFN- $\gamma$ ) release assay, commonly known as an IGRA, and is a modern alternative to the tuberculin skin test (TST, PPD or Mantoux). Unlike the TST, QFT is a controlled laboratory test that requires only one patient visit and is unaffected by previous Bacille Calmette-Guerin (BCG) vaccination.

quantiplex HIV RNA assay

see branched-chain DNA assay.

quantitative

relating to, or expressed in terms of, quantity. Quantitative research is based on numerical data.

quantitative competitive polymerase chain reaction (QC-PCR)

a refined, sensitive version of the PCR assay used to detect DNA or RNA using competitive RNA samples for comparison.

quinolinic acid

a naturally occurring toxin in the central nervous system believed to play a role in AIDS dementia complex.

## **R**

radiation

electromagnetic rays, including x-rays and ultraviolet light.

radical

a highly reactive molecule that may pass intact from one compound to another but does not normally exist in a free state. See also free radical.

radioimmunoassay

a procedure for detecting antigens or antibodies using radioactive-labeled complement proteins.

radiology

a branch of medicine concerned with the use of x-rays to diagnose and treat disease.

raltegravir

HIV integrase inhibitor

randomized trial

an experiment arranged to produce a chance distribution of subjects into different treatment or control arms to cancel out the influence of factors that are not under study. With successful randomization, the chance of one individual being placed in a given study arm is independent of the placement of others, and the only differences between the groups are those intended by the experimenter (e.g., different drugs taken).

RANTES

a chemokine protein that affects HIV activity. RANTES is believed to act in conjunction with two other chemokines, MIP-1-alpha and MIP-1-beta.

rational drug design  
the design (often computer-aided) of drugs to interact with specific molecular or cellular targets.

reactivation  
the return of a previously latent (inactive) infection to an active, pathogenic state.

receptor  
a specific protein-binding site on a cell's surface or interior. When chemical messengers bind to receptors, various cellular functions are activated or inhibited. Many drugs exert their effects by binding to receptors and altering normal cellular communication. Viruses enter cells by fusing with receptors on the cell surface, often in conjunction with MHC molecules and/or co-receptors.

rechallenge  
to administer the same substance (e.g., pathogenic organism, drug) a second or subsequent time. Rechallenge may be done after vaccination to determine whether a vaccine was effective.

recombinant  
produced by genetic engineering. Recombinant products are designated by a lower-case r (e.g., rHGH).

recombinant DNA  
genetically engineered DNA (e.g., new DNA produced by joining pieces of DNA from different sources).

recommended daily allowance (RDA)  
the amount of a nutrient that is recommended each day to avoid deficiency diseases. RDA is established by the U.S. Department of Agriculture (USDA) in conjunction with the FDA.

reconstitution  
rebuilding and restoring to functionality (e.g., reconstitution of a damaged immune system).

recrudescence  
a new outbreak or active replication of a pathogenic organism after a period of inactivity.

rectum (adjective rectal)  
the lower part of the large intestine where feces are stored.

red blood cell (RBC)  
see erythrocyte.

refractory  
resistant to treatment.

regimen  
see dosage regimen.

rehydration  
replacement of lost fluids.

Reiter's syndrome (reactive arthritis)

an autoimmune disorder characterized by the simultaneous occurrence of arthritis, urethritis (inflammation of the urethra), and conjunctivitis (inflammation of the outer membrane of the eye). The syndrome may occur following other diseases such as chlamydia or salmonellosis.

relative risk (RR)

a measure of comparative risk of developing a disease or condition. Statistically, RR is the chance that a person receiving an exposure will develop a condition compared to the chance that a nonexposed person will develop the same condition.

remission

an abatement in the severity of disease symptoms; a period of time during which symptoms are reduced or eliminated.

renal

relating to the kidneys.

renal failure

kidney failure.

repletion

replenishment (e.g., of deficient nutrients).

replication

duplication or reproduction.

replicative enzyme

an enzyme that is necessary to the reproductive process. Replicative enzymes of HIV include reverse transcriptase, protease, and integrase.

Rescriptor

brand name; see delaviridine a non-nucleoside reverse transcriptase inhibitor.

rescue medication

a strong, short-acting analgesic given to control acute episodes of breakthrough pain in a patient on a continuous pain management regimen.

reservoir

a site where an infectious agent collects and multiplies (e.g., macrophages and lymph nodes are believed to be reservoirs for HIV).

resistance

the ability of a microorganism to mutate or change its structure in such a way that it loses its sensitivity to a drug; a resistant organism can function and replicate despite the drug's presence. Contrast with susceptible. See also cross-resistance.

resistant bacteria

bacteria that can no longer be killed by a certain medicine.

respiratory

relating to the process of breathing.

reticuloendothelial system

a system that helps the body fight infection and eliminate cellular debris by the action of phagocytic cells (e.g., macrophages), Kupffer cells in the liver, and reticular cells of the spleen, bone marrow and lymph nodes.

retina

a light-sensitive membrane lining the inner eyeball. Images are formed on the retina before being transmitted to the brain on the optic nerve.

retinal detachment



a condition in which a layer of the retina separates from the underlying epithelium, allowing vitreous fluid to seep behind it. The condition may lead to loss of vision.

retinitis  
inflammation of the retina which can lead to blindness. In HIV disease, retinitis is commonly caused by CMV. CMV-related retinitis is considered an AIDS-defining condition in the United States when there is some loss of vision.

retinoic acid (retin-a, tretinoin)  
a form of vitamin A that stimulates rapid cell turnover and is used to treat severe acne. Tretinoin gel is an experimental treatment for Kaposi's sarcoma.

retinopathy  
any non-inflammatory disease of the retina. Retinopathy is common in people with diabetes.

retrospective study  
a study based on the medical records of patients, looking backward in time at events that happened in the past. A retrospective cohort study uses the records of a specific group of patients. Contrast with prospective study.

Retrovir  
brand name; see AZT. Also ZDV. - NRTI

retrovirus  
a retrovirus -- such as HIV -- replicates using an enzyme (reverse transcriptase) to copy RNA into DNA. Most cells have DNA in their natural state and transcribe to RNA (ribonucleic acid) during replication. A retrovirus does things backwards -- RNA, not DNA, is its natural genetic state.

rev  
a gene of HIV; also the protein produced by the gene, which regulates the construction of the structural components of HIV and is necessary for the production of new virus particles.

reverse transcriptase (RT)  
a viral enzyme that allows a retrovirus to translate its genetic material (in the form of RNA) into DNA, which is then integrated into the chromosomes of the host cell.

reverse transcriptase inhibitor (RTI)  
a drug that blocks retroviral replication by interfering with the reverse transcriptase enzyme. RTI drugs are not effective after a cell has already been infected. RTI drugs include nucleoside analogues (e.g., AZT, ddI, 3TC, d4T) and non-nucleoside reverse transcriptase inhibitors (e.g., nevirapine, delavirdine).

reverse transcriptase polymerase chain reaction test (RT-PCR test)  
a sensitive assay of HIV viral load.

REYATAZ  
Atazanavir - PI

rhinitis  
inflammation of the nasal membranes characterized by sneezing, runny nose, and watering eyes. Rhinitis is a common manifestation of an allergic reaction.

rhinovirus  
one of a large family of viruses that commonly cause respiratory illnesses (e.g., the common cold) characterized by nasal congestion and sore throat, but little or no fever.

Ribavirin

A medication used in conjunction with PEGylated interferon to treat hepatitis C.

riboflavin (vitamin B2)  
see vitamin B.

ribonucleic acid (RNA)  
a single-stranded nucleic acid that encodes genetic information. RNA is made up of sequence of 4 chemical building blocks (nucleotides) -- adenine, cytosine, guanine, and uracil. RNA is involved in the transcription of genetic information; the information encoded in DNA is translated into messenger RNA (mRNA), which controls the synthesis of new proteins. RNA takes the place of DNA in retroviruses such as HIV. The presence of HIV RNA in the plasma indicates that the virus is actively replicating.

ribonucleotide reductase  
a viral enzyme which cuts ribonucleotides in order to create deoxyribonucleotides, the building blocks of DNA. Ribonucleotide reductase is essential for DNA replication. Drugs (e.g., hydroxyurea) that inhibit ribonucleotide reductase may enhance the activity of nucleoside analogues drugs.

ribozyme  
RNA with enzymatic activity that can break down (cleave) and piece together (splice) genetic material (DNA or RNA), thus modifying the genetic instructions it carries. Ribozymes (e.g., hairpin ribozyme) are used as "molecular scissors" in genetic engineering.

rifabutin (Mycobutin)  
an oral drug used as prophylaxis and treatment for tuberculosis and MAC disease. Side effects may include rash, fever, gastrointestinal distress, liver and kidney toxicity, and bone marrow suppression leading to leukopenia.

rifampin  
a drug used in combination treatment for tuberculosis and under study for treatment of MAC. Side effects may include orange-colored body fluids, rash, nausea, fever, and liver toxicity.

rifapentine (RPT)  
one of two medicines used to treat latent TB infection.

rilpivirine  
A non-nucleoside reverse transcriptase inhibitor; must be used in combination with other drugs

RNA  
see ribonucleic acid.

roseola  
see exanthem.

RPR test  
rapid plasma reagent, a blood test for syphilis infection. See also FTA-ABS, VDRL test.

RT  
see reverse transcriptase.

RT-PCR  
see reverse transcriptase polymerase chain reaction test.

ru-486 (mifepristone)

a progesterone antagonist drug that has abortion inducing activity and may inhibit HIV replication.

rupture

a break or tear of an organ or soft tissues.

Ryan White Care Act

legislation passed in 1990 to provide funding for services for people with HIV/AIDS. Separate titles of the act provide funds for various geographic regions and specific types of services (e.g., drugs).

## **S**

salmonella septicemia

Recurrent salmonella septicemia is considered an AIDS-defining condition in the United States. Salmonella bacteria are commonly found in raw meat, poultry, eggs, and raw or unpasteurized milk products. The three forms of salmonellosis in humans are typhoid fever, septicemia (blood poisoning), and acute gastroenteritis, which can cause severe diarrhea and death if untreated.

salpingitis

inflammation of the fallopian tubes. See also pelvic inflammatory disease.

salvage therapy

emergency treatment with an experimental drug of an illness that has not responded to standard therapy.

saquinavir (SQV, Invirase, Fortovase)

a protease inhibitor drug, the first in its class to be FDA-approved for the treatment of HIV disease. Current practice favors the use of saquinavir in combination therapy (e.g., with nucleoside analogue drugs) to avoid the development of drug-resistant virus.

sarcoma

a malignant tumor of the skin or soft tissues.

**SARS-2**

**SARS-CoV-2 is a member of a large family of viruses called coronaviruses. These viruses can infect people and some animals. SARS-CoV-2 was first known to infect people in 2019. The virus is thought to spread from person to person through droplets released when an infected person coughs, sneezes, or talks.**

SCID mouse

a mouse that lacks key immune system components. SCID mice are used as animal models in the study of transplantation and immune system disorders. SCID-hu mice have had their absent immune system replaced by human immune system components, allowing their use in the study of human immune disorders. See severe combined immunodeficiency.

sclerosis

a hardening of tissue (e.g., liver, artery walls), due to cumulative damage, mineral deposition, or other causes.

scotoma

and area of blurred or reduced vision.

scrotum

the external pouch underneath the penis that contains the testes.

seborrhea (seborrheic dermatitis)

an overproduction of sebum (oil) by the sebaceous glands leading to an itchy red rash often accompanied by encrusted patches. Seborrhea typically occurs on the skin of the scalp, face, ears, chest, or genitals. Seborrheic dermatitis is believed to be associated with a *Pityrosporum* fungus.

secondary infection

infection with a second or subsequent infectious organism during the course of an initial infection with another organism.

secondary prophylaxis

preventive treatment for a subsequent occurrence (relapse) of a disease. Contrast with primary prophylaxis.

second-line treatment

the second preferred therapy for a particular condition used when the patient fails or cannot tolerate the side effects of first-line treatment.

secretory leukocyte protease inhibitor (SLPI)

a protein found in saliva that binds to white blood cells and blocks HIV infection.

sed rate

see erythrocyte sedimentation rate.

sedative

a drug that reduces mental activity and excitement.

selenium

a metallic trace element that combines with glutathione to form a major cellular antioxidant.

Selzentry

entry inhibitor – brand name of maraviroc

sensitivity

the ability of an organism to be affected by a drug or other agent (e.g., a virus is sensitive to ZDV if ZDV is able to prevent viral replication). Sensitivity also refers to a statistical measure of the accuracy of a screening test, i.e., how likely a test is to label as positive those who have a disease or condition. Contrast with specificity.

sensory ganglion (plural ganglia)

a cluster of nerve cells that connect the sensory periphery (skin, mucous membranes, muscle tissues, tendons, blood vessel walls, internal organ tissue) with the central nervous system.

sensory neuropathy

damage or necrosis of the sensory nerves, resulting in numbness, tingling, or pain in the extremities. Sensory neuropathy is distinguishable from motor neuropathy, which may result in weakness and/or loss of motor coordination.

septic arthritis

infection in a joint.

septicemia (septic shock, sepsis)

the physiological response to the presence of bacteria in the blood. Symptoms include increased cardiac and respiratory rates, a sudden drop in blood pressure, and fluctuations in body temperature. See also septic shock.

Septra

brand name of trimethoprim-sulfamethoxazol (TMP-SMX).

seroconversion

the development of antibodies against a microorganism; the change in a person's antibody status from negative to positive.

serology (adjective serologic)

the branch of medicine concerned with serum, the clear fluid portion of blood; also refers to tests that measure components in the serum, including antibodies and antigens.

seronegative

having a blood test that does not indicate infection with a microorganism (e.g., HIV), either by the presence of antibodies or antigen.

seropositive

having a blood test result which indicates infection with an organism (e.g., HIV). A test may detect either antibodies to an organism (antibody positive) or the organism or its proteins (antigen positive).

seroprevalence

the rate of HIV-infected individuals in a given population as measured by blood antibody tests, that is, the number of infected individuals divided by the total number in the population.

serostatus

the presence or absence of an organism in the blood. Serostatus may be measured by the presence of antibodies against an organism (antibody status) or by the presence of the organism itself (antigen status).

Serostim

brand name; see human growth hormone.

serotonin

a neurotransmitter that has many effects, including blood vessel constriction and smooth muscle stimulation.

serum

the fluid, non-cellular portion of blood that remains after coagulation; lymphatic fluid.

severe combined immunodeficiency (SCID)

a condition, often genetic, in which more than one component of the immune system is compromised or dysfunctional, leaving an individual prone to a range of opportunistic illnesses and cancers.

sexually transmitted disease (STD, venereal disease)

a disease (e.g., gonorrhea, syphilis, chlamydia) transmitted through sexual contact.

shedding

release of infectious particles (e.g., bacteria, viruses) into the environment, for example by sneezing, by fecal excretion, or from an open lesion.

shigellosis

infection caused by Shigella bacteria. Shigellosis can cause digestive disturbances ranging from mild diarrhea to severe dysentery.

shingles

a viral infection -- called herpes zoster by doctors -- consists of painful blisters on the skin that follow nerve pathways.

shock

a condition characterized by the depression of mental and physical functioning, for example due to an injury or an allergic reaction.

side effect

adverse reaction; an allergic response to a drug. Many of the drugs used to fight HIV disease cause adverse reactions in a small number of people. Some side effects are minor and others go away after a few days. A few are truly nasty and require quick medical attention. If you think you are having an adverse reaction to a drug, contact your doctor immediately.

sigmoid

an S-shaped bend in the colon near the rectum.

sigmoidoscopy

examination of the sigmoid colon (the lower transverse part of the colon) with a lighted flexible viewing tube. See also proctoscopy.

simian immunodeficiency virus (SIV)

a viral infection endemic to African green monkeys and able to infect various primates. SIV is similar to HIV-2.

sinus

a hollow cavity. See also paranasal sinuses.

sinusitis

acute or chronic inflammation or infection of the paranasal sinuses (cavities behind the forehead and cheekbones), which may be characterized by nasal congestion and discharge, fever, and headache and may be caused by bacteria, viruses, or fungi, or may be allergy-related. Treatment includes decongestants, antibiotics, and surgical drainage.

smear

a test to see whether there are TB bacteria in your phlegm. To do this test, lab workers smear the phlegm on a glass slide, stain the slide with a special stain, and look for any TB bacteria on the slide. This test usually takes 1 day to get the results.

sodium

a trace element that is essential to many bodily processes including neural transmission.

soluble

capable of being dissolved.

soluble CD4

a recombinant molecule that is analogous to a small portion of the CD4 molecule. Soluble CD4 binds with the HIV gp120 protein and renders it incapable of binding to and infecting cells with the CD4 receptor.

somatostatin (Octreotide Acetate, Sandostatin)

a pituitary hormone that inhibits the production of growth hormone and is used to treat diarrhea.

somatotropin

see human growth hormone.

sorivudine (bv-ara-u, Bravavir)

an antiviral drug used for the treatment of herpes simplex and varicella-zoster virus infection.

spasticity

a condition characterized by increased muscle tone, exaggerated reflexes and increased resistance to passive movement.

specific immunity

immunity directed against specific antigens. There are two types, TH1 or cellular and TH2 or humoral (antibody-based) immunity. Contrast with non-specific immunity.

specificity

a statistical measure of the accuracy of a screening test, i.e., how likely a test is to label as negative those who do not have a disease or condition. Contrast with sensitivity.

speculum

an instrument used to enlarge the opening of a canal or cavity (e.g., vagina, rectum, ear) in order to facilitate examination.

spermicide

an agent (e.g., nonoxynol 9) that immobilizes or kills spermatozoa; spermicides are also often used to kill HIV and other organisms.

sphincter

a muscle that controls the opening of a duct or orifice (e.g., anal sphincter).

spike

a protein protrusion on the envelope of a virus; HIV spikes are composed of the glycoprotein gp120.

spinal tap

see lumbar puncture.

spleen (adjective splenic)

an organ of the lymphoid system located in the abdominal cavity. The spleen is a blood-producing organ in children, and stores and disposes of red blood cells and platelets throughout life. The spleen is a reservoir for macrophages and is an important part of the immune system.

splenectomy

surgical removal of the spleen, which may leave the patient with a compromised immune system. Splenectomy may be performed to treat thrombocytopenia (low platelet levels).

splenomegaly

enlargement of the spleen.

splice

to join together cut edges, especially of genes or other cellular components.

Sporanox

brand name; see itraconazole.

spore

an early, latent reproductive stage of plants, fungi, and some microorganisms.

sporotrichosis

infection with *Sporothrix schenckii*, a diffuse cutaneous disease seen in immunocompromised people.

sputum stain (sputum smear)

a diagnostic test (e.g., for tuberculosis) that uses mucus from the bronchial tubes.

SPV-30

a drug derived from the European boxwood tree that is under study as an anti-HIV therapy. SPV-30 may decrease levels of IL-2 and TNF-alpha.

squamo-columnar junction

the site where squamous cells lining mucous membranes meet columnar cells (e.g., on the uterine cervix). Such an area is a common site for dysplasia.

squamous cell

a flat, thin cell that comprises the surface of the skin and the linings of the esophagus, vagina and rectum.

squamous intraepithelial lesion (SIL)

abnormal growth of squamous cells. SIL particularly refers to abnormal cell changes at the squamo-columnar junction of the uterine cervix. Low-grade SIL is considered a precancerous condition. See also cervical intraepithelial neoplasia.

standard deviation

a statistical measure of variance. Ninety-five percent of a range of values lie within 2 standard deviations of a mean value.

standard of care

the level of care which all persons with a particular illness should receive; the level below which care would be considered substandard.

standard therapy

a therapy that is FDA-approved for a specific condition and is widely used as first-line treatment for that condition.

Staphylococcus

a type of bacteria that cause various infections. Staphylococcus aureus is commonly present on the skin and mucous membranes, especially those of the nose and mouth; it can cause pus-containing lesions such as boils, carbuncles and abscesses. Other strains are associated with food poisoning and toxic shock syndrome.

statistical significance

the probability that an observed outcome of an experiment or trial is due to chance alone. In general, a result of a clinical trial is considered statistically significant if there is a less than 5% probability that the difference observed would occur by chance alone if the treatments being compared were equally effective (e.g., a p-value of less than 0.05).

stavudine

see d4T.

STD

abbreviation, sexually transmitted disease.

stem cell

a precursor cell from which blood cells are derived. As they mature, stem cells evolve into various types of red and white blood cells and platelets. Stem cells are located in the bone marrow, the site of blood cell production. Stem cells divide rapidly and are vulnerable to chemotherapy and radiation.

stenosis

narrowing or tightening of an opening or passage in the body.

steroid

a natural occurring compound (fat-soluble and having a 17-carbon-atom ring as a basis), including many hormones and vitamin precursors.



Stevens-Johnson syndrome

an unusual, severe reaction characterized by blistering and sloughing of the mucous membranes; the visceral organs may also be involved, and the condition can be fatal. The syndrome may result from the use of certain medications such as TMP-SMX.

stomatitis

a swelling of the throat. This is an adverse reaction to some drugs, especially ddC.

strain

a specific genetic variant of a particular organism. Many microorganisms have stronger and weaker strains, drug-sensitive and drug-resistant strains, etc. See also subtype.

streptomycin

an antibiotic used in combination therapy for tuberculosis and other infections. Side effects include nausea, dizziness, kidney toxicity, and hearing loss.

STRIBILD

elvitegravir + cobicistat + tenofovir disoproxil + emtricitabine

subcortical

pertaining to structures in the interior of the brain. Subcortical dementia is a loss of mental, physical, and/or emotional function due to organic disease of the brain's deep structures.

subcutaneous (SQ)

an drug injection given just under the skin.

subgroup analysis

the selection of a smaller group (e.g., based on demographic characteristics, clinical status) out of a larger study for further analysis.

sublingual

under the tongue.

subtype (clade)

a phylogenetically distinct strain of a microorganism. There are at least 11 subtypes of HIV-1 classified into 2 groups: group M (containing subtypes A through J) and group O. Subtype B is predominant in the U.S. There are 5 known subtypes of HIV-2 (A-E). See also strain.

sulfa drug (sulfonamide)

a class of sulfur-containing antibiotic drugs (e.g., sulfadiazine), which cause sensitivity or adverse reactions in many people.

superantigen

a viral or bacterial antigen that triggers an immune response from a large number of immune cells (e.g., T-cells) which express a variety of different major histocompatibility (MHC) molecules.

superoxide dismutase

a naturally occurring cellular antioxidant that is part of the mechanism by which immune system cells kill or deactivate invading microorganisms.

suppository

a tablet or troche that is inserted into the rectum or vagina.

suppression

the cessation of detectable viral replication in a person's blood.

surrogate markers

evidence of a condition. The most common HIV tests look for HIV antibodies instead of the actual virus. Those antibodies (or footprints) indicate the virus is present. Surrogate markers for HIV disease may be virologic (e.g., viral load), immunologic (e.g., CD4 cell count), or clinical (e.g., weight loss). Surrogate markers are used when they are easier to find than the actual organism.

susceptible

vulnerable to or potentially able to contract a disease. Also refers to a microorganism that is vulnerable to the effects of a drug. Contrast with resistant.

suspension

a solution; a substance dissolved in a liquid.

Sustiva

brand name; see efavirenz.

SYMFI and SYMFI LO

efavirenz + lamivudine + tenofovir disoproxil

symptom (adjective symptomatic)

any perceptible change in the anatomy or function of the body that indicates the presence of a disease or condition.

SYMTUZA

darunavir + cobicistat + emtricitabine + tenofovir alafenamide

synapse

a small gap between neurons or between neurons and effector cells (e.g., muscle cells) where neural transmission takes place. Typically, a neurotransmitter is released into the gap (synapse) by a neuron and taken up by cells on the other side.

syncytium (plural syncytia)

a mass or clump of cells that fuse together to form one giant cell. In HIV infection syncytium formation may lead to direct cell-to-cell infection. Strains of HIV are classified as either syncytium-inducing (SI) or non-syncytium-inducing (NSI). SI strains tend to infect T-cells, whereas NSI strains tend to infect macrophages.

synergism (synergy)

the action of two or more substances to create an effect that none of the individual substances are capable of. For example, two drugs have synergism when one of the drugs makes the other drug more effective.

syngenic

refers to a transfer of blood or tissues from an individual with the same genotype (i.e., an identical twin). Contrast with allogenic.

syphilis

an STD caused by the spirochete bacterium *Treponema pallidum*. Stages of syphilis are primary (a non-painful chancre in the mouth or anogenital area), secondary (a generalized rash, including the palms and soles, which occurs several weeks to a year later), a dormant stage in which the spirochetes remain in the body without causing symptoms, and tertiary (which may affect many organs including the brain, leading to dementia [neurosyphilis] and death). In immunocompromised persons, syphilis may progress more rapidly and be resistant to treatment. Penicillin is the usual treatment.

systemic

affecting the whole body. Contrast with localized.

systemic lupus erythematosus

an autoimmune disease of unknown cause characterized by swelling in many parts of the body, leading to blood vessel disorders, skin lesions, arthritis, nerve dysfunction, and kidney dysfunction.

## **I**

### T cells

White blood cells that play an important part in the immune system. There are three different types of T cells, each of which has different subsets. The commonly measured T cells are helper T cells, killer T cells, and suppressor T cells.

### T4 cell

see CD4 cell.

### T8 cell

see CD8 cell.

### T-20

fusion inhibitor, see Fuzeon

### tachycardia

very rapid heartbeat.

### Tagamet

brand name; see cimetidine.

### tat

transactivator of transcription, a gene of HIV that plays a role in viral replication by regulating the transcription of viral DNA into RNA; also the protein produced by that gene.

### tat inhibitor

a drug that inhibits HIV replication by interfering with the tat protein.

### TB

abbreviation, tuberculosis. a bacterial infection.

### TB blood test

a test that uses a blood sample to find out if you are infected with TB bacteria. The test measures the response to TB proteins when they are mixed with a small amount of blood. Examples of these TB blood tests include QuantiFERON®-TB Gold In-tube (QFT-GIT) and T-Spot®.TB test.

### TB disease

an illness in which TB bacteria are multiplying and attacking a part of the body, usually the lungs. The symptoms of TB disease include weakness, weight loss, fever, no appetite, chills, and sweating at night. Other symptoms of TB disease depend on where in the body the bacteria are growing. If TB disease is in the lungs (pulmonary TB), the symptoms may include a bad cough, pain in the chest, and coughing up blood. A person with TB disease may be infectious and spread TB bacteria to others.

### TB skin test

a test that is often used to find out if you are infected with TB bacteria. A liquid called tuberculin is injected under the skin on the lower part of your arm. If you have a positive reaction to this test, you probably have TB infection. Other tests will be needed to find out if you have latent TB infection or TB disease.

Telbivudine

A medication used to treat hepatitis B in adults.

Tuberculin or PPD

a liquid that is injected under the skin on the lower part of your arm during a TB skin test. If you have latent TB infection, you will probably have a positive reaction to the tuberculin.

T-cell (t-lymphocyte)

a white blood cell derived from the thymus that contributes to the cell-mediated immune response. There are 3 major types of T-cells: T-helper (CD4 cells), T-suppressor (CD8 cells) and T-killer (cytotoxic T-lymphocytes or CTL). Contrast with B-cell.

T-cell growth factor

see interleukin-2.

T-cell receptor

a structure made up of several proteins located on the surface of T-cells. The receptor recognizes antigens bound to major histocompatibility (MHC) molecules and triggers various cellular functions important to immune responses.

TDF

see tenofovir disoproxil fumarate

TCID<sub>50</sub>

50% tissue culture infective dose. The level of dilution of a virus at which half of a series of laboratory wells contain active, growing virus.

telomere

a complex of repetitive DNA sequences that cap the ends of chromosomes. Telomeres play a role in cellular replication via the telomerase enzyme, which helps determine whether cells are able to replicate. Telomeres shorten each time a cell divides, and signal cell senescence (loss of function) when they reach a critical length.

tenofovir disoproxil fumarate (TDF, Viread)

a nucleotide reverse transcriptase inhibitor approved by the FDA for HIV treatment in combination with other anti-HIV drugs.

testosterone

a steroid hormone produced by the testes and adrenal glands. Testosterone is required for sperm production, the development of the male reproductive organs, and the emergence of male secondary sexual characteristics. The hormone is also required for the buildup of lean muscle mass. Testosterone levels are often low in HIV positive men; the hormone is under study as a therapy for wasting syndrome. Possible side effects include acne, mood swings, change in sex drive, liver toxicity, prostate enlargement and masculinization in women.

tetracycline (Achromycin, Sumycin)

a broad spectrum antibiotic drug used to treat bacterial infections.

TH naive

see naive T-cell.

TH0 response

an immune response that involves aspects of both TH1 and TH2 branches of the immune system. TH0 cells produce cytokines that are characteristic of both TH1 and TH2 response.

### TH1 immune response

one of the branches of the immune system. The TH1 response involves a subset of CD4 lymphocytes called TH1 cells that secrete IL-1, IL-2 and gamma interferon, and which enhance the cell-mediated immune response (action of CTL and natural killer cells) and inhibit TH2 cell activity and the humoral immune response. TH1 activity is especially effective against agents that have infected cells (e.g. cell-associated HIV).

### TH2 immune response

one of the branches of the immune system. The TH2 response involves the TH2 subset of CD4 cells that secrete IL-4 and IL-10, and which enhance humoral immune response (antibody production) and inhibit TH1 activity and cell-mediated immune response. TH2 activity is most effective against microorganisms that are free-floating in the bloodstream (e.g., cell-free HIV).

### thalamus

one of the basal ganglia (a cluster of nerve cell bodies) deep in the brain that serves as a center for the relay of sensory information (especially pain and pleasure information) and plays a role in arousal.

### thalidomide (Synovir)

a sedative drug under investigation for treatment of aphthous ulcers, wasting syndrome and other conditions in persons with HIV disease. Thalidomide has been shown to reduce levels of tumor necrosis factor-alpha (TNF-alpha) in vitro. The drug has teratogenic effects and may cause severe birth defects; other side effects include skin rashes and peripheral neuropathy.

### THC

see delta-9 tetrahydrocannabinol.

### T-helper cell

see CD4 cell.

### T-helper cell (T4 cell, CD4 cell)

A subset of T cells. Physicians regularly measure T-helper cell counts in HIV positive people. The normal range for T-helper cells is 480-1800, but may vary.

### therapeutic vaccine (treatment vaccine)

a vaccine given after infection to reduce or arrest disease progression. Therapeutic vaccines are given to produce or reinforce an immune response in a person who is already infected. Contrast with preventive vaccine.

### therapeutic window (therapeutic ratio)

the range of dosages of a drug that achieve clinical efficacy but do not cause intolerable side effects; the difference between the minimum and maximum effective doses.

### thrombocyte (platelet)

a type of blood cell that facilitates normal blood clotting.

### thrombocytopenia

an abnormally low number of thrombocytes (platelets); the condition may result in abnormal bleeding and bruising. The normal platelet range is 150,000-300,000 per millimeter of blood. Thrombocytopenia may be controlled by the administration of certain cytokines or by removal of the spleen.

### thrombosis

formation or presence of a clot within a blood vessel.

thrush

see candidiasis.

thymic factor (thymic hormone)

a hormone or cytokine (e.g., thymodulin, thymopentin, thymostimulin) produced by the thymus gland that is involved in the regulation of immune function.

thymic humoral factor

a peptide hormone isolated from calf thymus under study as an immunomodulatory treatment for HIV disease.

thymidine kinase

an enzyme that catalyzes the transfer of phosphate groups and is necessary for the transformation and metabolism of nucleoside analog drugs.

thymine (t)

one of the pyrimidine nucleic acid bases that make up nucleotides, the building blocks of DNA (but not RNA). The antiviral drugs AZT and d4T are nucleoside analogs associated with thymine.

thymus (adjective thymic)

a lymphoid organ located in the chest behind the sternum. The thymus is a source of T-lymphocytes in children, but generally shrinks during adolescence. The thymus is the site of T-lymphocyte differentiation, where the cells learn to recognize antigens. The thymus produces some 30 hormones or thymic factors (e.g., thymodulin, thymopentin, thymostimulin) that are involved in the regulation of immune function.

thyroid gland

an organ at base of the neck that produces thyroxin and other hormones.

thyroid stimulating hormone (TSH)

a pituitary hormone which stimulates the growth and function of the thyroid gland.

TIBO derivative

a synthetic compound derived from molecules similar to valium and related tranquilizers. TIBO derivatives have been shown to have potent anti-HIV-1 activity by blocking the production of reverse transcriptase.

tine test

a skin test superseded by the more accurate PPD test for TB.

tinnitus

an abnormal ringing or buzzing in the ears. Tinnitus may be a side effect of certain medications.

titer (titre)

a standard measure of the strength or concentration of a component per volume of a solution.

titration

the measurement of volume; often used to refer to the determination of a drug dosage.

TIVICAY

Dolutegravir – integrase inhibitor

T-killer cell (cytotoxic T cells)

a type of white-blood cell that kills foreign organisms after being activated by T-helper cells.

TNF

see tumor necrosis factor.

tolerance

a condition in which the body becomes accustomed to an agent (e.g., drug) so that the previous dose no longer produces the desired effects and a progressively larger dose is needed to achieve a previously observed effect. See also cross-tolerance.

topical

pertaining to the surface of the skin; a medication applied to the skin.

topotecan

a topoisomerase inhibitor drug under study as an anti-HIV therapy.

toxicity (adjective toxic)

the quality of being poisonous or harmful; often used to refer to side effects of drugs.

toxicology

the study of the harmful effects of substances on the body, including the level of toxicity, the mechanism by which toxicity occurs and how it can be controlled.

toxicosis

a pathological condition resulting from poisoning.

toxin

a harmful or poisonous agent.

toxoplasmosis (toxoplasma)

an opportunistic infection caused by the microscopic protozoan *Toxoplasma gondii*, found in undercooked meat and cat feces. Symptoms may include headache, lymphadenopathy, malaise, muscle pain and fever. A common manifestation of the disease toxoplasmic encephalitis (cerebral toxoplasmosis), characterized by brain swelling, dementia, confusion, lethargy, seizures and coma; the eyes, heart and lungs may also be affected. Toxoplasmosis is treated with pyrimethamine, usually in combination with other drugs; TMP-SMX may be used as prophylaxis. This is considered an AIDS-defining condition in the United States.

trace element

a substance needed in very small amounts for the proper functioning of the body. There are 7 known trace elements: chromium, copper, cobalt, iodine, iron, selenium and zinc.

trachea

the windpipe; the tube that extends from the oral cavity into the chest, where it branches into the 2 major bronchial tubes.

tract

an organ system that allows the body to interact with the outside world (e.g., gastrointestinal tract, respiratory tract); also a bundle of nerve fibers (e.g., extrapyramidal tract).

transactivator of transcription

see tat.

transaminase (aminotransferase)

an enzyme (e.g., SGOT [AST], SGPT [ALT]) produced by the liver that catalyzes the transfer of amino acids. Abnormally high levels in the blood indicate liver disease or damage (e.g., hepatitis, drug-related liver toxicity).

transcription

the first step in protein synthesis and replication. Genetic information encoded in DNA is copied to messenger RNA, which is used as a template for the production of new proteins.

transcutaneous (transdermal)  
able to be absorbed by or to pass through intact skin; administered through the skin.

transdominant mutant  
genetically engineered, non-functional copies of HIV viral proteins that compete with functional HIV for the various molecules needed for viral replication.

transduced autologous fibroblasts (taf)  
a type of gene therapy for HIV disease. Fibroblasts (collagen-producing cells) are removed from the body, genetically altered and reinfused into the body in an attempt to enhance the anti-HIV immune response.

transduction  
the introduction of a transferred gene into a cell via genetic engineering techniques (e.g., a virus vector, liposomes).

transformation zone  
the area of the cervix where squamous cells and columnar cells meet; a common site of dysplasia.

transgenic  
pertaining to a chromosome or an organism into which genes from another individual have been inserted.

treatment arm  
a group of participants in a research trial who all receive the same treatment. Contrast with control arm.

Trental  
brand name; see pentoxifylline.

treponema pallidum  
the spiral-shaped bacteria that causes syphilis.

tretinoin (Retin A)  
see retinoic acid.

triazole  
seeazole drug.

trichomoniasis  
infection with the protozoan parasite *Trichomonas vaginalis*. Trichomoniasis may be asymptomatic, especially in men; in women symptoms may include vaginal irritation, itching, discharge and painful urination.

triglycerides  
fat in the blood. A high triglyceride blood test can indicate liver or pancreas problems. A low result can indicate malnutrition.

trimethoprim-sulfamethoxazole (tmp-smx, bactrim)  
an antibiotic drug combination. TMP-SMX is the preferred first-line therapy for prophylaxis and treatment of PCP, and may be effective against other OI such as toxoplasmosis. Side effects include fever, nausea, diarrhea, photosensitivity, skin rash and neutropenia. Desensitization to the drug is often possible using slowly increasing dosages.

trimetrexate (Neutrexin)



an antifolate drug used as salvage therapy for people with PCP who fail standard treatments. Trimetrexate can cause severe bone marrow toxicity, and is typically used in conjunction with leucovorin to protect against anemia.

Triumeq

dolutegravir + abacavir + lamivudine

Trizivir

brand name; combination nucleoside analogue abacavir sulfate/lamivudine/zidovudine tablet.

TROGARZO

Ibalizumab – monoclonal antibody

tropism

affinity for or the tendency to move toward something; the specific attraction of a virus or other microorganism to a particular host tissue, determined in part by host cell surface markers (e.g., some HIV strains have a tropism for CD4 cells).

trough level

the lowest concentration of a drug reached in the body between dosages.

Truvada

NRTI - Brand name of Tenofovir, Disoproxil and emtricitabine

T-suppressor cell

a type of T-cell bearing the CD8 surface marker. T-suppressor cells help to regulate and control immune system activity by inhibiting antibody production and CTL activity.

tubercle

a granulomatous, spherical lesion containing a concentration of white blood cells, characteristic of infection with Mycobacterium tuberculosis.

tuberculin skin test

a skin test for exposure to tuberculosis. See PPD test.

tuberculosis (TB)

an infectious disease caused by Mycobacterium tuberculosis that typically affects the lungs, but may also occur in other organs (extrapulmonary TB). Transmission generally occurs through inhalation of aerosolized sputum droplets. A combination of 4 chemotherapeutic drugs is standard therapy. Multidrug-resistant tuberculosis (MDR-TB) is resistant to several standard drugs and requires more aggressive treatment.

tubo-ovarian abscess

a inflammation of the fallopian tube and the companion ovary, characterized by swelling and accumulation of pus.

tumor

a neoplasm; a new growth of rapidly proliferating cells. Tumors may be either benign or malignant (cancerous).

tumor necrosis factor (TNF, cachectin)

a cytokine, produced by activated monocytes and macrophages, that can destroy tumors. When chronically elevated (as may occur in HIV disease), TNF-alpha may lead to fever, anorexia, hypermetabolism and wasting. TNF-alpha may block the production of enzymes that digest fats, leading to the breakdown of muscle tissue. In laboratory tests TNF-alpha has been shown to stimulate HIV replication. Some drugs

(e.g., thalidomide, ketotifen) reduce TNF-alpha levels. TNF-beta is released by CD4 and CD8 T-cells when stimulated by an antigen. VERIFY TNF-BETA.

Tybost

Cobicistat – PK enhancer

## U

ulcer (ulceration)

an open sore of the skin or mucus membrane characterized by sloughing of inflamed dead tissue.

ultrasonography (ultrasound)

a method of visualizing the internal parts of the body, or a fetus within the uterus, using sound waves.

ultraviolet (UV)

electromagnetic radiation beyond the violet end of the visible light spectrum. UV radiation induces tanning and sunburn of the skin, and is associated with the development of skin cancer. UV is used to kill Mycobacterium tuberculosis in hospitals.

upregulation

an increase in the rate at which a process occurs, a substance is released, etc.

uracil (u)

one of the pyrimidine nucleic acid bases that make up nucleotides, the building blocks of genetic material. Uracil takes the place of thymine (T) in RNA.

ureaplasma

a type of gram-negative bacteria found in the human genitourinary tract, throat and/or rectum. Ureaplasma may be sexually transmitted and is a cause of nongonococcal urethritis. Left untreated infection can lead to inflammation of the prostate in men and pelvic inflammatory disease in women.

urethra

the canal that carries urine from the bladder to the outside of the body.

urethritis

inflammation of the urethra.

uric acid

a substance found in the blood and urine that is a by-product of protein metabolism.

urticaria

itchy, raised, swollen areas on the skin or mucous membranes, often a manifestation of an allergic reaction. (hives)

uterus

the muscular pelvic organ of the female reproductive system in which the fetus develops. (syn. womb)

uveitis

an inflammation of the membranes (uvea) of the eye. Anterior uveitis is an inflammation of the frontal membranes (e.g., the iris and the choroid). The condition is characterized by pain and redness.

## V

### V3 loop

part of the gp120 envelope protein of HIV-1. The V3 loop is believed to trigger a strong antibody response and is the basis of several candidate anti-HIV vaccines; however, the region is extremely variable among HIV strains. (syn. v3 region)

### vaccine

a preparation that contains an infectious agent or its components which is administered to stimulate an immune response that will protect a person from illness due to that agent. A therapeutic (treatment) vaccine is given after infection to reduce or arrest disease progression. A preventive (prophylactic) vaccine is to prevent infection. Agents used in vaccines may be whole-killed (inactive), live-attenuated (weakened), or artificially manufactured.

### vaccinia

a virus used as a vaccine against smallpox. Vaccinia is used as a live virus vector in some candidate anti-HIV vaccines.

### vagina

the passage from the uterus to the outside of the body, part of the female reproductive system; the birth canal.

### vaginal candidiasis

infection of the vagina and/or vulva with a yeast-like fungus, typically *Candida albicans*. Symptoms include pain, itching, redness, and a white discharge. It is more common and more difficult to treat in HIV-positive women; recurrent episodes may be an early sign of HIV infection. (vulvovaginal candidiasis, "yeast infection")

### vaginitis

inflammation of the vagina, often characterized by redness, irritation, itching, and discharge and may be caused by bacteria, *Candida*, hormonal changes.

### valacyclovir (Valtrex)

a prodrug of acyclovir used as an antiherpes treatment. Valacyclovir has significantly greater bioavailability than acyclovir, and thus is effective at lower doses.

### varicella-zoster virus

a herpesvirus that initially causes chickenpox (varicella), usually in children. VZV may lie dormant within the nerves for years and reactivate later to cause herpes zoster (shingles), especially in immunosuppressed individuals. (vzv, human herpesvirus 3)

### vascular hyperplasia

excessive growth of the cells that form blood vessels, causing clusters of incomplete vessels in the skin or internal organs.

### vasculitis

inflammation of the blood vessels.

### vasodilation

dilation of the blood vessels.

### VaxSyn

a candidate anti-HIV vaccine based on the gp160 protein.

### vector

an agent used as a vehicle for transfer. A disease vector is an agent that transfers a pathogen from one organism to another (e.g., an insect). A viral vector is an

engineered virus used to introduce genes into cells, or a live virus used as an antigen delivery vehicle in a vaccine.

ventricle  
a partition, sac or cavity (e.g., the fluid-filled spaces in the center of the brain, the chambers of the heart).

Videx  
brand name; see ddI. Also Videx EC (enteric coated)

vif  
a gene of HIV; also the protein produced by that gene.

vinblastine (Velban)  
a chemotherapeutic drug used to treat various malignancies including Kaposi's sarcoma. Side effects include bone marrow suppression.

vincristine (Oncovin)  
a chemotherapeutic drug used to treat various neoplastic (cancerous) conditions including Kaposi's sarcoma and lymphoma. Side effects include peripheral neuropathy.

Viracept  
brand name; see nelfinavir.

viral load (viral burden)  
a group of tests that measure the amount of HIV in the blood. The two most commonly used viral load methods are PCR and bDNA.

viral turnover  
the rate at which a virus dies and is regenerated.

Viramune  
brand name; see nevirapine.

Viread  
brand name; see tenofovir disoproxil fumarate

viremia  
the presence of virus in the blood.

virion  
a complete virus particle that exists outside of a host cell.

virology  
the study of viruses and diseases caused by viruses.

virucide  
a substance that can kill or destroy viruses. Contrast with virustatic.

virulence  
aggressiveness, ability to cause disease. (adjective virulent)

virus  
a submicroscopic organism that can replicate only when it is inside another cell.

virustatic  
a substance that has the ability to inhibit growth and/or reproduction of viruses without killing them. Contrast with virucide.

viscera  
the major internal organs of the body (e.g., intestines, liver). (adjective visceral)

Vistide  
brand name; see cidofovir.

vitamin

an organic substance that acts as a coenzyme and/or regulator of metabolic processes. Most of the 13 known vitamins present in foods or supplements; some are produced within the body.

vitamin A

a fat-soluble vitamin with antioxidant properties essential for proper immune system functioning including lymphocyte development and maturation. Vitamin A deficiency is associated with impaired mucosal immunity and increased risk of vertical transmission of HIV. Excess vitamin A may be toxic to the liver. The vitamin is synthesized from beta carotene within the body.

vitamin B

a complex of several important vitamins including B1 (thiamin), B2 (riboflavin), B6 (pyridoxine), B12 (cobalamin). Vitamin B1 is needed for nerve signal transmission; deficiency may lead to neuropathy. Vitamin B2 is needed for the metabolism of amino acids; deficiency can result in eye and mouth pain and mental changes. Vitamin B6 is necessary for the production of many enzymes and chemical messengers (e.g., neurotransmitters); deficiency is linked to neuropathy and mental depression, skin rashes, nausea and seizures. Vitamin B12 is needed for red blood cell production and DNA synthesis and repair; deficiency may result in anemia, neurological dysfunction, neuropathy and changes in mental status.

vitamin C (ascorbic acid, ascorbate)

an antioxidant vitamin that protects cells from oxidative damage. Vitamin C is necessary for the production of collagen (e.g., for wound healing), hormones and neurotransmitters; it may have a role in fighting infection. Deficiency results in poor healing, easy bruising and anemia.

vitamin D

a vitamin that is important for mineral metabolism and which may play a role in immune function. Vitamin D is manufactured within the skin when exposed to sunlight. Deficiency is uncommon, and may result in weak bones and kidney stones.

vitamin E (tocopherol)

an antioxidant vitamin that protects cell membranes from oxidative damage. Deficiency is rare, and may lead to peripheral neuropathy, poor balance and reduced reflexes. Alpha tocopherol and gamma tocopherol are 2 forms of the vitamin.

vitamin K

a fat-soluble vitamin, available in foods and manufactured by intestinal bacteria, that is essential for blood coagulation and important in certain energy transfer reactions.

vitreous humor

a transparent, colorless mass of soft, gelatinous material that fills the back portion of the eye, from the lens in front to the retina in back.

vpr

a gene of HIV; also the protein produced by the VPR gene.

vpu

a gene of HIV; also the protein produced by that gene.

vulva

the external female genitalia, including the clitoris and the inner and outer labia surrounding the urethral and vaginal openings.

## **W**

washout period

the time it takes for a drug to be cleared from the body.

wasting syndrome

severe weight loss

water soluble

capable of being dissolved in water; compounds are easily excreted by the body.

WBC

abbreviation, white blood cell. See leukocyte.

Western blot

a test used to determine HIV. It is a blot consisting of a sheet of cellulose containing spots of protein for identification by a molecular probe. This test looks for HIV antibodies -- a protein produced by the immune system as it tries to fight the HIV virus.

whitlow

an infection of the fingers caused by herpes simplex virus, usually the result of touching oral and/or genital lesions.

whole-killed virus

a complete inactivated virus is used to provoke an immune response.

WIHS

Women's Interagency HIV Study.

wild-type

the normal, typical phenotype of a virus or other organism before genetic mutation, manipulation or in vitro replication takes place.

withdrawal

a condition that results from the abrupt discontinuation of a dependency-inducing drug, characterized by symptoms such as sweating, tremors and nausea and pain.

World Health Organization (WHO)

an organization of the United Nations concerned with worldwide public health.

## **X**

xenogenic

refers to a graft or transplant from a foreign species(e.g., baboon to human bone marrow transplant). (xenotransplant).

xerosis

dry skin.

xerostoma

dry mouth.

## Y

yeast

see Candida.

yeast infection

see vaginal candidiasis.

## Z

zalcitibine (Hivid)

see ddC

Zerit

brand name; see d4T, stavudine

Ziagen

brand name; see abacavir

zidovudine (Retrovir) see AZT