HIV-AIDS

A One-Hour Continuing Education Module for All Eye-Care Professionals

(Optical Seminars Course # HS-04)

by

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I Introduction:

As required by the Florida Department of Health and the Florida Board of Opticianry, during a licensee's first license renewal period, all Florida-licensed opticians must complete a one-hour course that covers HIV and AIDS. This course will meet that requirement by providing information concerning HIV and AIDS regarding their history, misconceptions, transmission, prevention, and specific ocular and optical considerations. Other opticians may use this course to earn one hour of elective credit.

II Course Objectives:

Upon completion of this course, regarding HIV-AIDS, a participant should be able to:

- Discuss the origin of and be familiar with several landmark developments
- Know the many misconceptions and hoaxes surrounding them
- Be familiar with some of their signs and symptoms
- Explain how the human immune system is affected
- Know the ways HIV is, and is not, transmitted
- Know about the most common methods of testing
- Practice standard precautions and strategies for prevention
- Identify common ocular manifestations of AIDS
- Be generally familiar with the laws surrounding HIV-AIDS
- List standard operating procedures that an ECP should follow
- Reference outside resources for further research and information
- Receive a minimum score of 70% upon completion of the 20-question assessment

III Course Material:

In 2024, fewer than 5,000 American died from complications of HIV-AIDS. Thirty years before, in 1995, that number was nearly 51,000. That 90% reduction represents one of the most dramatic public-health successes in modern medicine. One of the most prolific, divisive, misunderstood issues in the last few decades is AIDS. AIDS (which stands for Acquired Immune Deficiency Syndrome) is a condition in which the human immune system has sustained considerable damage. It is merely a far-advanced form of HIV (which stands for Human Immunodeficiency Virus). Although AIDS was first identified as a new disease in 1981, some scientists theorize that it may have its origins centuries ago. However, most conventional researchers agree that in the modern era, AIDS originated in Africa somewhere between the late 1940s and early 1950s. It is believed that HIV evolved from SIV (Simian Immunodeficiency Virus). Over thousands of years, SIV evolved in these animals without causing severe disease, but when it crossed into humans (a process called zoonotic transmission), it adapted and became pathogenic (capable of causing disease) as HIV. Although various "exotic" theories exist as to how the virus jumped from monkeys to man, the most likely route of the transmission involved human contact with the blood of hunted primates.

Landmark developments between 1978-2026:

YEAR	DESCRIPTION OF EVENT	KNOWN U.S. DEATHS (AIDS)
1978	Gay men in America and Sweden, and heterosexual men in Haiti and Tanzania, begin to show symptoms of what will eventually be called AIDS.	**0**
1979	A female baby born in New Jersey in 1973 or 1974 to a sixteen-year-old girl who was identified as a drug-injector who had had multiple male sex partners. The child died in 1979 after having shown HIV/AIDS symptoms for 5 years; her stored tissues later tested positive for HIV-1	**0**
1980	Most AIDS cases are affecting white people. This trend will be reversed, and by 1996 most cases in the United States will affect Blacks.	**31**
1981	CDC reports 41 cases of Kaposi's Sarcoma among gay men; eight had died within 24 months of the diagnosis.	**234**
1982	CDC links this new disease with blood; initially called GRID (Gay Related Immunodeficiency Virus); later, the term AIDS is coined for the first time.	**449**
1983	Problem with the blood banks first identified; Pasteur Institute in France isolates the virus that causes AIDS (HIV).	**1,478**
1984	Dr. Robert Gallo (USA) claims to have discovered the virus that causes AIDS; this comes one year after the French discovery.	**3,454**
1985	First International Conference on AIDS; actor Rock Hudson succumbs to AIDS; FDA approves the first HIV antibody test	**6,854**
1986	US Surgeon General publishes major report on living with AIDS	**11,942**
1987	AZT becomes fits anti-HIV drug approved by the FDA; the US stops allowing HIV-positive immigrants into the country	**16,118**

1988	US mails 107 million copies of *Understanding AIDS*, by Koop; bans discrimination against federal workers with HIV.	**20,800**
1989	Haiti stops distributing tainted blood; actress Amanda Blake (*Gunsmoke*) dies of complications brought on by AIDS	**27,423**
1990	Ronald Regan apologized for his administration's neglect of "the epidemic."	**31,145**
1991	10 million people have HIV worldwide (WHO); 1 million in US (CDC); Basketball star Earvin "Magic" Johnson announces he is HIV positive	**36,220**
1992	FDA starts accelerated approval process for HIV-related drugs	**40,674**
1993	CDC revises definition of AIDS to include new opportunistic infections.	**44,991**
1994	AIDS becomes the leading cause of death for all Americans ages 25 to 44	**49,442**
1995	Germany convicts four people of selling HIV-tainted blood products	**49,895**
1996	Time names AIDS researcher, Dr. David Ho, as their man of the Year	**37,221**
1997	CDC reports first probable case of HIV transmission by kissing; approximate worldwide death toll from AIDS is 6,400,000; 22 million HIV-positive people worldwide.	**21,445**
1998	Supreme Court says Americans with Disabilities Act (ADA) covers people in early stages of HIV; not just AIDS patients).	**17,171**
1999	WHO announces that AIDS is the fourth largest killer in the world.	**16,762**
2000	On April 30, President Clinton declares HIV/AIDS a threat to national security.	**14,899**
2001	February 7 marks the first observance of National Black HIV/AIDS Awareness Day.	**8,998**
2002	Just fewer than 1 million people reported living with AIDS in the US (CDC).	**16,371**
2003	Side effects and drug resistance call into question the "hit hard and hit early" approach to treatment.	**16,690**
2004	On March 26, the U.S. Food and Drug Administration (FDA) approves the use of oral fluid samples with a rapid HIV diagnostic test kit that provides the result in approximately 20 minutes.	**16,395**
2005	May 19 is the first annual National Asian and Pacific Islander HIV/AIDS Awareness Day in the United States.	**16,268**
2006	June 5 marks 25 years since AIDS cases first reported.	**14,016**
2007	CDC announces that over 550,000 people have died due to AIDS in the United States since 1981.	**14,561**
2008	National Gay Men's HIV/AIDS Awareness Day first recognized 9/27.	**15,823**
2009	Newly elected President Barack Obama calls for the development of the first National HIV/AIDS Strategy for the United States	**17,053**
2010	On January 4, the U.S. Government officially lifts the HIV travel and immigration ban.	**15,529**
2011	On December 23, the journal *Science* announces that it has chosen the HPTN 052 study as its 2011 Breakthrough of the Year.	**14,823**
2012	1.3 million people are living with HIV in the United States; more than 32,000 people were diagnosed with AIDS; more than 49,000 diagnosed with HIV.	**12,853**
2013	Approximately 1,000,000 people in the United States are living with an HIV diagnosis.	**8,433**

2014	AmfAR (The American Foundation for AIDS Research) announces the launch of Countdown to a Cure for AIDS, a $100 million research initiative aimed at finding a broadly applicable cure for HIV by 2020	**6,721**
2015	In September, the WHO launched new treatment guidelines recommending that all people living with HIV should receive antiretroviral treatment, regardless of their CD4 count, and as soon as possible after their diagnosis.	**6,465**
2016	The 21st International AIDS Conference convenes.	**6,023**
2017	National Youth HIV and AIDS Awareness Day (April 10) established	**5,698**
2018	According to the United Nations, about 21 million people worldwide are undergoing antiviral treatment to combat AIDS.	**5,823**
2019	The NIH, in partnership with the Bill and Melinda Gates foundation pledges $200 million to eradicate AIDS and sickle-cell disease.	**4,753**
2020	According to Avert, more than 38 million people are living with HIV worldwide.	**4,748**
2021	According to CDC 14% (about 1 in 7) Americans living with HIV were unaware of their infection.	**4,977**
2022	In February, a woman living with HIV received a stem-cell transplant combining cord-blood-derived stem cells and adult stem cells (to treat acute myeloid leukemia). After stopping antiretroviral therapy (ART) for 14 months, no trace of HIV returned during that time. This case is significant because it suggests a potential pathway toward a functional cure of HIV, something that had been extremely rare.	**4,823**
2023	Lenacapavir introduced (brand name Sunlenca). It is a new-class "capsid inhibitor" antiretroviral. It was approved by the U.S. Food and Drug Administration (FDA) for treatment of adults with multi-drug-resistant HIV.	**4,496**
2024	In July 2024, Lenacapavir was shown in a large trial to be nearly 100% effective in preventing HIV infection when used as an injectable given twice a year.	**4,680**
2025	The UNAIDS 2025 Global AIDS Update warns that if global HIV funding drops abruptly, there could be an additional ~6 million new HIV infections and ~4 million AIDS-related deaths between now and 2029	**(*)**
2026	Approximate known deaths due to AIDS in the United States: 1981-2025	**723,000**

(*Sources for events and statistics include US Department of Health and Human Services; CDC)*
(*) Exact statistics unavailable

Hoaxes and Misconceptions:

Occasionally the CDC (Center for Disease Control) in Atlanta must issue statements to dispel the latest rumor, misconception or hoax related to HIV and its spread. Some of the more recent include:

1. People who have been stuck by needles in the coin slot return of public, pay telephones have contracted HIV. Denied.

2. I can get HIV simply by hanging around other people who are HIV-positive. Denied. As we will discover later, HIV is only transmitted person-to-person by blood, semen, vaginal fluid, or mother's milk.
3. I can get HIV from a mosquito bite. Denied.
4. People sitting on needles stuck in movie theatre or gas-pump handles seats have contracted HIV. Denied.
5. If a person looks healthy, they can't have HIV. Denied. A person can appear healthy and have no symptoms for years and still be HIV-positive. Testing is the only way to know.
6. People infected by improperly disposed syringes or needles have been exposed to HIV. Denied. In fact, according to the CDC, no person other than a health-worker who has suffered a needle-stick injury on the job has ever contracted HIV through exposure to disposed needles.
7. Researchers discovered a mutated version of HIV that can be transmitted through the air. This report first appeared in December 2000 in *The Weekly World News*, a tabloid newspaper of some questionable reputation which ceased publication in 2007. Regardless, the rumor spread rapidly, even finding its way into the mainstream media. The story was/is flat out not true.
8. HIV can be transmitted by contact with unused sanitary napkins. Another fantastical story, this one first appeared in March 2001, and then again resurfaced in August 2003. Of course, no one has ever contracted HIV by coming in contact with feminine pads – used or unused – still, the CDC recommends that used pads be wrapped and properly disposed of, so no one comes in contact with blood.
9. Using the same toilet seat as an infected person can cause HIV. Denied.
10. You can't get HIV through oral sex. Denied. While less risky than other types of sex, it *is* possible to contract HIV through unprotected oral sex. Always use a latex barrier during oral sex.
11. Touching, hugging, shaking hands, swimming in the same pool, or eating in the same restaurant can cause transmission…denied.
12. HIV = AIDS and having HIV means you will get AIDS and that death is inevitable. While death is indeed inevitable, with modern antiretroviral therapy (ART), many people with HIV live long, healthy lives and may never develop AIDS. HIV is the virus; AIDS is a later stage of the disease.

To learn more about these and other misconceptions, contact the Center for Disease Control at their website: http://www.cdc.gov/ or by phone: (800) CDC-INFO or (800) 232-4636.

Signs and Symptoms:

Although there are some common signs and symptoms, the only way you know if you are infected with HIV is to be tested. Many people who are infected with HIV exhibit few, if any, symptoms, for many years.

However, most people who contract the HIV virus usually experience symptoms not unlike the common cold or flu, followed by, sometimes, nothing. The incubation period for HIV can sometimes last a long, long time. Then, some of the most common symptoms include fever, prolonged fatigue, diarrhea that last for more than a week, skin rashes, night sweats, loss of appetite, dry cough, swollen lymph glands, significant unexplained weight loss, white spots or unusual blemishes on the tongue or in the mouth, vaginal discharge (similar to a yeast infection), memory

loss, and movement or coordination problems. Sometimes red, pink, or purplish blotches appear on or under the skin, or inside the mouth, nose, or eyelids. While no one should assume they are infected if they exhibit any of the symptoms, it is important to be tested as many people mistake these early symptoms for a simple viral infection. Ironically, it is during this initial phase when the virus is most infectious. Each of these symptoms could be related to other illnesses. Again, the only way to determine whether you are infected is to specifically be tested for HIV.

How the immune system is affected:

HIV invades the cells of our immune system and in a sense, reprograms the cells to become HIV-producing "factories." The HIV attaches itself to CD4 and T-cells, which are part of the body's immune system. One of the functions of the CD4 and T-cells is to act as "messenger" cells. When the body is "attacked" by an infection or virus, these CD4 and T-cells send messages to other white blood cells in the body, alerting them of the infection and telling them to go and fight it. The HIV "attaches" itself to these other cells, making it more and more difficult for them to do their job of alerting the "fighter" cells to go do their job. Slowly, the number of immune cells in the body dwindles, and AIDS develops. Once AIDS begins to manifest itself, the body is more susceptible to many different infections.

To state it in another way: When someone becomes infected with HIV, the virus attacks the body's immune system by invading CD4 (helper) T-cells, which are white blood cells that coordinate immune defenses. Once inside these cells, HIV takes over their genetic machinery to make copies of itself, destroying the cells in the process and spreading to others. Over time, as more CD4 cells are lost, the immune system grows weaker and less able to fight off infections or certain cancers. Without treatment, this gradual damage leads to AIDS, the stage when even minor illnesses can become life-threatening. Effective antiretroviral therapy can stop the virus from multiplying, allowing the immune system to recover and stay strong.

No one dies from HIV or AIDS directly. Instead, an AIDS-infected person dies from infections, since his or her immune system has been compromised as described above. An AIDS patient sometimes dies of cancer but could just as easily die from a common cold; the patient's body simply cannot fight off the infection, so he or she eventually dies. Some of the most common conditions that ultimately cause death in an AIDS patient include pneumonia, tuberculosis, CMV (cytomegalovirus) infections that often affect the eyes, brain, or digestive tract, toxoplasmosis, and cancers like Kaposi's sarcoma or non-Hodkin lymphoma.

Ways that HIV is (and is not) transmitted:

According to *HIV Transmission Overview and HIV Risk Behaviors* (updated 2024) these are the top 10 behaviors that can transmit HIV, listed from the riskiest behavior to the least risky:

1. Unprotected anal sex – The highest-risk sexual behavior because the rectal lining is thin and easily torn, allowing the virus to enter the bloodstream.

2. Unprotected vaginal sex – HIV can enter through the vaginal or penile tissues if one partner is infected and no condom is used.

3. Sharing contaminated needles or syringes – Common among people who inject drugs; the virus can be transmitted directly through blood.

4. Receiving contaminated blood transfusions or organ transplants – Now extremely rare in developed countries due to strict screening, but still a risk in areas without reliable testing.

5. Mother-to-child transmission during pregnancy, birth, or breastfeeding – Without treatment, HIV can cross the placenta, be transmitted during delivery, or through breast milk.

6. Sharing unsterilized medical or tattoo equipment – Needles or instruments that contact infected blood can pass the virus if not properly cleaned.

7. Occupational exposure (needle sticks in healthcare settings) – Healthcare workers can be infected through accidental contact with infected blood.

8. Receiving injections from reused needles or syringes in non-medical settings – Sometimes occurs in informal healthcare, cosmetic, or drug-use contexts.

9. Exposure to infected blood through open wounds or mucous membranes – Rare but possible if infected blood contacts cuts, sores, eyes, or the inside of the mouth.

10. Oral sex. Low risk compared to other routes but still possible if blood or semen contacts mucous membranes.

For more information, follow this link:

https://www.cdc.gov/hivpartners/php/riskandprevention/?CDC_AAref_Val=https://www.cdc.gov/hiv/risk/estimates/riskbehaviors.html

It is important to note that HIV is not transmitted through casual, non-invasive contact. There are no known cases of people being infected by mosquito bites, holding hands, sharing eating utensils, using public toilets, or donating blood. (Infection by donating blood is extremely rare, since all donated blood products have been tested since 1985.) While HIV has been detected in tears and in the tear layer of patients, it has only been detected in the lowest measurable concentration, and there is no known case of transmission by simply being exposed to tears.

Regardless of how exposure to HIV occurs, the average time between HIV infection and the onset of AIDS is eight to ten years. Once contracted, the virus/disease is considered permanent. It is important to note that during the latency period of AIDS it is still communicable, meaning that even though an HIV-positive individual is leading a symptom-free life, he or she could still expose others to the disease. These two characteristics – latency and permanence – are the primary reasons that AIDS has reached pandemic (widespread) proportions in many undeveloped parts of the world. It is also important to remember that with antiretroviral therapy (ART), most people never develop AIDS — the virus can be suppressed indefinitely, keeping the immune system strong and life expectancy near normal.

Common methods of testing for HIV:

As of 2024, the CDC recommends that people between the ages of 13-64 be tested for HIV at least once as part of a routine medical exam. Some different testing methods include:

Nucleic Acid Tests:

NATs look for the actual virus in the blood. This test is very expensive and is not routinely used for HIV screening unless the person recently had a high-risk exposure or a possible exposure with early symptoms of HIV infection. A NAT can usually detect HIV infection 10 to 33 days after an exposure.

Antibody Tests:

Antibody tests look for antibodies to HIV in your blood or oral fluid. Antibody tests can take 23 to 90 days to detect HIV infection after an exposure. Most rapid tests and the only FDA-approved HIV self-test 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 prick or with oral fluid. (99.8% accuracy).

Antigen Tests:

Antigen/antibody tests look for both HIV antibodies and antigens. Antibodies are produced by your immune system when you're exposed to viruses like HIV. Antigens are foreign substances that cause your immune system to activate. If you have HIV, an antigen called p24 is produced even before antibodies develop. Antigen/antibody tests are recommended for testing done in labs and are now common in the United States. An antigen/antibody test performed by a laboratory on blood from a vein can usually detect HIV infection 18 to 45 days after an exposure. There is also a rapid antigen/antibody test available that is done with a finger prick. Antigen/antibody tests done with blood from a finger prick can take longer to detect HIV (18 to 90 days after an exposure). (99.6% accuracy).

Rapid Tests:

The rapid tests are immunoassay tests that produce fast results – sometimes in as little as 30 minutes. These tests generally use blood or oral fluid to look for antibodies to HIV. If these tests are conducted in the incubation/window period, a false-negative may result. Follow-up tests should be conducted to confirm the result, even though they are advertised as being 99% accurate.

PCR Test (Polymerase chain reaction test):

This test detects the genetic material of HIV itself and can identify HIV in the blood within 2-3 weeks of infection.

Babies born to HIV-positive mothers are tested with a special PCR test, because their blood contains their mother's HIV antibodies for several months. This means they would test HIV-positive on a standard antibody test—but a PCR test can determine whether the babies have HIV themselves.

Blood supplies in most developed countries are screened for HIV using PCR tests. PCR tests are also used to measure *viral loads* for people who are HIV-positive. This test finds either the RNA

of the HIV virus or the HIV DNA in white blood cells infected with the virus. PCR testing isn't done as often as antibody testing because it requires technical skill and expensive equipment.

Home-Testing Kits:

As of January 2022, the OraQuick In-Home HIV Test was the only HIV test approved by the FDA that people can use to test themselves at home or in a private location. OraQuick was approved in 2012 for sale in stores and online to anyone age 17 and older. The kit does not require sending a sample to a lab. It tests fluids from the mouth and delivers results in 20 to 40 minutes. The testing kit costs @ $40.00.

As of October, 2025, the Insti-HIV Self Test has also been FDA-approved.

For home-testing kits that require a blood sample be sent to the lab an accuracy rate of 99.9% is reported.

Standard Precautions and Strategies for Prevention:

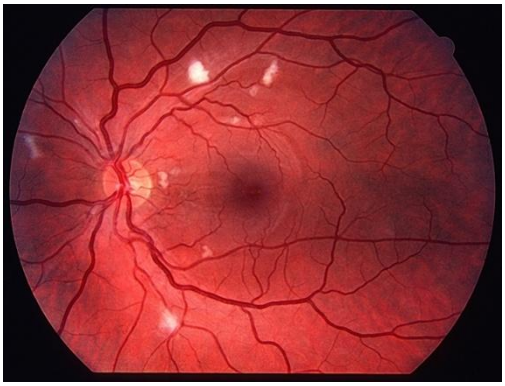
Standard precautions for controlling the spread of HIV include:

- Not having sex with an infected or unknown person.
- Not sharing needles or syringes with an infected or unknown person.
- Avoiding any risky behaviors that involve bodily secretions.
- Educating people about the disease.

Common Ocular Manifestations of HIV and AIDS:

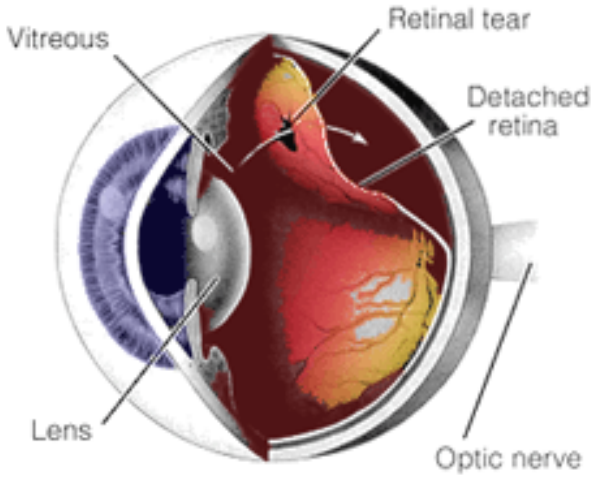
Generally, people who are simply HIV positive rarely have conditions that adversely affect their eyesight. Because HIV attacks the immune system, however, eye infections are common in people living with the virus. Clinical and autopsy studies show that 75% of patients with AIDS will have some sort of serious, optical findings. According to the American Academy of Ophthalmology, complications include:

1. HIV Retinopathy - This is the most common ocular finding for people with AIDS. Eventually seen in 40-60% of HIV-positive patients. While it is not sight threatening, it affects the retina (the inner layer of the eye that sends signals to the brain) by causing a small amount of bleeding and white spots (called cotton wool spots) on the retina itself. This will sometimes cause mild visual blurring.



2. CMV Retinitis – Cytomegalovirus (CMV) is found in @ 25% of AIDS patients. This is the most common sight-threatening infection in AIDS patients. It causes a serious infection of the retina and occurs usually when the patient's T-cell count is dangerously low. CMV can cause permanent loss of vision. An ophthalmologist should be contacted if a patient notices floating spots, flashing lights, blind spots, or blurred vision. Untreated, CMV can also cause retinal detachment and eventually blindness. Since the introduction of ART (antiretroviral therapy) the incidence of CMV has dropped dramatically.

3. Detached Retina - As stated above, CMV retinitis can cause a detached retina. This is a serious ocular event that almost always requires surgical repair.



4. Severe Red Eye – People with AIDS can have severe red eyes and infections that last a very long time. This sometimes evolves into ocular shingles.

5. Kaposi's Sarcoma – This is a kind of cancerous tumor that usually appears as red/purple spots. The tumor may look frightening, but it usually does not harm the eye. It can be treated with radiation, laser therapy, freezing, or surgery

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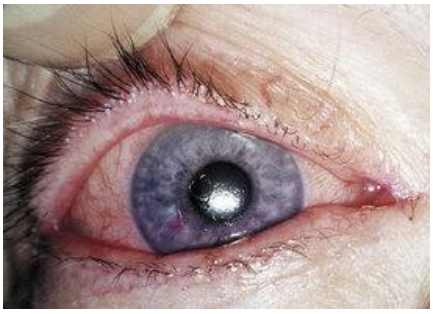
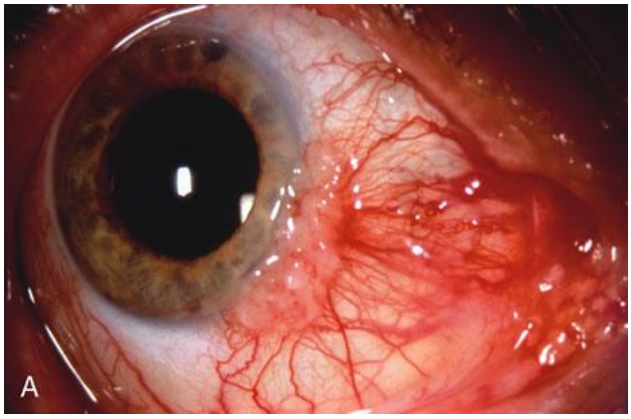
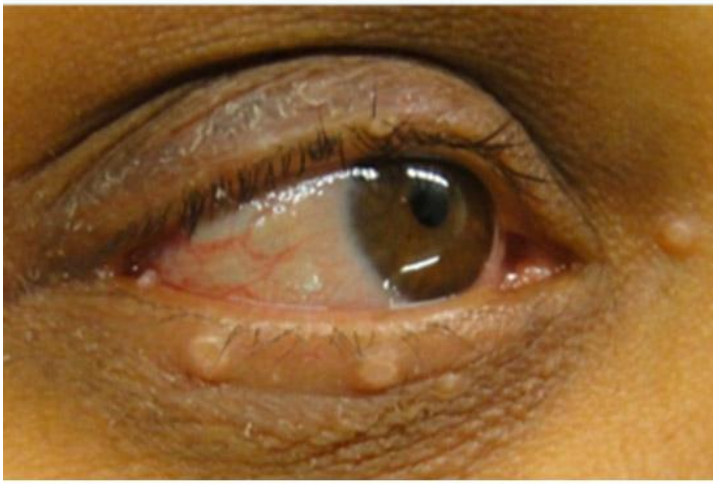
6. Extreme Dry Eye.



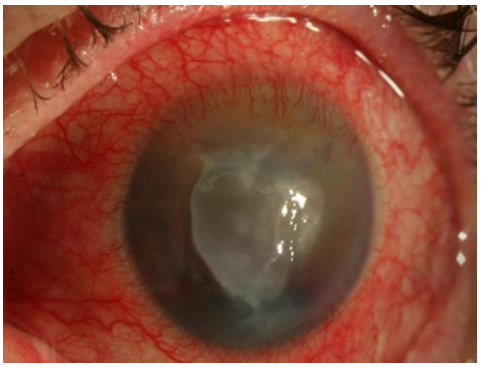
7. Squamous Cell Carcinoma of the Conjunctiva - This is a tumor of the conjunctiva. Studies have shown that this is associated with HIV-AIDS patients, prolonged exposure to sunlight, and infection with the Human Papilloma Virus (HPV).



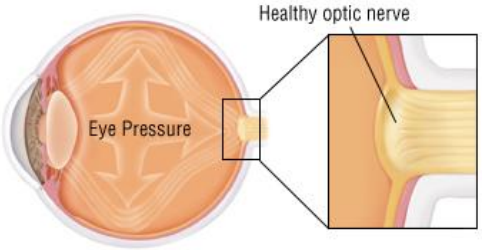
8. Molloscum Contagiosum – Flesh-colored, nodular growths near the eyelid.



9. Severe Corneal Infections – Usually occurring in AIDS patients who contracted HIV as an IV drug user.



10. Swelling of the Optic Nerve – This condition is like the symptoms shown by patients suffering from glaucoma.



At only two pages, the organization Prevent Blindness publishes what I believe is the best and most concise article regarding most of what is covered in this module. It is available to download and print for free. You may do so by following this direct link:

https://preventblindness.org/hiv-aids-and-the-eye/

Precautions for Dispensing Opticians Regarding HIV

While the risk of occupational exposure to HIV in optical dispensing is extremely low, every optician should follow universal precautions to ensure both personal safety and patient protection. These practices assume that all blood and bodily fluids may be potentially infectious and should be handled accordingly.

Key Precautions:

Glove Use: Wear disposable gloves whenever there is a possibility of contact with blood, tears, or other body fluids—such as when assisting with contact lens insertion, handling contaminated frames, or cleaning instruments.

Disinfection Procedures: Clean and disinfect all tools, counters, and frame adjustment areas with an EPA-approved disinfectant after each use, particularly when skin contact or mucous contamination is possible.

Hand Hygiene: Wash hands thoroughly before and after every patient interaction, even if gloves were used. Alcohol-based sanitizers are acceptable when handwashing is not immediately possible.

Sharps and Tools: Avoid using sharp instruments near the eyes or skin unless absolutely necessary, and ensure all tools are properly sanitized between uses. Dispose of any broken glass or sharp objects in approved containers.

Protective Barriers: Use appropriate protective eyewear or masks if there is any risk of splashing fluids during frame adjustments or laboratory work.

Incident Response: In the rare event of exposure—such as a needlestick, cut, or contact with blood—immediately wash the area, report the incident to a supervisor, and follow your facility's post-exposure protocol.

Education and Awareness: Stay current on OSHA Bloodborne Pathogen Standards and Florida Department of Health infection control guidelines relevant to optical professionals.

By maintaining consistent infection-control practices, opticians demonstrate professionalism, protect themselves and their patients, and contribute to a safe healthcare environment.

HIV/AIDS and Florida Law:

The Florida Omnibus AIDS Act of 1988 specifically lays out protections for Florida's citizens who are HIV positive or who are living with AIDS. The law, which was amended in 1991, ensures that HIV/AIDS citizens cannot be discriminated against in the workplace and should be allowed to remain at their jobs if it is possible. The act also says that employees cannot be denied raise and/or promotions due to their HIV/AIDS status. It also addresses "informed, voluntary, and confidential" use of testing procedures designed to test for human immunodeficiency. This means that people can undergo testing without the fear of having these test results passed on to their employers with detrimental ramifications.

Generally, an employer cannot make HIV testing mandatory, unless they can show that being free of HIV is indeed a BFOQ (bona-fide occupational qualification). In the interest of public safety and health, voluntary testing is encouraged.

It is also illegal to force a patient to undergo an HIV test prior to receiving medical care or emergency treatment. Hospitals and EMTs (emergency medical technicians) are required to treat people without regard to HIV status. People with HIV/AIDS are protected under the ADA (Americans with Disabilities Act). Again, in the interest of public safety and health, people are encouraged to disclose their HIV status to health care officials.

The Florida law also makes it a felony for any HIV-positive person to knowingly donate their infected blood, or to have sexual intercourse before informing their prospective partner of their HIV status.

The Florida Department of Health, HIV AIDS Bureau promulgates information and was updated in 2021. It is a great resource to delve deeper into Florida law as it relates to HIV/AIDS. ANOTHER GREAT Internet resource is The Center for HIV Law and Policy. Start at the following link:

http://www.hivlawandpolicy.org/states/florida

Federal HIPAA (Health Insurance Portability and Accountability Act) laws further protect the privacy rights of all individuals.

The Florida Omnibus AIDS Act and Its Relevance to Opticianry

The Florida Omnibus AIDS Act, enacted in 1988 and incorporated into Chapter 381, Florida Statutes, was designed to protect the public's health while safeguarding the rights and privacy of individuals living with HIV and AIDS. Although opticians are not directly involved in diagnosing or treating medical conditions, the law still affects their professional responsibilities, confidentiality practices, and infection-control standards.

1. **Confidentiality of HIV-Related Information**. Opticians may occasionally become aware of a patient's HIV status through disclosure or medical records shared for vision-related services. Under the Act, any information that identifies a person as having HIV or AIDS is strictly confidential. It may not be shared with others—including co-workers, other patients, or insurance representatives—without written consent from the patient or unless otherwise permitted by law. Unauthorized disclosure is a violation of Florida law and may result in disciplinary action and civil penalties.

2. **Nondiscrimination in Service**. The Act prohibits discrimination against individuals based on real or perceived HIV infection. Opticians, as healthcare professionals, must provide the same quality of care to all patients, regardless of HIV status. Refusing to adjust, fit, or dispense eyewear to an HIV-positive patient constitutes discrimination and is prohibited by both the Florida Omnibus AIDS Act and federal civil rights laws.

3. **Universal Precautions and Safety Standards.** The Act reinforces the importance of infection-control practices—commonly referred to as universal precautions. Opticians should assume that all patients could be infectious and must use appropriate hygiene, disinfection, and protective measures. These include cleaning tools and frames between patients, wearing gloves when contact with body fluids is possible, and maintaining a clean work environment.

4. **Duty to Educate and Prevent Transmission.** Florida's public health policy emphasizes education as the most effective means of HIV prevention. Licensed opticians are expected to stay informed about current guidelines and participate in required continuing education related to HIV/AIDS to ensure ongoing awareness and competence in handling potential exposures responsibly.

Universal Precautions for Healthcare Workers;
Specific Precautions/Guidelines for Eye-Care Professionals;

Post-Exposure Prophylaxis:

Generally, all healthcare workers should treat blood, fluids, and patients they encounter as though they were infected. Potentially dangerous fluids include blood, semen, vaginal fluid, synovial fluid, cerebrospinal fluid, amniotic fluid, saliva present during some dental procedures (where blood is likely).

The three elements of Universal Precautions include:

1. Barrier protection
2. Personal hygiene
3. Environmental and instrument disinfection

Barrier protection includes things like gloves, masks, gowns – anything that forms a physical shield (barrier) between the healthcare worker and possibly infectious materials. Gloves should be worn whenever you might come in contact with fluid that may contain blood, and/or where dermatological lesions are present on your hands. Gloves should be removed and properly disposed of after each patient encounter.

It should be noted than the above precautions are "universal," in nature, meaning all healthcare workers should comply with them. It should also be noted that for ECPs, the single most effective step to take in the prevention of the spread of HIV is to thoroughly wash hands in between each patient encounter. That alone should be sufficient, but when extraordinary circumstances exist, follow the guidelines outlined above. Consider the following chart, which outlines *actual*, documented cases of infection, as well as *possible* cases of transmission, listed regarding the specific, healthcare profession. These statistics are for the United States, 1983-2001:

OCCUPATION	DOCUMENTED OCCUPATIONAL TRANSMISSION	POSSIBLE OCCUPATIONAL TRANSMISSION
Dental worker, including dentist	0	**6**
Embalmer; morgue technician	1	**2**
EMT (Emergency Medical Technician)	0	**12**
Health aid; attendant	1	**15**
Housekeeper; maintenance	2	**13**
Labor technician, clinician	16	**17**
Laboratory technician (non-clinical)	3	**0**
Nurse	23	**35**
Physician, non-surgical	6	**12**
Physician, surgical	0	**6**
Respiratory therapist	1	**2**
Dialysis technician	1	**3**
Surgical technician	2	**2**
Technician/therapist, other than listed	0	**9**
Other healthcare occupations (including ECPs)	0	**4**
TOTAL	**56**	**138**

(*Source: Avert – Healthcare Workers and AIDS Prevention; www.avert.org/needlestick.htm*)

Remember, ECPs would fall into the category of "other healthcare occupations." In the 18 years for which statistics are available, only four *possible* occupational transmissions occurred for *all* "other" healthcare professions, of which ECPs are an infinitely small percent.

You will note that the chart only covers the years between 1983 and 2001. While this type of comprehensive breakdown is not available for more recent years, Avert has issued more general statistics that cover through the year 2006: " Up until December 2006, health care workers in the USA reported 57 occupational HIV infections. Of these, 48 had percutaneous exposure; 5, mucocutaneous exposure; 2, both percutaneous and mucocutaneous exposure; and 2, an unknown route of exposure. In addition, 140 possible occupational transmissions have occurred among healthcare personnel. These are cases in which a worker is infected with HIV and has a history of occupational exposure but did not have a test immediately before and after the possible exposure. As no other risk factors are reported, it is most likely that the infection has occurred because of that occupational exposure. It should be noted that because of the voluntary nature of the reporting system, there might be some under-reporting of cases. In addition, the U.S. Centers for Disease Control and Prevention emphasize that over 90 percent of health care workers infected with HIV also have non-occupational risk factors for acquiring their infection."

Since then, the CDC offers the following statistics: "As of December 31, 2013 (the latest statistics available), a total of only 58 confirmed occupational transmissions of HIV and 150 possible transmissions had been reported in the United States. Of these, only one confirmed case has been reported since 1999. Underreporting of cases to CDC is possible, however, because case reporting is voluntary. Health care workers who are exposed to a needle stick involving HIV-infected blood at work have a 0.23% risk of becoming infected. In other words, 2.3 of every 1,000 such injuries, if untreated, will result in infection. Risk of exposure due to splashes with body fluids is thought to be near zero even if the fluids are overtly bloody. Fluid splashes to intact skin or mucous membranes are extremely low risk of HIV transmission, whether or not blood is involved."

As unlikely as it may be, if exposure to HIV occurs, it is important that ECPs follow specific steps following the exposure. This called Post-Exposure Prophylaxis (PEP). Most healthcare facilities will have a specific protocol in place, but absent that you should first wash away the suspected blood or body fluid using generous amounts of water and antibacterial soap. If you have experienced a puncture wound, encourage bleeding, and wash thoroughly again. If your eyes have been affected, rinse them thoroughly with saline solution. If your mouth has been affected, rinse thoroughly with water. Follow your organization's procedures for reporting the incident. Research indicates that using anti-HIV drugs (such as AZT) soon after exposure will minimize the risk of transmission. Therefore, immediately seek medical treatment for testing and prophylactic treatment.

Having said all that, the following precautions and guidelines apply to eye care professionals and are taken directly from CDC literature: "Healthcare professional performing eye examinations or other procedures involving contact with tears, should wash their hands after each procedure and in-between patients. Hand washing alone should be sufficient, but when practical and convenient, disposable gloves may also be worn. The use of gloves is advised when there are dermatological lesions on the hands. The use of other protective measures such as masks, gowns, and goggles is not indicated."

Instruments that come in direct contact with external surfaces of the eye should be wiped clean and then disinfected using one of the following methods:

- A 5–10-minute exposure to a fresh solution of 3% hydrogen peroxide.

- A fresh solution containing 5,000 parts per million (mg/l) of available chlorine, which is the equivalent of a 1/10 dilution of common, household bleach.
- A 70% solution of ethanol or isopropyl alcohol.

Whichever method is used, the device should be thoroughly rinsed with tap water and dried before each use.

Regarding contact lenses, disposable lenses should be used whenever possible. Unless otherwise restricted by prescription availability or patient financial restrictions, daily disposable contacts should be considered standard of care. Non-disposable contact lenses used in trial fittings should be disinfected in-between each fitting by one of the following methods:

- Hard lenses should be disinfected with a hydrogen peroxide system that was commonly used for soft CLs. Alternately, most hard lenses could be heat treated for a minimum of 10 minutes. (Check with lens manufacturer for best method.)
- RGP lenses should follow the same guidelines as above, however, care should be given, as heat-treating may warp some RGP lenses. (Check with lens manufacturer.)
- Soft lenses should also be disinfected using the hydrogen peroxide or heat method listed above. (Check with lens manufacturer for specific guidelines.)

Resources for further research and information:

- *Living Well with HIV and AIDS* by Allen L. Gifford, et al
- *The AMFAR AIDS Handbook: The Complete Guide to Understanding HIV and AIDS* by Darrell E. Ward
- *Practice Issues in HIV and AIDS: Models and Program Applications* by Ronald J. Mancoste, editor
- Websites:
  - *www.cdc.gov*
  - *www.amfar.org*
  - *www.aids.org*
  - *www.avert.org*

IV Final Assessment

1. Between 1981 and 2025, according to the CDC, approximately how many people in the United States have died of AIDS?

    a. 332.000
    b. 423,000
    c. 523,000
    d. 723,000

2. If an ECP comes in contact with HIV-infected blood, he or she should wash the exposed area thoroughly, follow practice guidelines, and seek immediate medical attention. This is all known as:

    a. Post-Exposure Prophylaxis
    b. ECP AIDS Protocol
    c. AZT Prevention Method
    d. None of the above

3. Medical instruments that come in contact with the eye should be disinfected using which of the following methods, before rinsing with water and thoroughly drying?

    a. A 5–10-minute exposure to a 3% hydrogen peroxide solution
    b. A fresh solution equivalent to a 1/10 dilution of household bleach
    c. A 70% solution of ethanol alcohol
    d. Not all are necessary, but either a, b, or c are acceptable

4. Between 1983-2001, how many healthcare workers in the category of ECPs had a *possible* occupational transmission of HIV?

    a. 0
    b. 4
    c. 14
    d. 44

5. HIV has never been documented to be transmitted by:

    a. Blood and semen
    b. Vaginal fluid
    c. Breast fluid
    d. Tear film

6. Generally speaking, all healthcare workers should treat blood, fluids, and patients they come in contact with:

a. As though they were infected
b. As if they were not infected
c. Casually
d. On a case-by-case basis

7. Some scientists have theorized that the origin of HIV may be:

a. Centuries old
b. Decades old
c. Never known
d. Not important

8. According to clinical and autopsy findings, what percentage of AIDS patients exhibit some sort of serious ocular condition?

a. 25%
b. 50%
c. 75%
d. 100%

9. By far, when it comes to known occupational transmission of HIV and possible occupational transmission of HIV, the most dangerous medical profession is:

a. Surgeon
b. Ophthalmologist
c. Nurse
d. Optician

10. Which President of the United States publicly apologized for his administration's "neglect" of the epidemic of AIDS?

a. Richard Nixon
b. Bill Clinton
c. Ronald Reagan
d. George W. Bush

11. Disinfection of instruments with hydrogen peroxide, chlorine bleach, or alcohol is indicated:

a. At the end of business each and every day
b. If they have made contact with the ocular surface of a known AIDS patient
c. If they come in direct contact with the external surface of the eye
d. Weekly

12. How often should healthcare workers performing eye exams or other ocular procedures wash their hands?

a. At least once an hour
b. In between each and every patient encounter
c. When it is convenient and sinks are readily accessible
d. At the beginning of a shift and after being exposed to bodily secretions

13. Barrier protection, personal hygiene, instrument sterilization, and environment sterilization are all examples of:

a. Specific precautions for ophthalmic eye-care professionals
b. Specific precautions for optometrists
c. General precautions for eye care professionals
d. General precautions for all healthcare workers

14. The most common HIV tests:

a. Look for antibodies in your body rather than for HIV itself
b. Are currently only about 75% accurate
c. Are extremely costly
d. Should be conducted annually for all healthcare workers

15. HIV has not been known to spread through:

a. Oral sex
b. Exposure to an infected person's tears
c. Safe sex
d. Exposure to an infected person's blood

16. The home testing kits that are now available are accurate to what degree?

a. 75%
b. 85%
c. 99.9%
d. 100%

17. Unless there are prescription or financial restrictions, what should be considered standard of care for contact lens wear in the 21st century?

a. Lenses that are disposed of every day
b. Weekly disposable lenses
c. Disinfection using hydrogen peroxide regimens only
d. Gas-permeable lenses which are less porous than soft lenses

18. Protections for Florida citizens with HIV-AIDS were first laid out in the Florida Omnibus AIDS Act, enacted in what year?

a. 1981
b. 1988
c. 1991
d. 1998

19. Though not as common as antibody tests, which type of test for HIV can be done much earlier than others - as little as 1-3 weeks after exposure?

a. Most home-testing kits
b. Post-exposure prophylaxis tests
c. Antigen tests
d. AZT tests

20. For an HIV infected person to knowingly donate blood or to have sex without disclosing HIV status to his or her partner in the state of Florida is:

a. Something that happens regularly
b. Something that was "officially discovered" by Governor Scott in a 2014 speech
c. A misdemeanor
d. A felony