

HIV/AIDS Update (1 Hour)

Goals & Objectives

Course Description

“HIV/AIDS Update (1 Hour)” is an asynchronous online continuing education course for physical therapists and physical therapist assistants. This course presents updated information about HIV/AIDS including sections on physiology, transmission, diagnosis, treatment, and legal issues.

Course Rationale

The purpose of this course is to present current information about HIV/AIDS. Physical therapists and physical therapist assistants will find this information pertinent and useful when addressing the challenges and needs specific to individuals who have been diagnosed with either HIV infection or AIDS.

Course Objectives

Upon completion of this course, the participant will be able to:

1. Recognize the physiology, structure, and life cycle of HIV.
2. Identify the transmission modes of HIV infection.
3. List the early symptoms of HIV infection.
4. Identify medical conditions associated with AIDS.
5. Identify and differentiate HIV screening tests and HIV confirmatory tests.
6. List current treatment recommendations for HIV infection.
7. Identify the implications of HIV/AIDS for healthcare workers.
8. Recognize the laws and statutes that pertain to the rights, care, and treatment of individuals with HIV/AIDS.

Course Provider – Innovative Educational Services

Course Instructor - Michael Niss, DPT

Target Audience – physical therapists and physical therapist assistants.

Course Educational Level – Introductory / intermediate

Course Prerequisites - None

Method of Instruction/Availability – Online recorded audiobook available on demand.

Criteria for Issuance of CE Credits - A score of 70% or greater on the course post-test.

Continuing Education Credits – 1 hour

Fees - \$9.95

Conflict of Interest – No conflict of interest exists for the presenter or provider of this course.

Refund Policy - Unrestricted 100% refund upon request. The request for a refund by the learner shall be honored in full without penalty or other consideration of any kind. The request for a refund may be made by the learner at any time without limitations before, during, or after course participation.

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Course Outline

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Overview

Scope of the HIV/AIDS Pandemic

HIV infection and AIDS are among the most pressing concerns facing health providers worldwide. Although the impact of HIV/AIDS is serious in both developed and developing countries, it is most profound in the developing world, where resources to prevent, diagnose, and manage HIV infection are scarce.

2021 Data from the Joint United Nations Program on HIV/AIDS (UNAIDS):

Global HIV statistics

- 38.4 million people globally are living with HIV.
- 1.5 million people became newly infected with HIV
- 650,000 people died from AIDS-related illnesses in.
- 28.7 million people were accessing antiretroviral therapy.
- 84.2 million people have become infected with HIV since the start of the epidemic.
- 40.1 million people have died from AIDS-related illnesses since the start of the epidemic.

People living with HIV

- 38.4 million people living with HIV.
 - 36.7 million adults (15 years or older).
 - 1.7 million children (0–14 years).
 - 54% of all people living with HIV were women and girls.
- Approximately 5.9 million people (15% of all people with HIV) do not know that they are infected.

New HIV infections

- New HIV infections have been reduced by 54% since the peak in 1996.
 - In 2021, approximately 1.5 million people were newly infected with HIV, compared to 3.2 million people in 1996.
 - Women and girls accounted for 49% of all new infections in 2021.
- Since 2010, new HIV infections have declined by 32%, from 2.2 million to 1.5 million in 2021.
- Since 2010, new HIV infections among children have declined by 52%, from 320,000 in 2010 to 160,000 in 2021.

AIDS-related deaths

- AIDS-related deaths have been reduced by 68% since the peak in 2004 and by 52% since 2010.
- In 2021, approximately, 650,000 people died from AIDS-related illnesses worldwide, compared to 2.0 million people in 2004 and 1.4 million people in 2010.
- AIDS-related mortality has declined by 57% among women and girls and by 47% among men and boys since 2010.

In more developed countries, recent advances in treatment have dramatically changed the perspectives of those living with HIV infection, of health workers, and of researchers. Many have now begun to think of HIV infection as potentially treatable, rather than an automatic death sentence.

However, most of those living in the developing world lack access to treatment regimens that have proved effective in extending lives and treating opportunistic infections, and the costs of such treatments are well outside the reach of most individuals infected with HIV. Even though there have been price reductions in some developing countries, treatment is still out of reach for the vast majority.

Lack of access to treatment has been the cause of much recent global debate between public health activists and the pharmaceutical companies that hold the patents to these drugs, and recent events suggest that some measure of greater access may soon be achieved.

Although lack of access to treatment regimens is only one of many complex factors barring progress in the fight against HIV/AIDS in the developing world, many see improved access as an important first step.

Physiology

HIV belongs to a class of viruses called retroviruses, which have genes composed of ribonucleic acid (RNA) molecules. Like all viruses, HIV can replicate only inside cells, commandeering the cell's machinery to reproduce. However, only HIV and other retroviruses, once inside a cell, use an enzyme called reverse transcriptase to convert their RNA into DNA, which can be incorporated into the host cell's genes.

HIV belongs to a subgroup of retroviruses known as lentiviruses, or slow viruses. The course of infection with these viruses is characterized by a long interval between initial infection and the onset of serious symptoms.

Structure of HIV

HIV is composed of two distinct components, the viral envelope and the viral core.

The viral envelope is the outer coat of the virus. It is composed of two layers of fatty molecules called lipids, taken from the membrane of a host human cell when a newly formed virus particle buds from the cell.

Within the envelope of a mature HIV particle is a bullet shaped core or capsid, made of 2000 copies of another viral protein, p24. The capsid surrounds two single strands of HIV RNA, each of which has a copy of the virus's nine genes.

Life Cycle of HIV

Entry of HIV into the Cells

Infection typically begins when an HIV particle, which contains two copies of the HIV RNA, encounters a cell with a surface molecule called a cluster designation 4 (CD4). Cells with this molecule are known as CD4 positive cells. The membranes of the virus and the cell fuse. Following the fusion, the virus's RNA, proteins, and enzymes are released into the cell.

Reverse Transcription

In the cytoplasm of the cell, HIV reverse transcriptase converts viral RNA into DNA, the nucleic acid form in which the cell carries its genes.

Integration

The newly made HIV DNA moves to the cell's nucleus, where it is spliced into the host's DNA with the help of HIV integrase. Once incorporated into the cell's genes, HIV DNA is called a "provirus". Billions of cells in an HIV infected person may contain HIV DNA.

Transcription

For a provirus to produce new viruses, RNA copies must be made that can be read by the host cell's protein-making machinery. These copies are called messenger RNA (mRNA), and production of mRNA is called transcription, a process that involves the host cell's own enzymes.

Translation

After HIV mRNA is processed in the cell's nucleus, it is transported to the cytoplasm. HIV proteins are critical to this process. In the cytoplasm, the virus co-opts the cell's protein-making machinery, including the ribosomes, to make long chains of viral proteins and enzymes, using HIV mRNA as a template.

Assembly and Budding

Newly made HIV core proteins, enzymes, and RNA gather just inside the cell's membrane, while the viral envelope proteins aggregate within the membrane. An immature viral particle forms and pinches off from the cell, acquiring an envelope that includes both cellular and HIV proteins from the cell membrane. During this part of the viral life cycle, the core of the virus is immature and the virus is not yet infectious. The long chain of proteins and enzymes that make up the immature viral core are now cleaved into smaller pieces by a viral enzyme called protease. This step results in infectious viral particles.

Transmission

HIV is spread by sexual contact with an infected person, by sharing needles and/or syringes with someone who is infected or, less commonly through transfusions of infected blood or blood clotting factors. Babies born to HIV-infected mothers may become infected before or during birth or through breast-feeding after birth.

There has only been one instance of patients being infected by a healthcare worker in the United States. This involved HIV transmission from one infected dentist to six patients.

HIV does not survive well in the environment, making the possibility of environmental transmission remote. Live HIV cells are found in varying concentrations in different body fluids. Very high concentrations: Blood, semen vaginal secretions. Moderate concentrations: Breast milk. Very low* concentrations: saliva, tears, perspiration, feces, urine. (*These fluids are completely, or nearly completely free of live cells, and pose no risk of infection)

Although HIV has been transmitted between family members in a household setting, this type of transmission is very rare. These transmissions are believed to have resulted from contact between skin or mucous membranes and infected blood.

There is no known risk of HIV transmission to co-workers, clients, or consumers from contact in industries such as food service establishments.

The CDC knows of no instances of HIV transmission through tattooing or body piercing. One case of HIV transmission from acupuncture has been documented.

Early Symptoms

Many people do not develop any symptoms when they first become infected with HIV. Some people, however, have a flu-like illness within a month or two after

exposure to the virus. The illness may include fever, headache, tiredness, and enlarged lymph nodes. These symptoms usually disappear within a week to a month and are often mistaken for those of another viral infection. During this period, people are very infectious, and HIV is present in large quantities in genital fluids.

More persistent or severe symptoms may not surface for a decade or more after HIV first enters the body in adults, or within two years in children born with HIV infection. This period of asymptomatic infection is highly individual. Some people may begin to have symptoms as soon as a few months, while others may be symptom free for more than 10 years. During the asymptomatic period, however, the virus is actively multiplying, infecting, and killing cells of the immune system. HIV's effect is seen most obviously in a decline in the blood levels of CD4+T cells (also called T4 cells).

As the immune system deteriorates, a variety of complications start to take over. For many people, their first sign of infection is large lymph nodes that may be enlarged for more than three months. Other symptoms often experienced months to years before the onset of AIDS include: lack of energy, weight loss, frequent fevers and sweats, persistent yeast infections, skin rashes, pelvic inflammatory disease (women), and short term memory loss.

AIDS

The Center for Disease Control (CDC) defines AIDS to include all HIV infected people who have fewer than 200 CD4+T cells per cubic millimeter of blood. (Healthy adults have counts of 1000 or more.) In addition, the definition includes 26 clinical conditions that affect people with advanced HIV disease. Most of these conditions are opportunistic infections.

People with AIDS are particularly prone to developing various cancers, especially those caused by viruses such as Kaposi's sarcoma and cervical cancer, or cancers of the immune system (lymphomas).

Diagnosis

HIV tests are very accurate, but no test can detect the virus immediately after infection. How soon a test can detect HIV depends on the type of test being used. There are three types of HIV tests: antibody tests, antigen/antibody tests, and nucleic acid tests (NAT).

Antibody tests

Antibody tests look for antibodies to HIV in a person's blood or oral fluid. Antibody tests can take 23 to 90 days to detect HIV after exposure. Most rapid tests and HIV self-tests are antibody tests. In general, antibody tests that use blood from a vein can detect HIV sooner after infection than tests done with blood from a finger stick or with oral fluid.

Antigen/antibody tests

Antigen/antibody tests look for both HIV antibodies and antigens. Antibodies are produced by a person's immune system when they're exposed to viruses like HIV. Antigens are foreign substances that cause a person's immune system to activate. If a person has HIV, an antigen called p24 is produced before antibodies develop. Antigen/antibody tests are recommended for testing done in labs and are common in the United States. An antigen/antibody test performed by a lab on blood from a vein can usually detect HIV 18 to 45 days after exposure. There is also a rapid antigen/antibody test available that is done with a finger stick. Antigen/antibody tests done with blood from a finger stick can take 18 to 90 days after exposure.

Nucleic acid tests

Nucleic acid tests look for the actual virus in the blood. This test should be considered for people who have had a recent exposure or a possible exposure with early symptoms of HIV and have tested negative with an antibody or antigen/antibody test. A NAT can usually detect HIV 10 to 33 days after exposure.

An initial HIV test usually will either be an antigen/antibody test or an antibody test. If the initial HIV test is a rapid or self-test and it is positive, the person should go to a health care provider to get follow-up testing. If the initial HIV test is a lab test and it is positive, the lab will usually conduct follow-up testing on the same blood sample as the initial test. Although HIV tests are generally accurate, follow-up tests allow the health care provider to confirm the result.

Treatment

The Food and Drug Administration has approved seven classes of antiretroviral (ARV) drugs for treating HIV infection. The classes are based on how each drug interferes with the HIV life cycle. These seven classes are:

- nucleoside reverse transcriptase inhibitors (NRTIs),
- non-nucleoside reverse transcriptase inhibitors (NNRTIs)
- protease inhibitors (PIs)
- fusion inhibitors

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- CCR5 antagonists
- post-attachment inhibitors, and
- integrase strand transfer inhibitors (INSTIs)

Nucleoside reverse transcriptase inhibitors (NRTIs)

Block reverse transcriptase (an HIV enzyme). HIV uses reverse transcriptase to convert its RNA into DNA (reverse transcription). Blocking reverse transcriptase and reverse transcription prevents HIV from replicating.

Non-nucleoside reverse transcriptase inhibitors (NNRTIs)

Binds to and block HIV reverse transcriptase (an HIV enzyme). HIV uses reverse transcriptase to convert its RNA into DNA (reverse transcription). Blocking reverse transcriptase and reverse transcription prevents HIV from replicating.

Protease inhibitors (PIs)

Blocks protease (an HIV enzyme). By blocking protease, PIs prevent new (immature) HIV from becoming a mature virus that can infect other CD4 cells.

Fusion inhibitor

Blocks the HIV envelope from merging with the host CD4 cell membrane (fusion). This prevents HIV from entering the CD4 cell.

CCR5 antagonists

Blocks the CCR5 coreceptor on the surface of certain immune cells, such as CD4 T lymphocytes (CD4 cells). This prevents HIV from entering the cell.

Post-attachment inhibitors

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

Integrase strand transfer inhibitors (INSTIs)

Blocks integrase (an HIV enzyme). HIV uses integrase to insert (integrate) its viral DNA into the DNA of the host CD4 cell. Blocking integrase prevents HIV from replicating.

Prevention

Pre-exposure prophylaxis

Pre-exposure prophylaxis, or PrEP, is a strategy in which healthy people routinely take one or more antiretroviral drugs to reduce their risk of getting HIV. There are currently two licensed PrEP options. The first is a daily oral dose of two antiretrovirals, tenofovir and emtricitabine, in a single pill marketed as Truvada or

Descovy. The second option is a long-acting injectable form administered bimonthly. (Cabotegravir; brand name Apretude).

Sexual Behavior

People should either abstain from having sex or use latex condoms, which may offer partial protection, during oral, anal, or vaginal sex. Although some laboratory evidence shows that spermicides can kill HIV, researchers have not found that these products can prevent a person from getting HIV.

Preventing Occupational HIV Transmission to Health Care Workers

The most common way for a health care worker to be exposed to HIV infection is via a percutaneous puncture or cut. The primary means of preventing occupational exposure to HIV and other blood-borne pathogens is to follow infection control precautions with the assumption that the blood and other body fluids from all patients are potentially infectious. These precautions include routinely using barriers (such as gloves and/or goggles) when anticipating contact with blood or body fluids, immediately washing hands and other skin surfaces after contact with blood or body fluids, and carefully handling and disposing of sharp instruments during and after use.

Although the most important strategy for reducing the risk of occupational HIV transmission is to prevent occupational exposures, plans for post-exposure management should be in place. The administration of antiretroviral drugs as post exposure prophylaxis should be considered. Using zidovudine has been shown to be safe and associated with decreased risk for occupationally related HIV infection.

Undetectable = Untransmittable

In recent years, an overwhelming body of clinical evidence has firmly established the HIV Undetectable=Untransmittable, or U=U, concept as scientifically sound. U=U means that people with HIV who achieve and maintain an undetectable viral load—the amount of HIV in the blood—by taking antiretroviral therapy (ART) daily as prescribed cannot sexually transmit the virus to others.

For nearly two decades, scientists have recognized that viral load is a key determinant of HIV transmission. Studies conducted before the availability of ART revealed that higher viral loads correlate with higher rates of both sexual and perinatal transmission of HIV. Following the advent of triple-drug ART, observational studies suggested that viral loads lowered by ART were associated with reduced risk of sexual and perinatal HIV transmission. In addition, epidemiological studies showed that as the number of people in a community who are virally suppressed rises, the number of new HIV transmissions falls.

Findings from the large NIAID-supported HPTN 052 clinical trial, which tracked more than 1,600 heterosexual couples over 10 years, offered clear-cut evidence that consistent suppression of HIV with ART prevents sexual transmission of the virus. HPTN 052 found that starting and sustaining treatment for HIV early, when the immune system is relatively healthy, essentially eliminated transmission of the virus. No HIV transmission was observed when ART consistently, durably suppressed the virus in the partner with HIV. While some transmission events did occur in the study, new transmissions only resulted when the partner with HIV was not fully virally suppressed due to either having just started ART, or for whom treatment no longer was working and the virus was replicating. The HPTN 052 results, along with those of the NIAID-funded START study, helped influence the World Health Organization in 2015 to recommend that everyone living with HIV should begin treatment upon diagnosis.

Florida's Omnibus AIDS Act

The Florida Omnibus AIDS Act is comprehensive legislation created to combat the spread of HIV and to protect the rights of those infected. It mandates that every licensed healthcare professional must take a course on HIV/AIDS and every healthcare facility must educate its employees about HIV infection.

Testing

The Omnibus Act places these provisions on testing:

1. Informed consent must be obtained.
2. Reasonable efforts must be made to notify the test subject about the test results.
3. Positive test results must be confirmed through a corroborating test before informing the subject of the test results.

Informed Consent

Prior to testing, an individual must understand and explicitly agree to the HIV test. General consent to draw blood and to run unspecified tests is insufficient.

Information Requirements

Satisfying the legal standard of "informed consent" in general depends on whether the information provided to the patient meets accepted standards of medical practice and whether a reasonable patient would have a sufficient understanding of the procedure to make an intelligent decision from the information provided.

Health care providers must convey three pieces of information, all essentially involving the choice of a testing site, as part of the process of obtaining informed consent:

- Disclose that the provider is required by law to report the test subject's name to the local county health department if the HIV test results are positive;
- Alert the patient that as an alternative, the patient may secure the HIV test at a site that tests anonymously, the locations of which the provider must make available; and
- Relate the extent of the confidentiality rights that adhere to the test results in the provider's patient records.

An explanation of the following information constitutes sound and reasonable practice in providing information sufficient to secure informed consent from an HIV test subject:

- An HIV test is a test to determine if an individual is infected with the virus that causes AIDS.
- The potential uses and limitations of the test.
- The procedures to be followed.
- HIV testing is voluntary and consent to be tested can be withdrawn at any time prior to testing.

For the purposes of HIV testing, minors in the state of Florida are considered adults, and are allowed to provide consent for testing of themselves.

Notification Responsibilities

Test providers must confirm the test subject's identity. They must also establish a procedure to confirm the identity of the person to whom the test results are given.

The provider must provide post-test counseling. In instances where the test results are negative, this should include information on preventing the transmission of HIV. When the test result is positive, post-test counseling must include information on the availability of appropriate medical and support services, the importance of notifying partners who may have been exposed, and prevention of the transmission of HIV.

Confidentiality

Florida's Omnibus AIDS Act considers the results of an HIV test to be "superconfidential". This places additional responsibilities on those who know the results of this testing. This superconfidentiality relates only to the fact that an HIV test was performed and the results that were obtained from it.

Special Handling of HIV Information

Test results may only be released to a third party after written authorization has been obtained from the test subject. Access to HIV test results is limited to employees or agents who either provide care to the test subject, conduct necessary administrative supportive tasks, or handle body fluids or tissues of a test subject.

Permitted Disclosures

Any disclosure that does not fall within one of the following permitted situations is prohibited.

1. The test subject of course may be told.
2. Employees and agents of health care providers and facilities may disclose to one another a patient's HIV test status if they have a "need to know."
3. Health care providers involved in the care or treatment of a test subject and consulting among themselves or with health care facilities to determine diagnosis or treatment of the test subject may divulge superconfidential HIV test information without the patient's knowledge or consent
4. A health care provider involved in the delivery of a child may note the mother's HIV test status in the medical record of the newborn.
5. Specific situations in which disclosure without consent of the test subject is permitted:
 - a. The Department of Health in order to comply with laws and rules governing reporting and controlling the spread of HIV infection.
 - b. To appropriate authorities in the course of reporting child sexual abuse or neglect.
 - c. By certain licensed providers notifying their patient's sex or needlesharing partner of their exposure
 - d. Among health care facilities and providers engaged in certain kinds of transfers of human body parts and tissues.
 - e. Health facility staff committees who engage in activities such as peer review and health program monitoring and evaluation and service reviews.
 - f. Authorized medical and epidemiologic researchers.
6. Separate statutes govern release of HIV test information within correctional facilities, for convicted prostitutes, and for disclosing test results to the victim of a criminal offense, involving the transmission of body fluids of persons charged with or convicted of certain offenses in which transmission might have occurred.
7. When a child is placed in foster care or for adoption, the adults responsible for the child (including governmental personnel overseeing the child's care) may be told the child's HIV test status provided they are directly involved in the placement, care, control, or custody of the child.
8. Employees of residential facilities or community based care programs for developmentally disabled persons who are directly involved "in the care, control, or custody of the test subject, and who have a need to know such information," may have access to the test subject's HIV test status.
9. Health care providers may disclose to public health authorities without the test subject's consent that a patient is HIV positive in only very limited circumstances:
10. A court may order the release of HIV test results when certain procedural safeguards are followed.

11. Medical examiners, who can test without informed consent, must report positive HIV test results to the Department of Health.
12. Certain providers in tightly defined circumstances may tell the sexual and needle-sharing partners of HIV-positive patients that they have been exposed to HIV.

Consequences of Breaching Confidentiality

Release of HIV test results other than in accordance with the situations the Act specifically permits can have serious repercussions. The health care professional, who violates any of the Act's requirements, is subject to disciplinary action by the provider's licensing body. It is a first-degree misdemeanor (subject to up to one year of imprisonment) for anyone who violates the Act's confidentiality requirements; the Act does not require the violation to be intentional. It is a third degree felony (which carries punishment of up to five years imprisonment) for any person maliciously or for monetary gain to disseminate information identifying an individual with a sexually transmissible disease, including HIV infection.

Notification of Third Parties

The Act eliminates any legal obligation for providers to tell third parties of the danger posed by the behavior of an individual infected with HIV. However, providers may willingly intervene and disregard superconfidentiality when certain conditions have been met.

1. Identification of the third party must come from the patient.
2. The practitioner must recommend that the patient notify the partner.
3. The practitioner must advise the patient of the practitioner's intent to notify the partner.
4. The preceding three steps must be documented in the patient's medical record without identifying the third party.
5. The practitioner takes full responsibility for notifying the third party.

Accidental Exposures to Healthcare Workers

An exposure is considered significant when skin or mucous membranes are exposed to the blood or body fluids of a patient, or if they experience a "sharps" accident. Healthcare workers and non-medical workers exposed while providing emergency medical assistance, have the right to know the patient's HIV status.

Supplemental Information

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HIV / AIDS Update (1 Hour)

Post-Test

1. Which statement regarding collected HIV data is TRUE?^(p. 3)
 - A. Approximately 15% of all people living with HIV do not know they have the virus.
 - B. Worldwide, the majority of people living with HIV are male.
 - C. The number AIDS-related deaths have remained relatively unchanged for the last 20 years.
 - D. 84 million people have died from AIDS-related illnesses since the start of the epidemic.

2. HIV belongs to a subgroup of _____ known as _____.^(p. 4)
 - A. adenoviruses, reoviruses
 - B. parvoviruses, herpesviruses
 - C. retroviruses, lentiviruses
 - D. hepadnaviruses, poxviruses

3. HIV DNA moves into the cell's nucleus and is spliced into the host's DNA during _____.^(p. 5)
 - A. reverse transcription
 - B. integration
 - C. transcription
 - D. translation

4. Which of the following body fluids typically has the highest concentrations of live HIV cells?^(p. 6)
 - A. Semen
 - B. Breast milk
 - C. Tears
 - D. Saliva

5. Which of the following is TRUE regarding HIV infection?^(p. 6-7)
 - A. Most people experience flu-like symptoms within a week or two after exposure to the virus.
 - B. HIV is present in very low quantities in genital fluids during the first several months after infection.
 - C. The HIV virus is dormant during asymptomatic periods
 - D. Persistent lymph node enlargement is often the first sign of HIV infection for many people.

HIV/AIDS Update (1 HOUR)

6. An HIV infected individual who has fewer than _____ per cubic milliliter of blood is considered to have AIDS. (p. 7)
- A. 300 lymphocytes
 - B. 200 CD4+T cells
 - C. 100 CD3+T cells
 - D. 26 leukocytes
7. Which test looks for actual virus in the blood? (p. 7-8)
- A. Antibody Test
 - B. Antigen/Antibody Test
 - C. Nucleic Acid Test
 - D. None of the above
8. Which class of antiretroviral drug prevents the virus from entering the cell? (p. 9)
- A. Nucleoside reverse transcriptase inhibitors
 - B. Protease inhibitors
 - C. CCR5 antagonists
 - D. Integrase strand transfer inhibitors
9. To reduce and prevent accidental exposure to HIV, health care workers should _____. (p. 10)
- A. Assume that body fluids from all patients are potentially infectious.
 - B. Develop a system to discreetly identify infectious patients.
 - C. Routinely use glove/gown barriers with all patients when providing any type of patient care.
 - D. Receive annual prophylactic gamma globulin injections
10. Under the Omnibus AIDS Act, it is a _____ for a health care worker to accidentally disclose a patient's HIV results (p. 13)
- A. discretionary breach
 - B. civil rights violation
 - C. first degree misdemeanor
 - D. third degree felony

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