

HIV/AIDS
REFERENCE
LIBRARY
FOR NURSES
VOLUME 1

BASIC
INFORMATION ON
AIDS



WORLD HEALTH ORGANIZATION
Regional Office for the Western Pacific
Manila

HIV/AIDS Reference Library for Nurses

***BASIC INFORMATION
ON AIDS***

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**World Health Organization
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FOREWORD

The continuing increase in HIV infection has brought a new dimension to some of the most complex problems in our health delivery services and social systems and has emphasized the need for a structured and consistent system of control and protection, as well as care of the people with HIV infection.

The World Health Organization Global AIDS Strategy has established principles for national and international HIV prevention and control based firmly on a knowledge of virology and epidemiology, and derived from broad practical experience with infectious disease control programmes. The Global AIDS Strategy provides the necessary framework within which individual countries can develop strategies relevant to their particular needs.

There is a crucial and ongoing need for nursing services to respond to the health needs presented by the HIV pandemic. Nurse managers and nurse educators must participate actively in health policy formulation and planning to organize a framework for the prevention and control of HIV infection. Such a comprehensive plan requires intervention in three distinct areas: human resources management, community development, and provision of health and social services.

This introductory volume outlines important facts about AIDS and HIV infection and describes its clinical manifestations and modes of transmission. It also includes a glossary of terms frequently used in the field of HIV/AIDS. As key members of the health care team, nurses at all levels must work with communities and other health professionals to prevent the spread of HIV infection. The World Health Organization recognizes that the HIV pandemic challenges nurses to respond with energetic commitment and increased professional skills.



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Regional Director

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This series has benefited from the expertise and dedication of many nurse researchers, writers, educators and administrators who developed much of the material, as well as consultants and participants to several WHO Western Pacific Regional workshops in 1988 and 1989.

The WHO Regional Office for the Western Pacific HIV/AIDS Reference Library for Nurses was the result of efforts by nurses in the Western Pacific Region and other health care workers around the world to stop the spread of HIV infection through the improvement of their understanding of the problem, its control and management.

It is our hope that these books will contribute to nursing services in the prevention and control of AIDS throughout the Western Pacific Region.

1. INTRODUCTION

The global pandemic of human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS) is a health problem of extraordinary scale and complexity. It presents a variety of social, ethical, legal and technical problems which must be addressed. In order to appreciate and understand these larger issues, a knowledge of the basic concepts and key terms associated with HIV infection/AIDS is essential. The purpose of this book is to provide such background information and to create a foundation for the further development of professional skills in the areas of HIV prevention and clinical care.

A glossary is included to explain the terms used in this overview. When studying the information, the reader may wish to refer to the glossary to facilitate comprehension of the text. It is through learning this basic information that nurses will be able to develop the knowledge necessary to meet the challenges of preventing HIV transmission and caring for those with HIV infection and AIDS.

Important facts

- **AIDS is caused by a virus known as human immunodeficiency virus (HIV).**
- **Persons infected with HIV often have no symptoms of the disease and can therefore infect others without knowing it.**
- **For every person diagnosed with AIDS, there are many others who have HIV infection without knowing it.**
- **It is not known how many of the people who are infected with the virus will develop AIDS, but it is estimated that 25 to 50 per cent will develop AIDS within five to ten years after infection with HIV.**
- **The mortality rate is very high (50 per cent of adults diagnosed with AIDS die within 18 months after being diagnosed). For children, the survival period is shorter.**
- **There is at present no cure or vaccine.**
- **Prevention is through education. Nurses have a clear responsibility to:**
 - **educate about modes of transmission;**
 - **educate about prevention of sexual and blood-borne transmission.**

2. AIDS

AIDS (acquired immune deficiency syndrome) is caused by a retrovirus, the human immunodeficiency virus, which attacks and weakens part of the body's immune system leaving the person vulnerable to a variety of life-threatening infections and cancers.

AIDS stands for:

Aquired - means that it is the result of contact with a source external to the person.

Immune

Deficiency - describes the condition which impairs the body's ability to protect itself against disease.

Syndrome - a group of signs or symptoms which result from a common cause or appear in combination to present a clinical picture of a disease.

3. HIV

As its name implies, HIV is a virus. HIV is considered a retrovirus because it carries its genetic material in the form of a single-stranded RNA (ribonucleic acid) and uses an enzyme, RT (reverse transcriptase), to form a double stranded DNA (deoxyribonucleic acid) copy of its viral genome (full set of genes). The development of assays sensitive enough to detect the presence of the enzyme RT was crucial to the identification of a retrovirus as the causative agent of AIDS.

The retrovirus enters the host cell by attachment to a specific cell receptor (Figure 1). In the case of HIV, the cell receptor is a molecule on the surface of the T 4 lymphocyte, which forms part of the body' s immune system. Once in the interior of the cell, this viral enzyme (RT) is used to transform single stranded RNA into double stranded DNA. This viral form or provirus is then integrated into the genetic code of the host cell and through a series of steps manufactures new viruses which are released to the exterior of the cell by a process known as budding.

What was once considered a period of quiescence or latency, the period from the initial flu-like episode to the development of constitutional symptoms, has more recently been discovered to be a period of increasing immune system degradation. Antibody production requires a signal from CD 4 cells which themselves become infected when they enter the lymph nodes thereby causing further deterioration of the immune system in its ability to defend the host. There is no known treatment for eliminating retroviruses; the current treatments simply hold the virus in check. When such procedures are no longer effective, viral replication proceeds leading to the destruction of vital aspects of the immune system and the occurrence of life-threatening diseases (Figure 2). Even if therapy were effective in stopping viral replication, the concern about reconstitution of the immune system remains.

Figure 1. A virus must attach itself to a host cell and use its equipment to reproduce more viruses

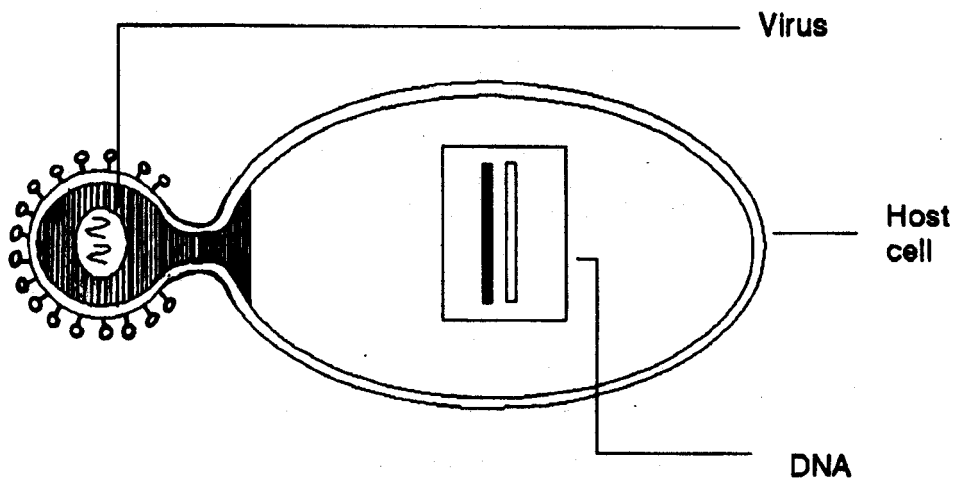
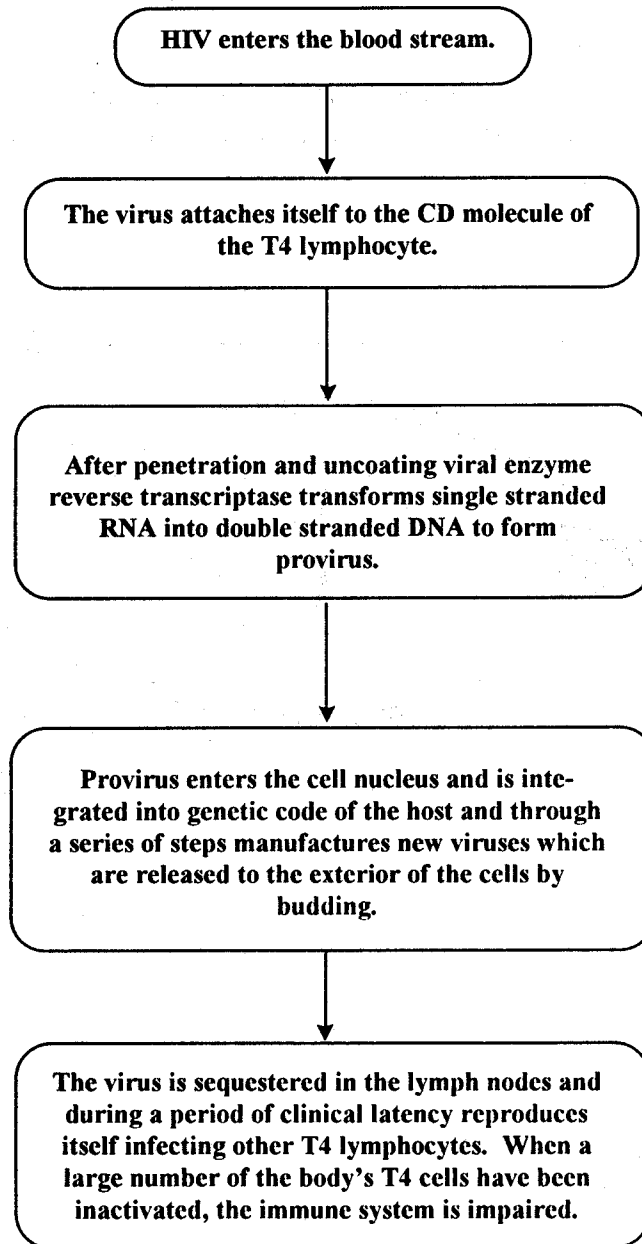


Figure 2. How HIV affects the Immune System



4. CLINICAL PICTURE OF HIV INFECTION

AIDS is the last stage in the spectrum of events in HIV infection. Once the virus enters the body, it is followed in three to six weeks in 50 to 70 per cent of people by an acute mononucleosis or flu-like infection termed a "viremia". The signs of this infection or viremia are sore throat, fever, fatigue and rash. This illness may not be remarked upon since it is similar to other types of brief illness. After two weeks to six months following initial infection, HIV antibodies begin to appear in the blood. Unlike their function in other illnesses, these antibodies are not sufficient to protect the body.

After this initial phase, the person is in an asymptomatic period (that is, shows no symptoms) which may last for several months or years, prior to the development of AIDS. Thus the incubation period is long - in adults, ten or more years; in children, three to six years. However, even though the individual feels well, the infected person is a carrier and is able to transmit the virus to others. It is not yet known whether all HIV-infected persons will progress to AIDS, but once AIDS develops it is usually fatal.

Other symptoms of HIV infection may occur over time. This collection of signs and symptoms is often referred to as AIDS-related complex or condition (ARC). The symptoms of ARC include: swollen lymph glands, fatigue, fever, night sweats, or diarrhoea which persists for several weeks. This condition excludes the opportunistic diseases that are included in the AIDS diagnosis.

Basic Information on AIDS

The symptoms of ARC may persist for several weeks or longer. These include:

- **swollen lymph glands**
- **fatigue**
- **fever**
- **night sweats**
- **diarrhoea**

A diagnosis of AIDS is made on the basis of the occurrence of opportunistic infections, cancers such as Kaposi's sarcoma, lymphoma, invasive cervical cancers or a T4 count of less than 200. The T4 count in the blood is a marker of the transition from HIV infection to AIDS.

Various types of organisms such as bacteria, fungi, viruses and protozoa cause opportunistic infections. They are called opportunistic infections because they take advantage of the body's weakened resistance to infection. The manner in which the virus affects each individual varies according to the strain of virus, its virulence and the host's general health. There are people who remain energetic and capable of carrying on their lives for months or years after an AIDS diagnosis and others who become so ill that they die within a few weeks.

The following symptoms may be indicative of AIDS:

- **dry cough, shortness of breath, fatigue**
- **confusion, poor memory**
- **skin rash**
- **oral thrush**
- **diarrhoea**
- **weight loss greater than 10 per cent of body weight**

5. HIV TRANSMISSION

HIV has been isolated from many body fluids of infected persons. However, only blood, semen, vaginal fluids and breast milk have been implicated in transmission. Detailed epidemiological studies throughout the world have documented three *J* modes of transmission: sexual, parenteral, and perinatal.

HIV is passed from person to person primarily through specific, preventable behaviours. These are contact, typically sexual, involving exposure to semen and vaginal fluids (sexual), blood-to-blood contact through shared needles or syringes or by receiving HIV -infected blood transfusions or blood products, or by exposure to contaminated instruments (parenteral), and transmission from mother to fetus prenatally, at birth or via breast milk (perinatal).

Since HIV infects the body and is contained in the lymph system for a period of time, the person may not experience any symptoms of disease. Individuals may remain asymptomatic and feel and appear healthy for months or years even though they are infected. These people may unknowingly transmit the disease to others.

HOW IS HIV TRANSMITTED?

HIV is transmitted:

- **through blood, semen and vaginal fluids during sexual activity, and from an infected mother to her child.**
- **through blood, by receiving HIV-infected blood transfusions or blood products.**
- **through the use of HIV blood-contaminated needles or syringes or other HIV-contaminated skin-piercing equipment.**
- **through sexual activity. This is the most frequent mode of transmission. The virus can be transmitted from any infected person to his or her sexual partner (from man to woman, woman to man, man to man, and woman to woman).**
- **from HIV-infected mother to child during pregnancy, at birth or shortly after birth.**

HOW IS HIV INFECTION NOT SPREAD?

HIV infection is not spread through casual contact, such as:

- **work or school contacts**
- **coughing or sneezing**
- **sharing cups, glasses, plates, and other eating utensils**
- **taking water or food**
- **handshakes**
- **touching or hugging**
- **insect bites**
- **wearing second-hand clothing**
- **going to swimming pools or public baths**
- **using telephones**
- **using toilets**

HIV infection with its consequent degradation of the immune system makes the individual more vulnerable to a range of infections including tuberculosis. And tuberculosis while frequently recurring in individuals previously infected may in turn make an individual more susceptible to HIV transmission. The health care provider should maintain a high level of suspicion should evidence of sexually transmitted diseases (STDs) or substance abuse be found in an individual. Care must be provided for any and all of these conditions.

How can transmission of HIV infection be prevented?

- **abstaining from sex or practising safer sex by not exposing a partner or oneself to body fluids such as semen and vaginal secretions. Barrier methods such as a latex condom, when used properly, prevent semen, vaginal secretions or blood from entering the body.**
- **not sharing contaminated needles, syringes or other skin-piercing equipment with others, since they may be contaminated with blood.**
- **not reusing contaminated needles and syringes employed for medicinal purposes before properly autoclaving them.**
- **screening blood and blood products for HIV.**
- **autologous blood transfusion.**

6. HIV SCREENING

The tests that are widely used in screening for HIV infection check for the presence of antibody produced by the body in response to HIV infection, and not for the virus itself. These tests include the ELISA, Western Blot and immunofluorescence. The most commonly used is the ELISA (enzyme-linked immunosorbent assay) test. While screening tests for HIV antibody are very good, they are not perfect. Not all those who are HIV-infected will have a positive test. People recently infected with HIV (especially during the initial weeks or months) are likely to have a negative test because of the time it takes for antibodies to be produced in response to HIV infection. This is referred to as the "window period". There is a risk that individuals may feel safe because of the negative test results, and thus engage in behaviours that unknowingly transmit HIV infection.

Individuals should receive counselling prior to testing for the presence of HIV antibodies. Counselling provides the opportunity to assess, together with the individual, any behaviours which may be risky. Guidance can be offered on approaches which will reduce risk. At the time when the results are given - whether negative or positive - additional counselling should be provided. Whatever the results, under most circumstances, the confidentiality of the tested individual should be respected. HIV antibody positive individuals should be encouraged to urge their sexual and needle sharing partners to be tested.

Tests vary in sensitivity and specificity in detecting HIV antibody. Sensitivity is the term used to indicate how likely it is that a test will be able to detect antibodies when they are present.

False Negative:

The test shows that the blood does not have antibodies when it really does have them.

False Positive:

The test shows that the blood has antibodies when it really does not have them.

Apart from a false negative results, that is, the person has HIV but this is not revealed by the test, the HIV antibody test may also result in false positives. In this case, a person who is not infected with the virus tests positive. Specificity is the term used to indicate how well a test is able to distinguish specimens which are not antibody positive. Ideally an initial positive test is repeated and, if still positive, is confirmed with a Western Blot.

When communities with relatively few HIV-infected people are screened for HIV with the antibody test, a positive result is more likely to be a false positive than a true positive. Thus, HIV screening in groups with a low incidence of HIV infection for the purpose of identifying individual cases is not effective. It will lead to confusion and distress for the person who is not infected but whose initial HIV test is positive.

Screening for HIV in populations is conducted to determine the level of infection present. Such screening is performed on blood samples which are without name identification. The results provide an indication of the epidemiological patterns of HIV. Screening, although it has many of the problems previously discussed, is particularly useful to trace the patterns of infection in the population over a period of time.

Estimates of the numbers of HIV-infected persons and those with AIDS will become more accurate as screening programmes, diagnostic capabilities and reporting programmes are established in individual countries. Subsequent studies will be necessary for planning resource allocation and service activity within each country.

Basic Information on AIDS

Special attention must be given to all sexually transmitted diseases. Learning the patterns of transmission through the populations, together with the diagnosis and treatment of these diseases, is vital, and methods to ensure this must be developed. The high prevalence of sexually transmitted diseases is indicative of incomplete precautions. Given that HIV infection is considered, for the most part, to be a sexually transmitted disease, an infection with any STD disease heralds the potential for HIV infection because the routes of transmission are identical.

Glossary

AIDS (Acquired Immune Deficiency Syndrome). A later stage of a viral disease that impairs the body's ability to fight infections and cancers. People with AIDS are susceptible to a wide range of life-threatening infections. These infections often can be treated, but currently there is no cure for the underlying immune deficiency caused by the virus.

AIDS TEST. A colloquial term which refers to laboratory tests such as ELISA or Western Blot used to detect the presence or absence of HIV antibodies. These antibodies indicate whether an individual has been exposed to the human immunodeficiency virus.

AIDS VIRUS. See HIV.

ANAL INTERCOURSE. The sexual activity which involves the penis being inserted into the anus/back passage.

ANTIBODIES. Substances produced by white blood cells in response to antigens. They fight off bacteria, viruses and other organisms which attack our bodies and cause disease. In the case of HIV, antibodies produced by the body are not effective in neutralizing the virus. These antibodies serve as markers for the presence of HIV.

ANTIBODY POSITIVE. This indicates that a person has been infected with HIV (see TRANSMISSION) and that the immune system has developed antibodies to it. An HIV antibody test will give a positive result when HIV antibodies are present. The person may look and feel perfectly well but is infectious and can pass the virus on to others. This test result does NOT indicate a person has AIDS.

ANTIGEN. Any substance that the body regards as foreign and against which it produces antibodies. Viruses, bacteria and fungi are regarded by the body as antigens.

ANTIGEN TEST. Laboratory test done on a small sample of a person's blood to detect the presence of parts of HIV, in the blood stream. This test is sensitive to infection with the virus earlier than an antibody test.

ANTIVIRAL. Literally "against virus" .Any drug that can destroy or weaken a virus. Some experimental antivirals are being used in research trials to treat people with AIDS or infection.

ARC. AIDS Related Complex. A term for a condition caused by infection with the human immunodeficiency virus excluding any of the specific illnesses used to diagnose AIDS. Symptoms include swollen lymph glands, fatigue, fever, night sweats, diarrhoea, or dry cough, which persist for several weeks.

AUTOLOGOUS BLOOD TRANSFUSION. Blood transfusion whereby a person receives his or her own blood. Blood collected and stored safely prior to use such as elective surgery.

BACTERIA. Often called germs, these are single-cell organisms, visible only under a microscope. They can usually be treated with antibiotics.

BLOOD/BODY FLUID PRECAUTIONS. Use of barrier precautions to prevent exposure to potentially infectious blood and body fluids.

B LYMPHOCYTES (B-CELLS). A type of white blood cell that is stimulated by the presence of foreign substances such as viruses to differentiate into plasma cells to produce antibody.

BISEXUAL. A person who engages in sexual activities with both males and females.

BODY Fluids. Fluids manufactured by the body. Some of these fluids have been found to contain the AIDS virus. Those fluids which are known to transmit the virus are semen, blood and blood products, cervical secretions and breastmilk.

CARRIER. A person who appears well but is capable of transmitting an infection to another person. Carriers have no outward signs or symptoms of the disease with which they are infected.

CASUAL TRANSMISSION. Transmitting a pathogen through activities such as coughing, sneezing, sharing cups, telephones or toilet facilities. The virus that causes AIDS is NOT casually transmitted.

CENTRAL NERVOUS SYSTEM (CNS). The CNS is made up of the brain and spinal cord. The virus that causes AIDS has been found in the fluid surrounding the CNS and can affect the central nervous system. Once in the CNS, the virus can cause a variety of symptoms, including loss of motor control, headaches, dementia, and vision, hearing and speech impairment. Note: not all viruses are able to pass out of the blood and into the CNS.

CO-FACTOR. A situation or activity that may increase a person's susceptibility to HIV infection and AIDS. Examples of co-factors are: other infections, drugs and alcohol use, poor nutrition, genital ulcer disease (such as syphilis, herpes, chancroid).

CONDOM. A latex or natural membrane sheath placed over an erect or partially erect penis for use during intercourse to reduce the risk of disease and unwanted pregnancy. The tip of the condom catches the semen. Condoms are readily available in most countries.

CONTACT TRACING. Finding and talking to the partners of people who have been diagnosed as having a sexually transmissible disease (STD). Since many Sills reveal no symptoms, contacts may be unaware of an infection but may require testing and need treatment.

DEOXYRIBONUCLEIC ACID (DNA). A nucleic acid that constitutes the genetic material of all cellular organisms and the DNA viruses.

ELISA TEST. A blood test which indicates the presence of antibodies to the human immunodeficiency virus. (Various ELISA tests are being used to detect other infections as well). The HIV ELISA test does not detect the disease AIDS, but only indicates if viral infection has occurred. The test is used to screen blood supplies and to detect the presence of antibody in individuals.

EPIDEMIOLOGY. The study of how disease is distributed in population groups and of the factors which influence its distribution.

FALSE NEGATIVE TEST. An erroneous test result that indicates no antibodies are present when in fact they are present.

FALSE POSITIVE TEST. An erroneous test result that indicates antibodies are present when in fact there are none.

GENOME (GLYCOPROTEINS). The complete gene complement of an organism, contained in a set of chromosomes.

HERPES. There are two major types of herpes simplex virus (types I and II) in humans. Some herpes viruses cause cold sores and some cause genital herpes. Genital herpes is a common opportunistic infection in people with AIDS.

HETEROSEXUAL. Persons who are attracted to members of the opposite sex and who, if they have sex, do so with an opposite-sex partner.

HIGH-RISK BEHAVIOUR. A term used to describe certain activities, like frequent change of sex partners, which increase the risk of transmitting the human immunodeficiency virus. These include anal and vaginal intercourse without a condom, oral-anal contact, semen or urine in the mouth, sharing intravenous needles or syringes, intimate blood contact, and sharing of sex toys contaminated by body fluids. These behaviours are also referred to as "unsafe" activities.

HIGH-RISK GROUPS. Those groups in which epidemiological evidence indicates that there is an increased risk of contracting HIV. High-risk groups include: commercial sex workers, people with promiscuous behavioural patterns, homosexuals, bisexuals, intravenous drug users, haemophiliacs, and the sexual partners of anyone in these groups.

HIV. Human immunodeficiency virus. This term was adopted in mid-1986 as the name for the virus which causes AIDS. It distinguishes the virus causing AIDS from other retroviruses and indicates an independent species. The virus previously was referred to as HTLV-111 (Human T Cell Lymphotropic Virus, Type Three) LAV (Lymphadenopathy Associated Virus), and ARV (AIDS-related retrovirus). It renders the human immune system deficient and unable to resist opportunistic infections and the development of cancers.

HIV ANTIBODY TEST. This test (inaccurately called the AIDS test) refers to the ELISA I (enzyme linked immunosorbent assay) used to detect the presence of antibodies to HIV indicating that a person has been exposed to the virus that causes AIDS. A second test, the Western Blot, is used to confirm reactive (positive) ELISA tests.

HIV II Name given by French and Portuguese researchers to a second human retrovirus associated with AIDS initially in West African countries, but now found in countries outside Africa.

HOMOSEXUAL. People who are sexually attracted towards members of their own sex and who, if they have sex, do so with a partner of the same sex.

IMMUNE DEFICIENCY. Describes the condition where a person's immune system cannot protect the body, resulting in an increased susceptibility to various infections and cancers.

IMMUNE SUPPRESSION. Occurs when the ability of an individual to resist or overcome infection has been severely reduced owing to chemotherapy, diseases or frequent infections.

IMMUNE STATUS. The state of the body's natural defenses against disease. It is influenced by heredity, age, past illness history, diet, life habits such as smoking and drinking, physical and mental health. It includes production of circulating and local antibodies and their mechanisms of action.

IMMUNE SYSTEM. A complex system which includes such lymphoid related organs as the bone marrow, thymus, spleen, tonsils, adenoids, appendix, peyer's patches, lymph nodes and blood and lymphatic vessels. Exposure to bacteria, viruses, fungi, parasites, harmful food substances or environmental toxins induces a response by the cells and secretions of the immune system.

INACTIVATED. A virus rendered harmless by heat or chemicals.

INCIDENCE. The number of new cases in a surveyed population reported over a specified period of time.

INFECTIOUS. People are infectious when they have been infected with a pathogen, like HIV, and are capable of transmitting that pathogen to another person. A person infected with HIV is infectious for life.

INCUBATION PERIOD. The time between initial infection with a disease-causing organism and the onset of the visible signs and symptoms of the disease. With HIV disease, this stage can take a few months to several years.

KAPOSI'S SARCOMA. A rare cancer of the lymphatic vessels (endothelial cell) wall. It also affects the lining of internal organs. It appears as pink to purple painless spots, usually on the skin but also on internal organs. It is one of the opportunistic diseases to which people with AIDS are prone.

LATENCY. A period when the virus is in the body but causes no active disease.

LYMPHOCYTE. A type of white blood cell (including T and B cells) formed in the lymphoid tissue throughout the body.

NEUROLOGICAL SYMPTOMS. Some people who have been infected with HIV develop symptoms indicating deterioration of mental faculties such as dementia, memory loss, erratic emotional state. Neurological symptoms may be the first sign of HIV illness.

OPPORTUNISTIC INFECTION. Infection that takes advantage of the body's lowered resistance due to the destruction of the immune system by HIV. They may be infections such as toxoplasmosis encephalitis, or cancers such as Kaposi's sarcoma. The most common opportunistic infections associated with AIDS-related deaths and illnesses are:

PCP (Pneumocystis Carinii Pneumonia). Caused by a protozoan parasite, it is the most common cause of death for people with AIDS.

CMV (Cytomegalovirus). Related to the herpes family of viruses. CMV is common and normally causes only minor illness. In people with AIDS, CMV can cause serious disease, most often in the eyes, lungs or liver. It is a common cause of death in people with AIDS.

HERPES SIMPLEX VIRUS. A viral infection causing severe mucocutaneous ulcerations. If of more than one month's duration, it is considered diagnostic, together with seropositivity, of AIDS.

CANDIDAL INFECTION. A fungal infection, also known as thrush or *Candida albicans*. The organism commonly lives in warm, moist parts of the body like the rectum and vagina. Certain conditions, such as pregnancy, use of oral contraceptives or antibiotics and stress, may alter the environment in which *Candida* lives and allow the fungus to multiply. The most common symptom is a white creamy discharge, which can cause severe itchiness. Children, especially small babies, are prone to Candidal infection in the mouth. People with AIDS and other illnesses producing or accompanied by immunosuppression frequently develop oropharyngeal candidiasis which may extend to the trachea, bronchi or lungs (white patches on an erythematous base).

COCCIDIOIDOMYCOSIS (valley fever). Normally a mild lung infection, in AIDS this fungus can cause devastating disease in the central nervous system (brain and spinal cord) and blood.

CRYPTOSPORIDIUM ENTERITIS (for more than one month). A protozoal infection of the intestines which causes severe diarrhoea.

MYCOBACTERIUM AVIUM INTECELLULASE (MAI) or MYCOBACTERIUM AVIUM COMPLEX (MAC) (the more recent term). A bacterial infection which causes a chronic lung infection.

TOXOPLASMOSIS. A parasite which infects the brain and central nervous system. Symptoms include memory loss, motor control problems and mood swings.

PML (progressive Multifocal Leukoencephalopathy). A viral infection of the brain which causes memory loss, motor control problems and mood swings.

CRYPTOCOCCAL MENINGITIS. A fungus which infects the covering of nerves. It can lead to serious peripheral nerve problems including headache, blurring vision, confusion, depression, agitation or inappropriate speech.

PATHOGEN. A living microorganism or virus capable of producing a disease.

PREDICTIVE VALUE. The likelihood that an individual with positive test results actually has the disease (a true positive) or the likelihood that an individual with a negative test does not have the disease (a true negative).

PREVALENCE. A measure of how common or widespread a disease or infection is in the community or population group at a given period of time. This measure includes existing and new cases.

PREVENTIVE MEASURES. Measures aimed at stopping the spread of HIV from person to person. As an AIDS vaccine is not yet available, the only preventive measure is social/educational action, aimed both at helping people to understand and adopt ways of behaving, which reduce the risk of, or prevent transmission of the virus; setting up conditions in the community which facilitate the choice of healthier behaviour such as "safer sex".

PROTEASE (PROTEINASE). Any enzyme that catalyzes the splitting of interior peptide bonds in a protein.

PROVIRUS. The genome of an animal virus integrated (by crossing over) into the chromosome of the host cell, and thus replicated in all of its daughter cells.

RECOMBINANT. Vaccine developed through use of laboratory-engineered materials composed of the same proteins as a particular organism.

RETROVIRUS. A class of viruses, which includes HIV. Retroviruses are characterized by their ability to convert RNA to DNA in the host cell (instead of the reverse as in most other pathogenic viruses). To do this, requires an enzyme called reverse transcriptase.

REVERSE TRANSCRIPTASE. An enzyme used by HIV to transform RNA into DNA.

RIBONUCLEIC ACID (RNA). Nucleic acid yielding ribose on hydrolysis, present in cytoplasm and controlling synthesis of proteins.

SAFE(R) SEX. Term currently used when describing sexual activities most likely to reduce the risk of transmission. Safer sex activities include: always using a condom with lubricant/spermicide monoxynol 9 during sexual intercourse; mutual masturbation; dry kissing; massage; fantasy; touching. Unsafe sex, on the other hand, allows the introduction of HIV -infected fluids, especially semen, blood and vaginal fluid, into the body during sex.

SCREENING. The process of identifying undetected disease by determining the presence of high risk behaviours or using a test to determine physiological deviations.

SEMEN. The cream-coloured liquid which is emitted from the penis when a man ejaculates. It is made up of sperm and seminal fluid.

SENSITIVITY. The ability of a screening test to correctly identify individuals with a disease or condition, i.e., to identify "true positives."

SEROCONVERSION. Describes the situation during which an individual who is HIV-antibody negative becomes HIV-antibody positive i.e. after exposure to the virus, the blood serum has converted from antibody negative to antibody positive. During this process the person may suffer an acute illness. In the case of HIV infection the symptoms may be those of flu or swollen glands. Sometimes no symptoms are experienced.

SEROPOSITIVE. The presence of specific antibodies in the blood. In the case of HIV infection, this indicates that an individual has been infected with the human immunodeficiency virus. In most cases seropositivity develops within two weeks to six months after infection with HIV.

SEROPREVALENCE. The overall occurrence of my antibodies within a specific population at any given point in time.

SEXUAL INTERCOURSE. The physical union associated with sexual stimulation, which usually but not exclusively involves penetration of, or by the sexual organs; In vaginal intercourse, the male penis is inserted in the female vagina; in anal intercourse the anus is penetrated; in oral intercourse, the lips, mouth and tongue are used.

SPECIFICITY. The ability of a screening test to correctly identify those individuals who are truly infected from those who are free from infection.

STD. Sexually Transmitted Disease. Any disease which may be passed on sexually.

SYNDROME. A set of symptoms and signs resulting from a single cause, or occurring together so commonly that a definite pattern is apparent.

T-CELL RATIO. The proportion of T-helper cells to T-suppressor cells found in the blood. In a healthy person, this proportion is approximately 2:1. In AIDS, it drops below 0.5:1 (i.e. inverts).

T-LYMPHOCYTE (T-CELL). One type of white blood cell that orchestrates the response of the rest of the immune system. T-cells are the target of the human immunodeficiency virus. By destroying T-cells, the human immunodeficiency virus is able to damage the overall effectiveness of the immune system.

T-HELPER CELLS. Also called T4 cells. These are one type of white blood cell or lymphocyte which helps in defending the body against disease by initiating antibody production. In people with AIDS, T-helper cells are so depleted that the immune system is no longer effective in eliminating foreign agents thereby allowing opportunistic infections to occur.

T-SUPPRESSOR CELLS. Also called T8 or "killer cells". These are another type of white blood cell or lymphocyte which can be cytotoxic to other cells and act to turn off the immune response to a foreign substance.

TRANSMISSION. The spread of infectious pathogens from one person to another. HIV transmission occurs through infected blood, semen and vaginal fluid entering the body during sex, by introduction of infected blood into the body and from mother to infant.

TUBERCULOSIS. Infectious disease caused by mycobacteria and characterized by the formation of tubercles and caseous necrosis (cell death) in the tissues.

UNIVERSAL PRECAUTIONS. Use of barrier precautions to prevent exposure to potentially infectious blood and body fluids. .

UNSAFE ACTIVITIES (SEE HIGH RISK BEHAVIOURS).

VACCINE. A substance which contains antigen of an infectious organism. In the vaccinated person, it stimulates an immune response but not disease. It then protects against future infections by that organism.

VIREMIA. Presence of viruses in the blood, usually characterized by malaise, fever, and aching of the back and extremities.

VIRUS. An extremely small organism visible only through an electron microscope. Viruses cause a wide variety of diseases in humans. Viruses can reproduce only in living cells. They do not respond to treatment with antibiotics.

WESTERN BLOT TEST. A blood test used to detect antibodies to the AIDS virus. Compared with the ELISA test, the Western Blot is more detailed and more expensive. It is used to confirm the results of the ELISA test. It may occasionally be negative, even though a person is infected with HIV, particularly in the first few months, but when it is positive it is very accurate -the person is almost certainly infected with HIV.

WINDOW PERIOD. The period of time when a person may be infected with HIV, but before antibodies have been formed. This period is usually two to three weeks and is rarely longer than six months. The virus is in the blood and may be detected by an antigen test, but the antibody test will be negative at this time. A seronegative person can transmit virus and infected cells during the window period.